Exploring the Concept and Nature of Premarital Preconception Care in Indonesia: A Qualitative Comparative Case Study Design

Winarsih Nur Ambarwati

Submitted in accordance with the requirements for the degree of Doctor of Philosophy

The University of Leeds

School of Healthcare

July 2024

The candidate confirms that the work submitted is her own and that appropriate credit has been given where reference has been made to the work of others.

This copy has been supplied on the understanding that it is copyright material and that no quotation from the thesis may be published without proper acknowledgement.

The right of Winarsih Nur Ambarwati to be identified as the Author of this work has been asserted by her in accordance with the Copyright, Designs and Patents Act 1988.

© 2024 The University of Leeds and Winarsih Nur Ambarwati

Dedication

I dedicate this PhD thesis to my mother, my family, and all women in the world who fight for themselves and their families for a better life.

My mother is the image of a woman who is less fortunate because she did not have the opportunity to receive an education and bore the enormous responsibility of reproductive duties without access to quality healthcare, raising her children amidst economic limitations.

My beloved mother (may she rest in peace) is an illiterate, strong, and brilliant woman living in rural Central Java Island. She gave birth to her nine children with the help of traditional birth attendants. Unfortunately, hunger and disease caused three of her children to die. Being the wife of a poor farmer forced her to earn extra money by selling her crops, walking several kilometres in the morning before sunrise, despite her rheumatic bones causing her pain when walking. Amazingly, she always managed to set aside money for her children's school needs, including mine. Her perseverance, fortitude, strength and sincerity in facing all problems have provided valuable inspiration for me. As a result, I became the only child who succeeded in pursuing higher education up to the doctoral level. The happiness of this achievement feels less than perfect because the great woman behind my educational success has passed away, but I am sure that mother is happy knowing her efforts were not in vain.

Acknowledgements

First and foremost, I am extremely grateful to my supervisory team, Professors Linda McGowan, Dr Yu Fu, and Professor Janet Hirst for their invaluable advice, tremendous support, motivation, passion, enlightenment, and patience during my PhD study. Their immense knowledge and plentiful experience have encouraged me throughout my academic research and daily life. I am very grateful and blessed to have them as my supervisors. I also express my deepest gratitude to the Head of the PGR Tutor at School of Healthcare, Dr Netalie Shloim, who has been very responsive and helped facilitate all academic and administrative matters.

I sincerely appreciate the Indonesian Ministry of Education and Culture, through the Directorate General of Technological Resources and Higher Education of the Republic of Indonesia, for providing me with an educational scholarship for my Doctoral programme at University of Leeds, United Kingdom. I would also like to thank Universitas Muhammadiyah Surakarta (UMS) Indonesia, my affiliated institution, for all its support.

My gratitude extends to all the participants in this PhD study and my colleagues in the research field for their participation, ensuring that the data collection process ran smoothly within the timeframe.

A big thank you is extended to my PhD colleagues at the School of Healthcare, Vinami, Fitria, Rabah, and Sarah, for their wonderful friendship in the journey of pursuing my PhD. I am indebted to all friends from the community and family from Indonesia, especially Ririn, Ida, Santi, Lisma, Winny, Eka, Corry, Nana, Andy, Chika, Diah, Lydia, Prima, and Leily who have encouraged, accompanied and took care of me while receiving treatment at Leeds Teaching Hospital: St James's University Hospital.

I also realise that without the ongoing support of a few special people in my life, completing a PhD would have seemed unattainable. My beloved husband, Andy Indaryadi, has patiently, understandingly, and faithfully accompanied me through the ups and downs during my PhD journey. My children Aryo, Sonia, and Kevin, your smiles and laughter are my encouragement and strength. My brothers Tugiman, Warsito (may he rest in peace), Sularjo, and my sisters Sartini, Warsini and Warsiti have encouraged and supported my study until its completion.

Finally, I akcnowledge that this thesis was proof-read before submission by a third-party proofreader. I confirm that third-party proofreading undertaken was in accordance with the Postgraduate Researcher Proof-reading Policy.

Abstract

This qualitative comparative case study explores the experiences of premarital preconception care (PPCC) in Indonesia. High maternal mortality rates in LMICs are often linked to women's preconception health. Research highlights the growing provision of preconception services in LMICs, emphasising the need to engage women and men (as couples) to improve health outcomes. However, understanding of PPCC in Indonesia remains limited, despite its potential to enhance pre-pregnancy health when effectively implemented.

This study aims to explore the concept and nature of PPCC from the perspectives of service users and providers.

Initially, a scoping review was conducted to characterise PCC models involving couples in LMUICs, identifying research gaps, and guide the development of research questions for the Indonesian context. A qualitative comparative case study design was employed to collect data from 93 service users and 29 providers across two case sites through interviews, observations, and document reviews. Thematic and content analyses explored individual cases, while narrative synthesis facilitated cross-case analysis, offering a comprehensive study overview.

The findings suggest that involving couples in PPCC services can improve pre-pregnancy health and strengthen relationships, especially when tailored to local religious and socio-cultural values. However, further efforts are needed to improve service management, accessibility, and organisation for positive user experiences. PPCC services must address socio-cultural and religious factors within the local context.

This study provides insights into the experiences of service users and providers in PPCC implementation and recommends enhancing service structures, infrastructure, and training to meet local community needs. It highlights that PPCC's maternal focus limits support for men, despite their potential to aid maternal health, strengthen relationships, and prepare for fatherhood. Sociocultural and religious considerations are important for acceptable, and effective PPCC. Adequate funding and effective communication are also vital to ensure equitable access, maximising the program’s benefits for maternal and family health.

Keywords: comparative case study, couples, premarital preconception care, socio-cultural and religious

Table of Contents

Dedication ... **iii**
Acknowledgements ... **iv**
Abstract ... **v**
Table of Contents ... **vi**
List of Tables ... **x**
List of Figures ... **xi**
List of Appendices ... **xii**
List of Abbreviations ... **xiii**
Glossary of Terms ... **xvii**
Chapter 1 Background and Context of Study ... **1**
1.1 Introduction ... 1
1.2 Positionality Statement ... 1
1.3 Background ... 2
1.4 Preconception Care (Definition and Concept) ... 4
1.4.1 Definition of Preconception Care ... 4
1.4.2 Strategic Role of Preconception Care ... 5
1.4.3 Involving Couples in Preconception Care ... 5
1.5 Research Context: Indonesia ... 8
1.5.1 Demographic Data ... 8
1.5.2 Overview of the Healthcare System in Indonesia ... 10
1.5.3 Current Maternal Health ... 13
1.5.4 Government Regulation Related to Maternal and Child Health Services 15
1.5.5 Premarital Preconception Care (PPCC) ... 18
1.6 The Research Problem ... 19
1.7 The Research Aims/Significance of the Study ... 20
1.8 Summary of Background and Context of Study ... 21
1.9 Structure of Thesis ... 21
1.10 Chapter Conclusion ... 23
Chapter 2 Scoping Review ... **24**
2.1 Introduction ... 24
2.2 Rationale for Selecting the Scoping Review ... 24
2.3 Aim of the Review ... 25
2.4 Methods and Analysis ... 25

2.4.1 Stage 1: Identifying the Research Question 26
2.4.2 Stage 2: Identifying Relevant Studies 26
2.4.3 Stage 3: Study Selection 29
2.4.4 Stage 4: Charting the Data 30
2.4.5 Stage 5: Collating, Summarising and Reporting the Results 32
2.5 Discussion 39
2.5.1 Characteristics Research on Preconception Care in LMUICs 39
2.5.2 Characteristics of Preconception Care Intervention in LMUICs 40
2.6 Research Gaps 42
2.7 Strengths and Limitations 43
2.8 Summary of Findings from Scoping Review 44
2.9 The Research Aims and Objectives 44
2.10 Chapter Conclusion 45
Chapter 3 Methodology and Research Methods 46
3.1 Introduction 46
3.2 Positionality Statement Related to Methodology and Research Process 46
3.3 Underlying Paradigm and Research Philosophy 48
3.4 Research Design 49
3.4.1 The Rationale for Research Design Chosen 49
3.4.2 Study Proposition 52
3.4.3 Sampling Strategy 53
3.4.4 The Participants and Recruitment 54
3.4.5 Data Collection Method 60
3.4.6 Transcribing and Translating Processes 67
3.4.7 Data Analysis Methods 68
3.5 Rigor of the Research and Ethical Issue 79
3.6 Summary Methodology and Research Methods Used 83
3.7 Chapter Conclusion 83
Chapter 4 Findings from Case One: Melati Puskesmas 84
4.1 Introduction 84
4.2 Research Setting: Melati Puskesmas 84
4.3 Characteristics of Participants 84
4.3.1 Overview of the Result of Recruitment of Participants from Service Users in Both Cases 85
4.3.2 Overview of the Result of Recruitment of Participants from Service Providers in Both Cases 86

4.3.3 Participant Characteristics of Service Users in Case One 86
4.3.4 Participant Characteristics of Service Providers in Case One 87
4.4 Themes from Case One: Melati Puskesmas 88
4.4.1 Themes from the Service User Participants 88
4.4.2 Themes from the Service Provider Participants 111
4.5 Documentary Analysis 125
4.6 Summary of Findings from Case One 126
4.7 Chapter Conclusion 127
Chapter 5 Findings from Case Two: Kenanga Puskesmas 128
5.1 Introduction 128
5.2 Research Setting: Kenanga Puskesmas 128
5.3 Characteristics of Participants 128
5.3.1 Participant Characteristics of Service Users in Case Two 129
5.3.2 Participants Characteristics of Service Provider in Case Two 130
5.4 Themes from Case Two: Kenanga Puskesmas 130
5.4.1 Themes from the Service User Participants 131
5.4.2 Themes from the Service Provider Participants 144
5.5 Document Analysis 153
5.6 Summary of Findings from Case Two 154
5.7 Chapter Conclusion 155
Chapter 6 Overall Synthesis of the Findings 156
6.1 Introduction 156
6.2 Process of Cross-case Synthesis 156
6.3 Phases of Cross-case Synthesis 157
6.4 Summary of Cross-synthesis 160
6.5 Chapter Conclusion 160
Chapter 7 Discussion 161
7.1 Introduction 161
7.2 Overview of the Study Aim, Research Questions, and Contribution to Knowledge 161
7.3 Interpretations of Findings 164
7.3.1 Management and Organisation of PPCC services 166
7.3.2 Provision and Access to PPCC services 171
7.3.3 Experience in receiving PPCC services 175
7.4 Strengths and Limitations 181

7.5 Recommendations 182
7.6 Reflection: Learning Experience on the PhD Journey 185
7.7 Dissemination of the Study 186
7.8 Final Conclusion 187
References 189
List of Appendices 206

List of Tables

Table 2.1 Search Strategy with MeSH Terms and Keywords 28
Table 2.2 Summary of the Included Studies..... 33
Table 2.3 The Research Questions and Objectives..... 45
Table 3.1 Study Propositions 53
Table 3.2 Inclusion Criteria of Participants 54
Table 4.1 Summary of Participants from Service users in Both Cases 86
Table 4.2 Summary of Participants from Service Providers in Both Cases 86
Table 4.3 Profile of the Service Users Participants 87
Table 4.4 Profile of the Service Provider Participants 88
Table 4.5 Themes and Sub-themes from the Service Users..... 88
Table 4.6 Themes and Sub-themes from the Service Providers..... 111
Table 5.1 Profile of the Service Users Participants 129
Table 5.2 Profile of the Service Provider Participants 130
Table 5.3 Themes and Sub-themes from the Service Users..... 131
Table 5.4 Themes and Sub-themes from the Service Providers..... 144

List of Figures

Figure 1.1 The Map of Indonesia..... 9
Figure 1.2 Geographic Situation and Population Density of Indonesia in 2022 9
Figure 1.3 Organisation of Health System in Indonesia 11
Figure 1.4 MMR by Province According to the Long Form Population Census 2020 14
Figure 5.5 A Comprehensive Diagram Illustrating the PPCC Service Workflow18
Figure 2.1 Study Selection Presented Using PRISMA Flow Diagram 30
Figure 3.1 Interview Data Management Process..... 62
Figure 3.2 Observation Data Management Process 65
Figure 3.3 Document Data Management Process..... 67
Figure 3.4 Stages of Analysis Process 70
Figure 3.5 Within Cases Analysis 71
Figure 3.6 Example of Sets of Categories 73
Figure 3.7 The Process of Moving from Codes to Themes 74
Figure 3.8 Stages of Content Analysis..... 76
Figure 4.1 The Hall Layout of the Melati Puskesmas 93
Figure 4.2 The Examination Room at Melati Puskesmas..... 95
Figure 5.1 The Examination Room at Kenanga Puskesmas..... 134
Figure 7.1 Overview of the Main Findings of Studies 1 and 2 163
Figure 7.2 “Quality of Care for Maternal and New-born Health” Framework 165

List of Appendices

Appendix 1: Search Strategy and Results 206

Appendix 2: Charting the Data 214

Appendix 3: Summary of Critical Appraisal of Included Studies 222

Appendix 4: Research Permission from Local Government 228

Appendix 5: Research Permit Statement Melati and Kenanga Puskesmas .. 229

Appendix 6: Research Permit Statement of the Two Islamic Religious Affair Offices 231

Appendix 7: Ethical Research Approval from the School of Healthcare Research Ethics Committee (SHREC) the University of Leeds 233

Appendix 8: Ethical Research Approval Ethics Committee of the Faculty of Medicine Universitas Muhammadiyah of Surakarta (UMS) Indonesia 235

Appendix 9: Example of Banner for Research Dissemination 236

Appendix 10.Example of Leaflets for Research Dissemination 237

Appendix 11: Statement Agreement to be Contacted Form 238

Appendix 12: Invitation Letter for Service Users 239

Appendix 13: Participant Information Sheet for Service Users 240

Appendix 14: Consent Form for Interview with the Couples 244

Appendix 15: Consent Form for Observation with the Couples 246

Appendix 16: Invitation Letter for Service Providers 248

Appendix 17: Participant Information Sheet (PIS) for the Service Providers 249

Appendix 18: Consent Form for Interview with the Service Providers 253

Appendix 19: Consent Form for Observation with the Service Providers..... 255

Appendix 20: Example of Interview Schedule 257

Appendix 21: Distress Protocol 267

Appendix 22: Protocol to Reduce Hawtorn Effects 268

Appendix 23: Observation Sheet 269

Appendix 24: Translation Confidential Agreement 270

Appendix 26. Summary of Findings of Two Cases 275

Appendix 27.Example of Selecting, Focusing, and Simplifying Process 279

Appendix 28.The Patterns Emerging from Cases One and Two 280

Appendix 29.Dissemination Done and Publication Plan 284

List of Abbreviations

AAFP	American Academy of Family Physicians
AC	Air Conditioning
ALT	Alanine Aminotransferase
ARR	Annual Rate of Reduction
Askeskin	*Asuransi Kesehatan Masyarakat Miskin* (Health Insurance for the Poor)
BOK	*Bantuan Operasional Kesehatan* (Health Operational Assistance)
BPJS Kesehatan	*Badan Penyelenggara Jaminan Sosial-BPJS Kesehatan* (the Social Security Organising Agency for Health)
BPS	*Badan Pusat Statistik* (Central Bureau of Statistics)
cART	Combination Antiretroviral Therapy
CASP	Critical Appraisal Skills Program
CEBM	Center for Evidence-Based Medicine
COVID-19	COronaVIrus Disease of 2019
CSA	Central and South Asia
DPA	Data Protection Act
EMAS	Expanding of the Maternal and Neonatal Survival
EPMM	Ending Preventable Maternal Mortality
ER	Emergency Room
FGD	Focus Group Discussion
FPHC	Free Pre-pregnancy Health Check
GDP	Gross Domestic Product
GNI	Gross National Income
Hb	Haemoglobin
HBsAg	Hepatitis B Surface Antigen
HBV	Hepatitis B Virus
HIV	Human Immunodeficiency Virus
HSV-2	Herpes Simplex Virus Type 2
IDR	Indonesian rupiah

IPP	International Practice Project
Jamkesmas	*Jaminan Kesehatan Masyarakat* (Community Health Insurance)
Jampersal	*Jaminan Persalinan* (Childbirth assurance)
JHPIEGO	Johns Hopkins Program for International Education in Gynecology and Obstetrics
JKN-KIS	*Jaminan Kesehatan Nasional-Kartu Indonesia Sehat* (the National Health Insurance-Healthy Indonesia Card)
JPEG	Joint Photographic Experts Group
JPS-BK	*Jaring Pengaman Social Bidang Kesehatan* (Social safety net in the health sector)
'Kelas Catin'	*Kelas Calon Pengantin* (Bride and Groom Class)
Kes Catin App	*'Kelas Calon Pengantin'* Application (Bride and Groom Class Application)
KUA	*Kantor Urusan Agama* (Religious Affair office)
LCD	Liquid Crystal Display
LMICs	Lower-middle Income Countries
LMIUCs	Lower-middle-upper Income Countries
MDGs	Millennium Development Goals
MeSH	Medical Subject Headings
MMAT	Mixed Methods Appraisal Tool
MMR	Maternal Mortality rate
MoH	Ministry of Health
MP4	MPEG-4 Part 14
MPS	Making Pregnancy Safer
NEJM	New England Journal of Medicine
OOP	Out-of-pocket
PBBS	Performance-Based Budgeting System
PBUH	Peace Be Upon Him
PCC	Preconception Care
PERDA	*Peraturan Daerah* (Regency Regional Regulation)
PHC	Public Health Centre
PICO	Patient/Population, Intervention, Comparison and Outcomes

PIS	Participant Information Sheet
PONEK	*Pelayanan Obstetri Neonatal Emergency Komprehensif* (Comprehensive Emergency Neonatal Obstetric Services)
PPCC	Premarital Preconception Care
PrEP	Pre-exposure Prophylaxis
PRISMA-ScR	Systematic Reviews and Meta-Analyses extension for Scoping Reviews
PT Askes	*Perseroan Terbatas Asuransi Kesehatan* (Health Insurance Limited Company)
Puskesmas	*Pusat Kesehatan Masyarakat* (Primary Health Centres)
QCA	Comparative Qualitative Analysis
RMNCH	Reproductive, Maternal, Neonatal and Child Health
SA	South of Asia
SDG	Sustainable Development Goal
SeA	Southeast Asia
SHREC	School of Healthcare Research Ethics Committee
SIKDA	*Sistem Informasi Kesehatan Daerah* (Regional Health Information System)
SIKNAS	*Sistem Informasi Kesehatan Nasional* (National Health Information System)
SIMPUS	Puskesmas information system
SOP	Standard Operating Procedures
SRQ	Self-Reporting Questionnaire
SSA	Sub-Saharan Africa
STIs	Sexually Transmitted Infections
TB	Tuberculosis
TT	Tetanus Toxoid
U.S.	United States
UHC	Universal Health Coverage
UMICs	Upper-Middle-Income Countries
UMS	Universitas Muhammadiyah Surakarta
UNISA	Universitas Aisyah
VCT	Voluntary Counselling and Testing

VDRL	Venereal Disease Research Laboratory Test
WHO	World Health Organization

Glossary of Terms

Terms	Definition
Preconception care (PCC)	The provision of biological, behavioural, and social health interventions to women and couples prior to conception with the goal of enhancing their state of health and minimising actions and environmental elements that can worsen maternal and child health outcomes (Williams, 2008; WHO, 2013).
Puskesmas	Primary Health Center hereinafter referred to Puskesmas is a health service facility carrying out public health efforts and first level individual health efforts, with prioritise promotive and preventive efforts working area (Law No. 43 in 2019 Concerning Puskesmas)
Premarital Preconception Care (PPCC)	Implementation of pre-pregnancy health services for couples before marriage (catin) is carried out individually (separately between the prospective catin men and women) to maintain client privacy which consists of two types of services, namely 'Kelas Catin' and premarital health check-ups (the Ministry of Health No. 21 in 2021).
'Kelas Catin'	Providing Communication, Information and Education and counselling for a group of couples before marriage for increase their knowledge, awareness and concern so that it can carry out reproductive functions and behaviour healthy and safe (the Ministry of Health No. 21 in 2021).
Premarital Health Check-up	Health services aimed at couples before marriage consisting of several health services combined into one package consisting of 1) health examination (health history taking, physical and mental examination, and laboratory examination); 2) vaccination; 3) nutritional supplements/iron supplements; 4) clinical medical services; 5) medical referral (the Ministry of Health No. 21 in 2021).

Chapter 1 Background and Context of Study

1.1 Introduction

This thesis is a qualitative comparative case study that explores the concept and nature of premarital preconception care in Indonesia. The purpose of this chapter is to introduce the underlying research and describe the study context to enable better comprehension of the research environment and focus. This chapter presents the first positionality statement, the background of the study, the key concepts being studied, the research context, the research problems, and the significance of the study. At the end of this chapter, a summary of the research background, an analysis of the study context, the key problem statements, and the overall aims of the study are provided.

1.2 Positionality Statement

Introduction

In qualitative research, the researcher makes decisions regarding data collection, analysis, and interpretation. As a result, researcher biases and experiences may influence both the research process and the methods employed. The process of reflecting on the researcher's biases, experiences, and position in relation to the research or participants is known as reflexivity (Ide and Beddoe, 2024). Reflexivity is a personal, ongoing process that involves multidimensional practices, where the researcher self-critiques, assesses, and evaluates how subjectivity and circumstances impact the research (Ide and Beddoe, 2024). The positionality statement, however, is the public outcome of this process (Olmos-Vega et al., 2023). According to Holmes (2020), positionality encompasses both ontological and epistemological assumptions. Therefore, to enhance credibility and trustworthiness, it is crucial for researchers to publicly acknowledge their views, values, and beliefs through a positionality statement, as these factors can influence research design, implementation (data collection and analysis), and outcomes. The positionality statements are presented in the boxes at the beginning of Chapter 1 and Chapter 3.

Positionality statement in relation to the research topic

In this PhD study, I am the principal investigator. Throughout my doctoral journey, I have come to realise that various aspects of my identity have influenced the topic I chose for this research. I have a background in nursing and extensive experience as a nurse

practitioner in a hospital setting. With a master's degree specialising in maternity nursing, I was eventually appointed as a lecturer at Universitas Muhammadiyah Surakarta (UMS) due to these qualifications. My concern regarding the high rates of maternal mortality and morbidity in Indonesia motivated me to explore women's and family health, with the intention of contributing to improvements in this area. As part of my role as a lecturer, I frequently supervise students at the Primary Health Centre, or Puskesmas, in Indonesia. This has given me a deep understanding of health services within this context, as well as experience interacting with healthcare professionals at the research sites. My observations of premarital preconception care (PPCC) services at the Puskesmas sparked my interest in investigating these services further. I sought to better understand their effectiveness, particularly in relation to policy, the role of religious organisations, the delivery system, and couples' experiences with the services. This curiosity has driven me to explore potential improvements in the PPCC services offered in these settings.

1.3 Background

The global trend in maternal mortality shows a reduction in the maternal mortality rate (MMR) from 2000 to 2020 by 34.3%, decreasing from 339 to 223 deaths per 100,000 live births (WHO, 2023). However, the average Annual Rate of Reduction (ARR) is only 2.1% per year, indicating stagnation in the decline in MMR over the past two decades (World Health Statistics, 2023). In 2020, 287,000 women died worldwide, with 800 deaths from preventable causes related to pregnancy and childbirth (WHO, 2024). It should be noted that the MMR and progress are unevenly distributed between regions. For instance, between 2000 and 2020, MMRs in Eastern European countries fell significantly from 38 to 11 deaths per 100,000 live births (WHO, 2024). In contrast, the MMRs in low and middle-income countries (LMICs), remain extremely high, with almost 95% of maternal deaths occurring in these regions (WHO, 2024). Within LMICs, Sub-Saharan Africa (SSA) (70%) and Central and South Asia (CSA) (16%) are the two regions identified as experiencing the highest number of maternal deaths (WHO et al., 2023). In these regions, there are 10 countries, including Indonesia, categorised by WHO as "fragile states" due to their heavy burden of preventable deaths among pregnant women, mothers and newborns (WHO, 2023). The MMR in the African region was reported at 531 deaths per 100,000 live births in 2020, with South Sudan recording the highest number at 1,223 deaths per 100,000 live births (Mutabingwa et al., 2023). Meanwhile, in Central Asia, the average MMR is 138 deaths per 100,000 live births, with Afghanistan having the highest number at 638 deaths per 100,000 live births. In

Southeast Asia, the MMR is 100 deaths per 100,000 live births (WHO et al., 2023). Unfortunately, the majority of deaths in LMICs are categorised as “preventable” (WHO, 2024). These preventable deaths are likely to continue occurring if new approaches are not implemented.

To accelerate the reduction in maternal mortality, new-born mortality, and stillbirth in LMICs, understanding the underlying factors that cause maternal death is essential for determining the best policies and strategies to overcome them. Several factors contribute to high maternal mortality rates, most of which can be modified and avoided, including those related to patients, health workers and the health system (Ekwuazi et al., 2023). In addition, socioeconomic and cultural factors are prominent in shaping health behaviour and practices in LMICs (Ekwuazi et al., 2023). The causes of maternal death are divided into direct and indirect causes. To achieve optimal results, addressing both causes is equally important. However, for decades, research has focused more on the direct causes of maternal death rather than direct and indirect causes (Filippi et al., 2018). Indirect causes account for 27% of maternal deaths and have the potential to continue increasing if no strategic steps are taken to address them (Hossain and Shaikh, 2022).

A comprehensive analysis of maternal deaths shows increasing death rates resulting from indirect causes such as diabetes, human immunodeficiency virus (HIV) infection, malaria, cardiovascular diseases, diabetes mellitus, and mental illness (Ekwuazi et al., 2023; WHO, 2024). Data shows that indirect causes of maternal death are more common in the SSA and CSA. SSA countries are known for a syndemic of HIV, Hepatitis B Virus (HBV), and tuberculosis (TB) due to the high incidence of these three diseases (Msomi et al., 2020). A syndemic is when two or more disease epidemics interact with each other, causing an increase in the size of each epidemic (Msomi et al., 2020). It is estimated that 67% of people in the SSA are living with HIV (Moyo-Chilufya et al., 2023). A systematic review of HIV prevalence among pregnant women in Nigeria shows that 7 out of every 100 pregnant women are suspected of being infected with HIV (Ozim et al., 2023). Two-thirds of countries in Africa suffer from hepatitis B with varying prevalence rates but above the endemic threshold of 8% with Chad as the highest country at 19% (Mandimba et al., 2023). A study in Southern Ethiopia reported that the prevalence of HBsAg sero-positive in pregnant women was 6.6% (Kassaw et al., 2022). Tuberculosis (TB) in the SSA accounted for 23% of global TB in 2021 (WHO, 2022). Research in four countries in Africa (South Africa, Tanzania, Mozambique, and Gambia) shows that most TB sufferers in women are those of reproductive age (25 to 35 years) with more than half of them infected with HIV (Korri et al., 2022). In Asia, TB also stands out in several countries such as India (28%), Indonesia (9.2%), China (7.4%), Pakistan (5.8%), and Bangladesh

(3.6%) of global TB in 2021 (WHO, 2022). Other diseases such as anaemia during pregnancy were found to be very high, such as in Nigeria, 61% of cases (Adeniran et al., 2019) and Indonesia, 44% of cases (The World Bank, 2019). In Pakistan, cardiac and hepatic diseases are reported as the largest indirect causes accounting for 32% of cases (Hossain and Shaikh, 2022). In addition, the findings of a systematic review conducted by Lassi et al. (2020) found that teenage pregnancy and malnutrition are two common challenges that are often faced in poor and developing countries. What is important to note is that most of these conditions are pre-existing maternal medical conditions or diseases that can further develop and impact negatively on pregnancy which can lead to poor maternal and neonatal outcomes, long term disabilities, and high burden of healthcare cost (Khekade et al., 2023). In this regard, more attention needs to be directed towards detecting, addressing, and minimising these indirect causes of maternal deaths. To do this, programs with high coverage of life-saving interventions combined with quality and equity across the continuum of services from preconception to the postnatal period are needed. Therefore, to achieve this goal, preconception care services must become an inseparable part of the health care continuum for mothers and children.

Preconception care (PCC) is a prevention strategy before conception that aims to improve maternal and child health outcomes (WHO, 2013). PCC has the potential to provide the most significant benefits, especially in LMIC countries where complications during pregnancy, childbirth and postpartum are the most common cause of maternal death, most of which are preventable and avoidable (Black et al., 2022). Preconception care is a key determinant of pregnancy success and the health of the next generation (Barker et al., 2018). Further research is needed to identify factors associated with favorable health outcomes and to ensure effective PCC intervention (Harper et al., 2023). However, little is known about the implementation of PCC intervention in LMICs.

1.4 Preconception Care (Definition and Concept)

1.4.1 Definition of Preconception Care

According to the World Health Organisation (WHO), Preconception care is the provision of biological, behavioural, and social health interventions to women and couples prior to conception, with the goal of enhancing their state of health and minimising actions and environmental elements that can worsen maternal and child health outcomes (WHO, 2013).

1.4.2 Strategic Role of Preconception Care

PCC interventions can improve the health of couples by helping them plan a pregnancy, thereby creating an ideal environment for conception and foetal growth. PCC allows couples to address potential risk factors and optimise the couple's health before pregnancy (Khekade et al., 2023). This is important because only a healthy couple will be able to provide a good environment for fertilisation, implantation and embryo development. This early stage of pregnancy is a critical time because various physiological processes, such as organ formation and foetal growth, occur in this period (Stephenson et al., 2018).

PCC can have positive short-term and long-term effects on the mother's health and the child's well-being throughout their life. It improves maternal and infant health through various interventions, including improving nutrition, screening and treating chronic medical conditions, providing vaccinations, promoting healthy lifestyles, and health counselling (Khekade et al., 2023). These interventions help optimise the couple's health and reduce the occurrence of complications enable for a better outcome for children (Khekade et al., 2023).

To fully benefit from PCC intervention, a dual approach targeting both women and men is considered the most effective strategy for improving a couple’s health before conception (WHO, 2013). However, in general, PCC intervention currently tends to be maternal-focused. Therefore, a PCC reform with a new direction to a couple-focused approach is essential to improve its effectiveness (Abed Alah, 2024).

1.4.3 Involving Couples in Preconception Care

1.4.3.1. Rationale for Involving Men

There are several important reasons underlying the need for men to be involved in PCC intervention. Firstly, both pregnancy and neonatal outcomes are influenced by the quality of semen produced by men, which is itself influenced by men's health behavior (Moss and Harris, 2015). Men's poor health can be caused by various things such as obesity, old age, and drug use as well as unhealthy lifestyles such as smoking, alcohol consumption, and poor diet (Fleming et al., 2018). Secondly, past health histories, such as past medical and surgical history, medications, and family history, can also influence men's current health (Frey et al., 2008). Additionally, research shows that men are responsible for 50% of infertility cases (Borght and Wyns, 2018). Lifestyle-related factors such as nicotine addiction, excessive exposure to electromagnetic radiation-emitting devices, and alcohol consumption, have been shown to negatively impact male fertility (Balawender and Orkisz, 2020). However, evidence shows that men’s knowledge about

the pivotal role of their health pre-pregnancy is low (Rabiei et al., 2023).

Based on the above discussion, there are some ideas regarding how PCC involving couples might provide different results compared to services that focus only on women. Firstly, PCC education and counselling can increase men's awareness of the impact of their partner's health before conception and on pregnancy and birth outcomes. This could potentially motivate men to positively encourage themselves and their partners to change their behaviour and lifestyle to manage risk factors for PCC (WHO, 2013). Secondly, counselling in fatherhood can foster a man's sense of responsibility and a desire to provide physical, mental and social support for women and their offspring (Ladur et al., 2021). Thirdly, men's involvement in PCC has the opportunity to improve reproductive justice for women by increasing shared responsibility between couples. This is because men who are well-informed and well-engaged in conceptual care will tend to have a good awareness of their role in providing support to their partners and are able to create more fairness in decision-making regarding reproductive health (Abed Alah, 2024).

1.4.3.2. Some Selected Countries in LMICs Involving Men in Preconception Care

The provision of PCC intervention involving couples is carried out inconsistently within LMICs. Countries that have implemented couples' services include India, China, and some countries in Africa. Below are three examples of PCC interventions conducted in some different countries (India, China, and African countries) involving couples**.**

India (Narendra et al., 2023)

PCC interventions are provided due to the high maternal mortality rate in rural areas in Karnataka where a strong cultural norm is held tightly. The PCC interventions are provided to address many indirectly preventable deaths such as anaemia, malnutrition, hypothyroidism, sexually transmitted diseases, diabetes, and hypertension. The PCC interventions are integrated with the National Reproductive Health Mission for adolescent, maternal and child health. This intervention targets newly married young women and their families.

China (Xu et al., 2022)

The PCC intervention called the National Free Preconception Health Examination has been implemented since 2010 by the Chinese Government. The high incidence of birth defects is a driving factor in providing PCC services targeting married couples planning to become pregnant.

Sub-Saharan African

PCC interventions in SSA vary between countries, with the most common interventions being to identify and treat HIV and provide counselling on the use of contraceptive methods (Ukoha et al., 2022). Only a few pay attention to preconception folic acid supplementation and chronic diseases (Ukoha et al., 2022). There are no definitive sources explaining the involvement of men in PCC interventions, but some countries report involving couples in PCC services, such as South Africa, Kenya, and Zambia.

1.4.3.3. Evidence of Preconception Care Intervention

The evidence related to preconception care (PCC) interventions typically focuses on their effectiveness in improving couples' health before pregnancy, selected behaviours during pregnancy, and some birth outcomes. For instance, a systematic review reported in *The Lancet* by Barker et al. (2018) highlighted that, while preconception interventions are perceived as valuable for enhancing maternal nutritional status, drawing definitive conclusions about the efficacy of such interventions in improving maternal and newborn outcomes on a broad scale is difficult. This is due to the lack of evidence from robust, context-relevant research trials. In contrast, a synthesis of evidence from primary healthcare settings in the UK found that more than a fifth of women benefited from preconception interventions, particularly in addressing risk behaviours such as smoking, obesity, depression, and anxiety (Schoenaker et al., 2024). However, this review found limited evidence examining the connection between PCC interventions and pregnancy or birth outcomes. Of the 42 studies reviewed, only 5 explored the association between preconception indicators (such as contraceptive prescriptions, sexually transmitted diseases, and polycystic ovary syndrome) and pregnancy or birth outcomes, but the specific birth outcomes measured were not reported.

In the context of LMICs, a systematic review assessing the effectiveness of pre- and periconceptional interventions in improving maternal nutrition and birth outcomes found a significant association between preconception educational interventions and delayed first pregnancies, as well as optimal spacing between pregnancies (RR = 1.71, 95% CI = 1.42-2.05; two studies, n = 911; I2 = 0%) and (RR = 2.25, 95% CI = 1.29–3.93; one study, n = 338), respectively. Regarding nutrition, routine periconceptional folic acid

supplementation since adolescence was shown to reduce the incidence of neural tube defects (RR = 0.53; 95% CI = 0.41-0.77; two studies, n = 248,056; I2 = 0%). Additionally, folic acid-iron supplementation decreased the incidence of anemia (RR = 0.66, 95% CI = 0.53-0.81; six studies; n = 3430, I2 = 88%) (Lassi et al., 2020). A quasi-experimental study conducted in Iran found that preconception intervention was also associated with a reduced risk of preterm birth (OR = 0.298; 95% Confidence Interval [CI] = 0.120-0.743; P = 0.009), low birth weight (OR = 0.406; 95% CI = 0.169-0.971; P = 0.043), maternal complications (OR = 0.399; 95% CI = 0.241-0.663; P < 0.001), and neonatal complications (OR = 0.460; 95% CI = 0.275-0.771; P = 0.003) (Jourabchi et al., 2019). However, these findings should be interpreted with caution due to the limited sample size, which may affect the robustness of the evidence.

There is evidence highlighting the benefits of PCC interventions for both women and their male partners. For example, a study in China by Du et al. (2021), which examined couples who received preconception care, found that women who used preconception care were more likely to take folic acid supplements before pregnancy (Adjusted Odds Ratio (OR) 3.27, 95% Confidence Interval (CI) 2.45–4.36, P <0.0001). Additionally, male partners who received PCC counselling were more inclined to reduce smoking and alcohol consumption.

This evidence reporting the nature and benefit of men's role in PCC intervention and research focusing on couples and exploring their experiences in receiving PCC intervention in LMICs is the focus of the scoping review in Chapter 2.

1.5 Research Context: Indonesia

1.5.1 Demographic Data

Based on BPS-Statistics Indonesia (2023), Indonesia is located near the equator, connecting the continents of Asia and Australia (see Figure 1.1 Map of Indonesia). It is an archipelagic country with more than 17,000 islands spread across an area of 1,892,410.09 km^2. Indonesia's territory encompasses five islands: Kalimantan, Sumatra, Papua, Sulawesi, and Java/Madura. The country is inhabited by 275,454,778 people consisting of 139,024,803 male residents and 136,429,975 female residents, making Indonesia the fourth most populous country in the world. Indonesia's population is unevenly distributed, with the largest concentration on the island of Java (56.1%), while the islands of Maluku and Papua have the smallest populations, at 1.2% and 2.0% respectively. Indonesia's location on the world map can be seen in Figure 1.1.

Indonesia's population consists of hundreds of ethnic groups speaking over 724 distinct languages and dialects, with Indonesian as the official language. The majority of the population practices Islam (87%) (BPS-Statistics Indonesia, 2023). The capital city is Jakarta, and administratively, Indonesia consists of 37 provinces (BPS-Statistics Indonesia, 2023). A map of the Indonesian archipelago can be seen in Figure 1.2.

Figure 1.1 The Map of Indonesia

Source: Statistical Yearbook of Indonesia 2023

Figure 1.2 Geographic Situation and Population Density of Indonesia in 2022

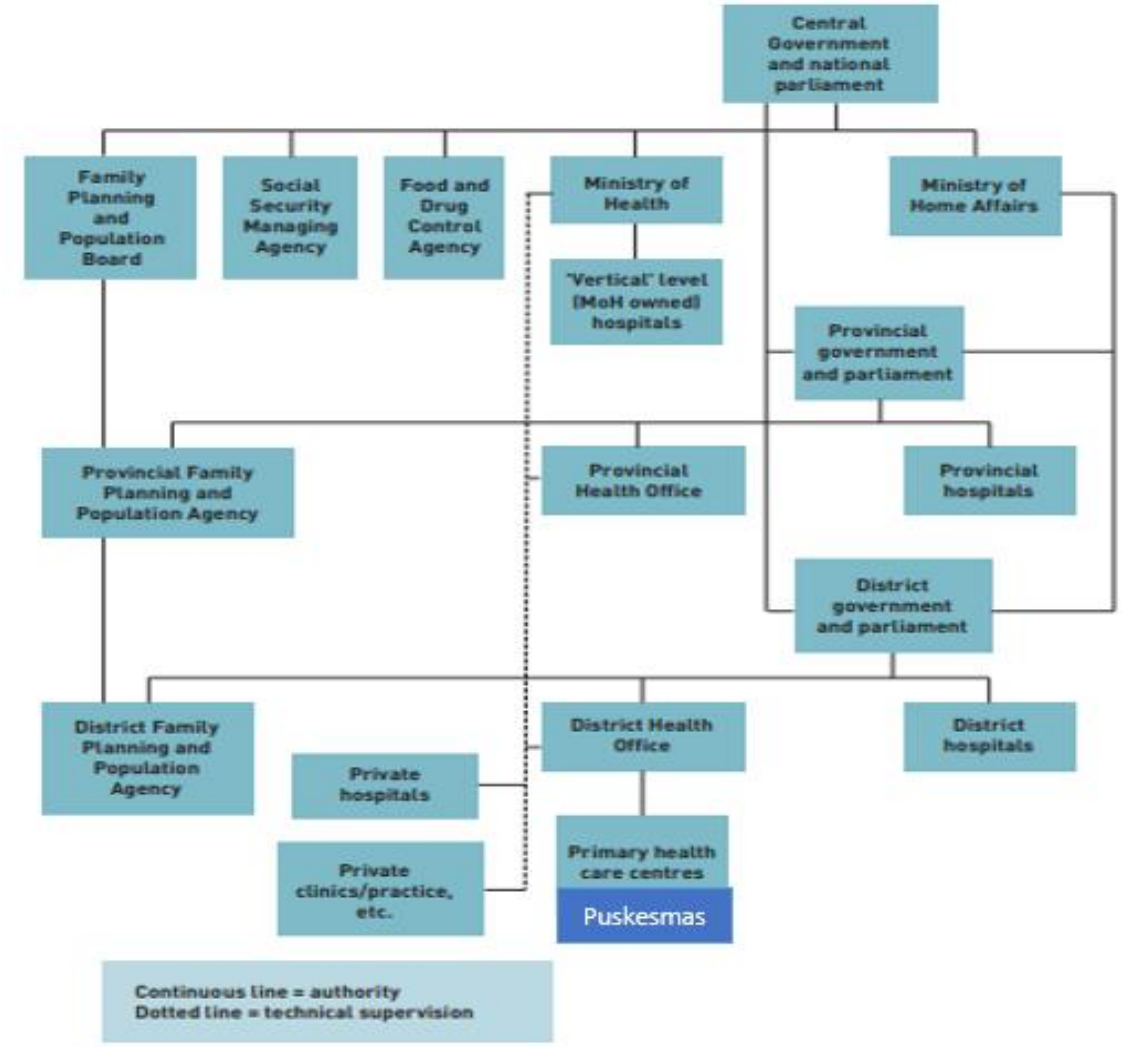
Source: Statistical Yearbook of Indonesia 2023

1.5.2 Overview of the Healthcare System in Indonesia

The health service system in Indonesia currently uses the principle of decentralisation. Decentralisation is defined as the transfer of power from the central government to regional governments (provincial and district/city levels) for regulating and managing government responsibilities (Law No.32/2004). According to these statutory regulations, the central government through the Ministry of Health delegates authority to provincial and district governments under the Ministry of Home Affairs to plan and manage health services in their respective regions (Indonesian Central Government, 2004). The central Ministry of Health retains direct responsibility for some specialist hospitals to ensure the availability of resources, including personnel, and also plays a leading role in supervising social insurance schemes. Regional government consists of provincial and district/city governments. Each province has several districts/cities and features regional general hospitals providing health services through the provincial health office. The provincial Health Service plays a role in coordinating health issues at the provincial/regional level and across districts. This agency primarily oversees training efforts, coordinates and supervises provincial hospitals, and is responsible for the allocation of limited resources. Meanwhile, at the district level, they bear significant responsibility for providing health services and allocating resources. District level hospitals are responsible for primary and curative services.

In addition, the Ministry of Health organises health services provided through primary health centres (Puskesmas) and its networks. *The definition of Puskesmas based on the Regulation of the Minister of Health of the Republic of Indonesia No. 43 of 2019 is a first-level health service facility that focuses on public and individual health efforts with an emphasis on promotive and preventive measures within its working area (Indonesian Central Government, 2019)*. Each sub-district should have one health centre, but under certain conditions, there can be more than one due to consideration of service needs, population and accessibility. In 2022, the number of Puskesmas was 10,374, with a ratio of Puskesmas to sub-districts of 1:4. While this ratio has met the national target, the distribution of Puskesmas is not evenly distributed throughout the country (Mahendradhata et al., 2017). An overview of health service organisations in Indonesia can be seen in Figure 1.3.

Figure 1.3 Organisation of Health System in Indonesia



Source: The Republic of Indonesia Health System Review 2023

1.5.2.1. Organisation of Health System

The health service system in Indonesia cannot be separated from the important role of the private sector. For government-owned health services, based on Government Regulation No. 38 of 2007, there are three main government functions in the health sector: legislation, financing and service delivery, whose duties and responsibilities are divided between the central, provincial and district/city government levels (Indonesian Central Government, 2007). The government also provides opportunities for the private sector to invest in the health sector leading to an increasing number of for-profit private providers, including hospitals, doctor-run clinics, midwifery practices, private practices, clinical laboratories and pharmacies. The private sector is regulated through accreditation, licensing and registration by the government at both central and regional levels (Mahendradhata et al., 2017).

Apart from the Ministry of Health, there are several other ministries and central government institutions involved in the health sector, including the Ministry of Home Affairs, the Social Security Implementing Agency, and the National Population and Family Planning Agency.

1.5.2.2. Health Financing

There has been dynamic reform in health financing in Indonesia over the last two decades. Before 2009, Indonesia's main source of health expenditure was out-of-pocket (OOP) payments (48%), which is thought to have resulted in a significant gap between the rich and the poor (Sutarsa, 2023). In response, a mandatory health spending system was implemented by the Indonesian government in 2009. This system effectively reduced OOP spending from 45.2% in 2000 to 31.8% in 2020 and improved maternal and child health outcomes (Sutarsa, 2023). In addition, it positively impacted the availability and access to essential health services, as evidenced by the significant increase in the number of Puskesmas from 8,234 in 2007 to 10,205 in 2020 (Sutarsa, 2023). Although significant progress has been made, further efforts are still needed to achieve fairness in health financing, especially for poor and marginalised groups.

The health service financing in Indonesia is currently regulated by Health Law No.17 of 2023. To increase the efficiency of health spending, this law implements a performance-based budgeting system (PBBS) (Indonesian Central Governemnt, 2023). The PBBS aims to enhance the efficiency of health spending through cash allocation to achieve specific goals by prioritising public health interventions, with an emphasis on promotive and preventive efforts to reduce costs.

As income from health costs increases, funds allocated for health insurance also increase, to achieve universal coverage. The Indonesian government first introduced a health card program intended particularly for the poor in 1998, known as the Social Safety Net for Health (JPS-BK), which was implemented until 2001 (Mahendradhata et al., 2017). Then in 2004, JPS-BK was expanded into social insurance for the poor using a reimbursement system for health costs, and the program was renamed "*Asuransi Kesehatan Masyarakat Miskin*" (Askeskin), managed by PT Askes (Sparrow et al., 2013). Although this program applied to both public and private hospitals, only a few hospitals accepted Askeskin insurance (Sparrow et al., 2013). This prompted the government to transform Askeskin into a "*Jaminan Kesehatan Masyarakat*" (Jamkesmas) in 2008 (Ministry of State Secretariat of the RI, 2015). This program was followed by a program called "*Jaminan Persalinan*" (Jampersal), launched by the Ministry of Health, which covered the fees for prenatal, childbirth, and postnatal consultations (Ministry of State Secretariat of the RI, 2015). The latest reform in the health insurance scheme is the

issuance of Law No. 24 of 2011, which transformed the entire previous system into a "*Badan Penyelenggara Jaminan Sosial*" (BPJS), which is in effect today (Mahendradhata et al., 2017). These developments in the health insurance sector have succeeded in increasing health insurance coverage from only around 26% in 2007 to 95.77% (267 million people) of the national population at the end of 2023 (Sutarsa, 2023), making BPJS the insurance organising body with the largest participants in the world (The Jakarta Post, 2024).

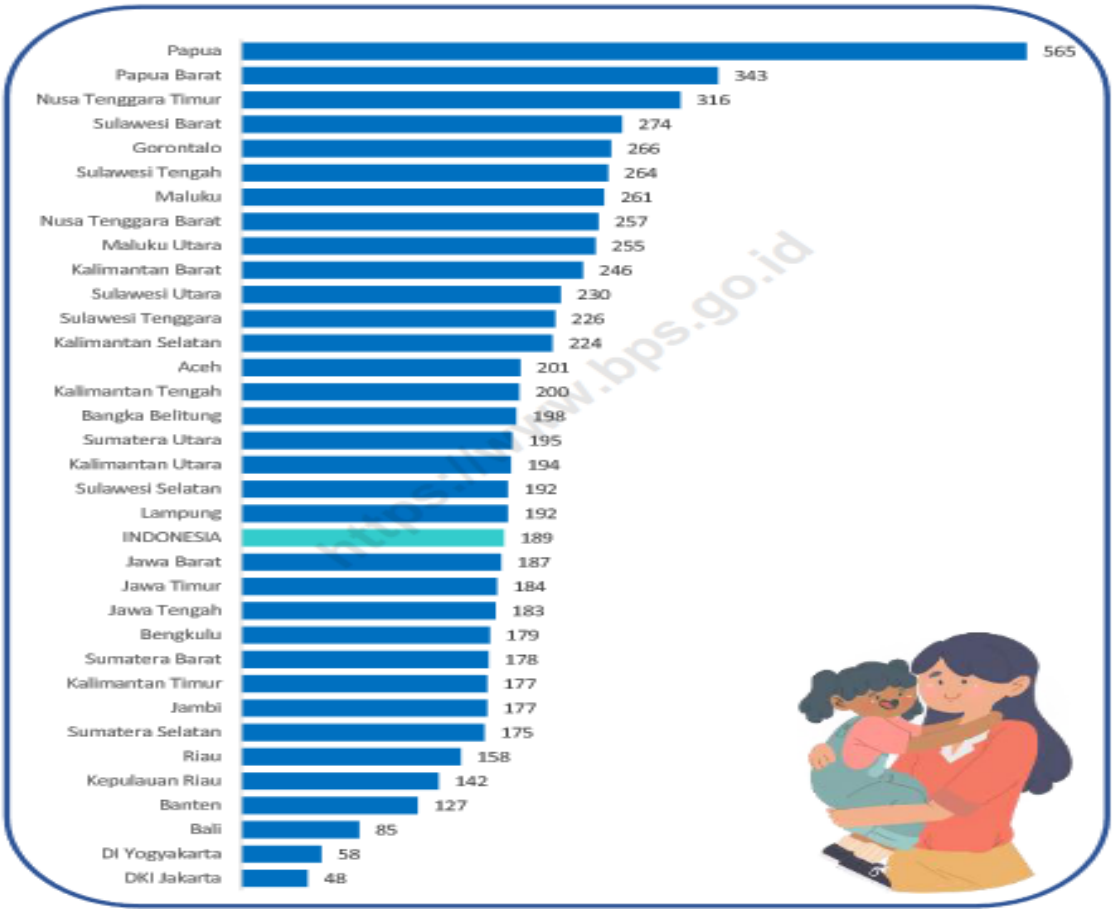
1.5.3 Current Maternal Health

Indonesia, following the global trend, has made significant progress in reducing the MMR rate from 305 deaths per 100,000 live births in 2015 to 189 deaths per 100,000 live births in 2020 (Directorate of Population and Labor Statistics, 2020). This number is close to the target of the 2024 National Medium-Term Development Plan, however, compared to other countries in Southeast Asia, Indonesia still has the third highest MMR (Directorate of Population and Labor Statistics, 2020). The latest data shows a decrease in the number of maternal mortality from 7,389 in 2021 to 3,572 in 2022 (Directorate of People's Welfare Statistics, 2023).

1.5.3.1. Distribution of MMR

Even though the national MMR has decreased significantly, there is a striking gap between islands and provinces. In general, the islands in Indonesia are grouped into five major islands (Directorate of Population and Labor Statistics, 2020). Java-Bali, the most populous islands, have the lowest MMR (166 deaths per 100,000 live births), followed respectively by the islands of Sumatra (183), Kalimantan (216), Sulawesi (228), and finally Nusa Tenggara, Maluku and Papua with the highest MMR (350) (Naviandi et al., 2023). The disparity becomes more evident when examining MMR by province; DKI Jakarta has the lowest MMR (48 deaths per 100,000 live births) while Papua has the highest (565 deaths per 100,000 live births) (Naviandi et al., 2023). This inequality in MMR reflects the unequal ability between regions to overcome maternal and child health problems. The distribution of MMR by province in 2020 is illustrated in Figure 1.4.

Figure 1.4 MMR by Province According to the Long Form Population Census 2020



Source: The Long Form Population Census 2020

1.5.3.2. Characteristics of the Causes of Maternal Death in Indonesia

In 2022, data shows that the causes of maternal death are dominated by indirect causes and other causes at 56%, while the remaining 44% are due to direct causes (Directorate of People's Welfare Statistics, 2023). Indirect causes, originating from maternal factors, include heart disease (6.49%), infection (4.90%), COVID-19 (2.04%); and others (42.1%) (Directorate of People's Welfare Statistics, 2023). In addition, the data shows that many pregnant women were diagnosed with sexually transmitted diseases such as HIV (0.25%), hepatitis B (1.6%), and syphilis (0.46%) (Directorate of People's Welfare Statistics, 2023). Other causes are related to the maternal healthcare system, including poor quality of care, inadequate implementation of standard operating procedures, inadequate risk management, poor referral system, and lack of coordination between primary healthcare and hospitals (Mahmood et al., 2018). In addition, socio-economic and cultural factors also play a role, including 1) vulnerable groups: low economic status, people living in rural areas, teenagers and unmarried women, and 2) cultural barriers: perceptions regarding pregnancy, childbirth, and death; perceptions regarding family planning; practices related to pregnancy and childbirth; birth attendant; gender inequality,

and perceptions regarding the performance of midwives and health services (Takaeb, 2020). Meanwhile, direct causes include hypertension in pregnancy (22%), haemorrhage (21%), circulatory system disorders (0.76%), and ectopic pregnancy (0.53%) (Directorate of People's Welfare Statistics, 2023). The high number of maternal deaths caused by indirect causes and other causes indicates that although the causes of death appear complex, the majority of deaths were preventable, avoidable, and modifiable.

Therefore, assessment, detection, education and treatment before conception are important issues that need to be prioritised. The PCC programme is a prevention strategy that, if implemented effectively at the national level, could improve the health of women and men before pregnancy, thereby improving pregnancy and birth outcomes in Indonesia. However, compared to other maternal health services such as services for pregnant women, maternity, postnatal, neonatal and family planning, the PCC services are currently not consistently available throughout Indonesia.

1.5.4 Government Regulation Related to Maternal and Child Health Services

1.5.4.1. Effort to Reduce Maternal Morbidity

The reduction in maternal mortality in Indonesia is a result of the government's focus and policies delivered through various national strategic programmes. Since the WHO launched the Safe Motherhood Initiative in 1987, the Indonesian Government has implemented development policies to improve maternal and child health through the Making Pregnancy Safer (MPS) strategy. This programme aims to ensure that mothers are healthy during pregnancy and safe during childbirth by providing the care they need (Manik et al., 2021).

The government, through the Decree of the Ministery of Health No. 1051/Menkes/SK/IX/2008, established Implementation Guidelines for the 24-hour PONEK in hospitals. The 24-hour PONEK Service Programme was designed in response to the high number of maternal deaths due to direct causes, especially those that result in emergencies. This programme includes stabilisation and treatment in the Emergency Room (ER), appropriate emergency surgical procedures such as laparotomy and caesarean section, intensive care for mothers and babies, and high-risk antenatal care services (Ministry of Health Republic Indonesia, 2008).

The next program, called the Expanding of the Maternal and Neonatal Survival (EMAS) programme, was launched by the government in collaboration with JHPIEGO in 2011

and lasted until 2017. This program aimed to improve the quality of emergency obstetric and new-born services, make emergency referrals more effective, and increase accountability through the involvement of local government and society (Hyre et al., 2019).

All of the national strategic efforts above have primarily focused on the direct causes of maternal death. The high death rate caused by indirect and other causes prompted the government to issue a new policy regarding the pre-pregnancy period, including preconception services.

1.5.4.2. National Document

At the time of data collection, two national official regulations regarding PPCC were in effect. The Ministry of Health Regulation No. 97, published in 2014, was in the process of being replaced by Ministry of Health Regulation No. 21, 2021. Both regulations share the same purpose: to provide preconception care for three groups—adolescents, couples about to marry, and married couples. A common objective of both regulations is to ensure that women reach optimal health before pregnancy.

Definition of the terminology used

For clarity, as there is no specific term for the service being studied, the researcher coined the term ‘premarital preconception care services’ (PPCC) for the purposes of this thesis. The term ‘premarital’ was selected to emphasise that the service is provided to couples prior to marriage, as part of the process necessary for marriage in Indonesia.

The official regulatory documents from the Ministry of Health (2014 and 2021) explain that preconception care is a component of pre-pregnancy services, targeting three groups: adolescents, couples about to marry, and married couples of childbearing age. It is important to note that PPCC services comprise two types: "Kelas Catin" and "premarital health check-up." "Kelas Catin" refers to services that provide communication, information, education, and counselling, while the "premarital health check-up" includes several bundled services: 1) health examinations (history taking, physical and mental assessments, and supporting/laboratory examinations); 2) immunisations; 3) nutritional/iron supplements; 4) clinical medical services; and 5) other health services, such as medical referrals.

The Ministry of Health's regulatory documents outline the main points for implementing PPCC services, such as the desired outcomes—namely, helping mothers achieve optimal health before becoming pregnant. These documents also specify the types of PPCC services (for groups, referred to as 'Kelas Catin,' and for individuals/couples), PPCC intervention packages, service provider institutions, funding, management,

monitoring, and evaluation. Detailed instructions regarding the implementation of PPCC at the service provider level are provided in a guidebook issued separately by the Ministry of Health.

The Ministry of Health has issued a guidebook for PPCC implementation titled *'Guidelines for Health Services Before Pregnancy.'* This new guidebook provides technical instructions for delivering health services during the pre-pregnancy period. Additionally, it introduces two significant elements: a clear recognition of the important role of men in reproductive health and the need to involve couples, as well as the inclusion of early detection of mental health problems using the recommended assessment tool, the Self Reporting Questionnaire (SRQ). The guidebook offers a detailed explanation of service objectives, expected outcomes, target recipients, roles and functions of central and regional authorities and Puskesmas, service settings, qualified health professionals, required infrastructure, service delivery processes, monitoring and evaluation procedures, and examples of documents such as health certificates. Regarding service provision locations, the guidebook specifies that premarital health check-up services must be conducted at the Puskesmas. However, 'Kelas Catin' services can also be provided at Puskesmas, religious affairs offices, or other places of worship such as churches, Hindu temples (parisadas), or Buddhist monasteries (viharas).

The guidebook also describes the close and dynamic collaboration between the Puskesmas and the Islamic Religious Affairs Office, as PPCC services are part of the marriage application process. Based on this guidebook, couples who are getting married are required to undergo PPCC services and are issued a health certificate by the Puskesmas. The health certificate is a mandatory document for registering to marry at the Islamic Religious Affairs Office for Muslims or at Ducapil (Population and Civil Defense Service Office) for non-Muslims. An overarching diagram illustrating the flow of PPCC services, taken from the guidebook, is shown in Figure 1.5.

Figure 5.5 A Comprehensive Diagram Illustrating the PPCC Service Workflow

Source: Guidelines for Health Services Before Pregnancy 2017

Regional Government Document

The regional government determines the tariffs and fees paid by service users for PPCC services at the Puskesmas. According to Regent Makmur Decree Number 55 of 2020 on Tariffs for Health Services at Puskesmas, the total cost is approximately IDR 148,000.00 (appoximately £7.5) per person. This amount is equivalent to around 7.4% of the Makmur Regency Regional Minimum Wage in 2022, which must be borne by the service users themselves.

1.5.5 Premarital Preconception Care (PPCC)

1.5.5.1 Socio-cultural and Religious Contexts

Historically, the PPCC services were developed by the Ministry of Health, taking into account Indonesian marriage laws. These laws include (*President of the republic of Indonesia, law no. 14 of 2009 concerning marriage*); *President of the republic of Indonesia, law no. 7 of 1974 concerning marriage* 2023) (Amendment) regarding the regulation of marriage. The law prescribes that the relationship between a man and a woman must be legalised in a ‘marriage relationship’. It states that the minimum age for a couple to marry is 21 years. It should be noted that in the socio-cultural context in Indonesia, having sexual relations before marriage is unacceptable because it violates religious and social norms. Those who do so face social and religious consequences (Arnez and Nisa, 2024).

PPCC services are provided to couples prior to marriage because, within the Indonesian context, it is common for couples to have children soon after marrying. In local culture,

children are considered essential, as they are believed to bring blessings to family life (Daulay et al., 2023). In addition, the utilisation of maternal health services in Indonesia, including pre-pregnancy services, remains suboptimal, largely due to a low prevalence of health consultation practices (Aryastami and Mubasyiroh, 2023). Given these considerations, mandating couples to access PPCC services before marriage is regarded as the most effective approach to ensure they receive essential preconception care. Currently, PPCC is the only preconception service available in Indonesia. However, it is limited to couples marrying for the first time, women remarrying, or those preparing for their first pregnancy. Preconception services for women between pregnancies are not yet available. Consequently, married women planning subsequent pregnancies are unable to access these services due to the unavailability of preconception services between pregnancies.

1.5.5.2 Current PPCC Models

Even though it was launched by the government a decade ago, the PPCC service is still not well-established and the availability of PCC services throughout Indonesia depends on the policies of each local government due to the decentralised system, and currently, most PCC services are still limited to the Java Islands. There are no local or national reports regarding the progress and outcomes of this initiative. In the absence of data on PPCC services, it is necessary to conduct research to evaluate the implementation of the intervention. The uniqueness of this PhD study lies in its connection with local socio-cultural and religious factors. Prior to any intervention study, the researcher is interested in conducting a study to illuminate the complex phenomenon of PPCC in a real context.

1.6 The Research Problem

This background chapter has highlighted the high maternal mortality rate in LMICs due to indirect causes generally related to the condition of the couple before pregnancy, indicating the need for PCC interventions to be consistently integrated into maternal health services. Research to date has provided an initial understanding of how PCC emerged in a range of settings, the pivotal role of couple involvement, and the need to refocus from women only to both male and female couples, particularly in a patriarchal context where MMR targets need expediting. Studies in the research context show that the maternal mortality rate in Indonesia is still relatively high, with the majority of deaths caused by indirect and other factors. In addition, there is limited evidence about the effectiveness and acceptability of PPCC and significant variation in the implementation of PCC services across Indonesia. In this context, PPCC interventions can potentially

improve maternal health and birth outcomes if implemented effectively at the national level. However, PPCC services are currently not well-established, with services not widely available and a lack of supporting evidence.

Considering the lack of evidence regarding the implementation of PPCC services in Indonesia, this PhD study seeks to understand in-depth the complex phenomenon of PPCC services in Indonesia from the perspective of service users and service providers. At the service user level, exploring their experiences in receiving PPCC services would be useful to understand how they perceive, react to, and respond to PPCC services, as well as their perceived benefits. Meanwhile, exploration at the service provider level is important to understand the context, management and delivery of services, as well as the influencing factors, facilitators and barriers faced by key PPCC practitioners. With these questions in mind, a literature review (see Chapter 2) is necessary to gain additional insight into the current model of PCC intervention, research methodology used, and the gaps in the current evidence, that could be used to refine the main research questions for this study (see Chapter 3).

This exploration of the complexity of the PPCC service programme will be useful for gaining an in-depth understanding of the "reality" of the service users' experiences in receiving PPCC services, as well as the management, provision, and access to PPCC services in Indonesia. Therefore, this PhD study will consider the natural context in which the PPCC phenomenon occurs.

1.7 The Research Aims/Significance of the Study

This PhD study aims to explore the concept and nature of PPCC services in Indonesia. This study will specifically explore 1) service users' experiences in receiving PPCC services (perception, response, behaviour, and benefits obtained); 2) management and organisation of PPCC services (context, background, management, and influencing factors); 3) provision of the services (setting, service delivery, model, and influencing factors); and 4) access to PPCC services (facilitators and barriers). Exploring these aspects will be key to providing robust and in-depth qualitative evidence that can be used to understand the underlying processes. The data collected and analysed will inform practice and provide a foundation for further research to design targeted interventions and inform future practice and policy. The findings of this PhD study will provide valuable new knowledge and insight into PPCC services, helping to determine the acceptability, accessibility, and implementation of PPCC in Indonesia.

1.8 Summary of Background and Context of Study

Key Summary:
✓ PCC has the potential as an effective approach to improve couples pre-pregnancy health. However, there is little evidence available regarding PCC implementation in LMICs. ✓ Research suggests that current PCC intervention tend to focus more on women than couples, hence the benefits of couple involvement have not been adequately examined. ✓ Premarital preconception care services (PPCC) are the only preconception services in Indonesia that have the potential to improve the health of couples before pregnancy. However, their implementation is still inconsistent and not widely available, and there is still little knowledge regarding their implementation in Indonesia. ✓ This PhD study intends to investigate the concept and nature of PPCC services in Indonesia. ✓ A literature review is needed to broaden researchers' insight into current PCC models involving couples in LMUICs regarding research characteristics, models of PCC intervention, and research gaps to help refine research questions and inform appropriate methods that will be used for this PhD study.

1.9 Structure of Thesis

A brief summary of the contents of each chapter is provided below to orient readers about the entire thesis and make it easier to find desired information.

Chapter 1: Background and Context of the Study

This chapter contains the research background on the topic being studied and the initial research gaps in the study context, which leads to the identification of the broad research problem and the uniqueness of conducting this research.

Chapter 2: Scoping Review

This chapter explores the evidence from the existing literature on models of PCC intervention in lower-middle-upper income countries (LMUICs). A scoping review is used to obtain discourse about the various models of PCC intervention, their characteristics including the research methods used, and the research gaps. The findings from the scoping review are used as a basis for understanding models and characteristics of PCC

in LMUICs, developing research methods, and refining the research questions and objectives.

Chapter 3: Methodology and Research Methods

This chapter explains the underlying philosophical assumptions and describes the specific research design used (qualitative comparative case study design, recruitment process, data collection method, and analysis) along with their justification. Ethical considerations of the study design are also discussed.

Chapter 4: Findings of Case One: Melati Puskesmas

This chapter describes the findings of the thematic analysis from interviews and observational data in case one. These are presented as emerging themes from the service users and the service providers. According to the characteristics of the collected document data, manifest content analysis is used to analyse the documents. The key findings from the documentary analysis are synthesised with the key findings from the synthesis of cases (interviews and observations). A summary of the key messages from the findings of case one is presented at the end of this chapter.

Chapter 5: Findings of Case Two: Kenanga Puskesmas

This chapter describes the findings of the thematic analysis from interviews and observational data in case two. These are presented as emerging themes from the service users and the service providers. According to the characteristics of the collected document data, manifest content analysis is used to analyse the documents. The key findings from the documentary analysis are synthesised with the key findings from the synthesis of cases (interviews and observations). A summary of the key messages from the findings of case two is also provided.

Chapter 6: Synthesis of All of the Findings

This chapter reports the process and findings of the cross-case synthesis from interviews, observational data, and documentary analysis from two cases to produce new knowledge. Narrative synthesis is used as a specific technique for cross-case synthesis. The integrated findings from cross-case synthesis are discussed in Chapter 7.

Chapter 7: Discussion

This chapter provides an overview of the aim of the research and research questions, discusses the overarching main findings, interprets the findings, relates them to existing theories, and highlights their implications with cautious consideration of the limitations of this study.

1.10 Chapter Conclusion

This PhD study could offer important, unique, and new knowledge that could be beneficial to PPCC service providers and users, as well as to policymakers, which could help assess the acceptability, accessibility, effectiveness, and implementation of PPCC in Indonesia. The next chapter reports the results of the scoping review.

Chapter 2 Scoping Review

2.1 Introduction

Chapter 1 has established the research background, presented the relevant aspects of the research context, and identified potential research problems and questions. This chapter aims to examine the existing literature on preconception care (PCC), with a particular focus on models involving couples in lower-middle-upper income countries (LMUICs). The chosen methodology for this investigation is a scoping review. The rationale for selecting a scoping review approach is detailed at the outset of this chapter. The analysis follows the methodological framework proposed by Arksey and O'Malley (2005) and recommendation for enhancing methodology by Levac et al. (2010). The conclusion and summary of this chapter are presented at the end.

2.2 Rationale for Selecting the Scoping Review

To generate valid and valuable evidence synthesis, a rigorous and systematic analytical approach is essential (Pollock et al., 2021). Consequently, systematic reviews and scoping reviews were the two primary methods considered. The following analysis explores the factors influencing the choice of literature review methodology.

Although both systematic reviews and scoping reviews employ a rigorous and structured systematic approach, they serve distinctly different purposes (Peters et al., 2020). Systematic reviews are designed for well-defined and specific research questions (Arksey and O'Malley, 2005; Pollock et al., 2021). This method is particularly suitable for generating evidence to guide decisions on clinical practices, care delivery, or policy development regarding the appropriateness or effectiveness of a specific treatment or practice, or for investigating conflicting results (Munn et al., 2018). In contrast, a scoping review is more appropriate when the research question addresses a broader topic where various research designs may be relevant (Arksey and O'Malley, 2005; Pollock et al., 2021). Scoping reviews are better suited for identifying and mapping certain characteristics within studies, and for reporting and discussing those characteristics (Peters et al., 2021; Pollock et al., 2021). Moreover, systematic reviews differ from scoping reviews in terms of the obligation to carry out quality assessments and risk of bias, where these two things are not always carried out in scoping reviews (Arksey and O'Malley, 2005; Brien et al., 2010).

Based on the analysis above, a scoping review was deemed a more appropriate method

for this PhD study than a systematic review. The scoping review was selected because the objective of this review is to identify the characteristics of the included studies, map main concepts, and identify research gaps. This choice was driven by the existing knowledge gap regarding the characteristics of PCC service models in LMUICs. As discussed in Chapter 1, there has been minimal research conducted in Indonesia concerning PCC service models. Therefore, it is crucial to understand the current PCC service models involving couples in LMUICs that are comparable to Indonesia in terms of contextual background and demographics. Investigating various emerging models of PCC is vital to gaining insights into their benefits and the experiences of those who utilise them, which can contribute to evidence and the dissemination of good practice (Public Health England, 2018). A scoping review is a form of knowledge synthesis designed to rapidly map key concepts and identify gaps in the existing literature on a specific topic, and it is conducted systematically and iteratively (Mak and Thomas, 2022). Scoping reviews are particularly appropriate for relatively new research topics, such as the one addressed in this PhD study (Peterson et al., 2017).

2.3 Aim of the Review

The overall aim of this scoping review was to provide an overview and summary of the current models of PCC services involving couples for maternal and family health in LMUICs. The objectives of this scoping review are:

1. To provide an overview of the characteristics of research studies on PCC services models involving couples in LMUICs.
2. To provide an overview of the characteristics of PCC service models involving couples in LMUICs.
3. To identify existing research gaps in the study of PCC services in LMUICs.
4. To further refine the research questions to be addressed in this PhD project.

2.4 Methods and Analysis

The methodological framework proposed by Arksey and O'Malley (2005) and recommendation for enhancing the methodology by Levac et al. (2010) were employed to guide this scoping review. The review followed five stages: (1) identifying the research question; (2) identifying relevant studies; (3) selecting studies; (4) charting the data; and (5) collating, summarising, and reporting the results. The reporting system was guided by the Systematic Reviews and Meta-Analyses extension for Scoping Reviews

(PRISMA-ScR) checklist, and a PRISMA flowchart was used to ensure a transparent search strategy (Tricco et al., 2018). The process was conducted iteratively and non-linearly to ensure comprehensive coverage of the literature (Arksey and O'Malley, 2005; Levac et al., 2010). The protocol for this scoping review has not been registered.

2.4.1 Stage 1: Identifying the Research Question

A preliminary search was conducted to gain insight into the scope of the research question, and it was found that no scoping review on this topic had previously been undertaken. The research question formulated for this scoping review is: "What is currently known from the existing literature about current models of PCC services involving couples for maternal and family health in LMUIC settings?" Four main concepts need to be defined: (1) "preconception care," (2) "couples," (3) "maternal and family health," and (4) "LMUICs."

Definitions of Terms Used

Definitions for each concept were developed to establish the boundaries of this scoping review. The concept of "preconception care" encompasses all models of PCC intervention, whether aimed at improving and promoting general health before pregnancy or addressing specific health problems or circumstances. The term "couples" includes all couples, both married and unmarried, who receive PCC intervention. The concept of "maternal and family health" pertains to the health and well-being of mothers, infants, children, and families resulting from receiving intervention. Data on the countries included in the LMUICs category were sourced from (The World Bank, 2024b). According to World Bank Data (2024), Lower-Middle Income Countries (LMICs) are defined as those with a Gross National Income (GNI) per capita between $1,136 and $4,465, while Upper-Middle Income Countries (UMICs) have a GNI per capita ranging from $4,466 to $13,845. Initially, this scoping review was intended to focus solely on Lower-Middle Income Countries (LMICs). However, as of July 2023, Indonesia was reclassified as a UMIC (World Bank Group, 2023). To reflect this update, the scope of the review was expanded to include research from both LMICs and UMICs, collectively referred to as LMUICs.

2.4.2 Stage 2: Identifying Relevant Studies

Various sources from different databases were utilised to ensure a comprehensive identification of all relevant published and potentially unpublished studies, including grey literature, that could address the research question (Pollock et al., 2021). This scoping review employed five electronic databases: Embase, Medline, PsycInfo, CINAHL, and Web of Science. These five databases are relevant to the fields of mental health,

psychology, and social science concepts (Pollock et al., 2021). Embase, PsycInfo, and Medline are considered credible databases because the journals they index are evaluated for quality, and the data is consistently updated, enabling searches for a wide range of journal articles, dissertations, and theses in health, medicine, psychology, and related fields (Oermann et al., 2021; Pollock et al., 2021). CINAHL is a reputable database that provides access to high-quality journals, as it adheres to stringent criteria, including high impact factors, inclusion in reputable subject indexes, peer-reviewed status, top rankings by industry studies, and overall article quality (Oermann et al., 2021). Web of Science is a respected academic database that indexes many prestigious and high-impact journals and is valued for its user-friendly search capabilities, focusing on the main concepts of titles (Anonim, 2023). Additionally, this review incorporated grey literature from Google Scholar and correspondence with an author from Indonesia.

A set of inclusion and exclusion criteria was established to ensure alignment with the research question and facilitate the identification of relevant studies (Pollock et al., 2021). The inclusion criteria were as follows:

- Any primary research employing any research design.
- The research sample included couples with any relationship status (married or unmarried) in their current relationship.
- The study involved an intervention in the form of PCC intervention services, regardless of the model or setting.
- The PCC services were aimed at the health and well-being of women, men, and children.
- The research was conducted in the LMUICs region.
- Articles were published between 1990 and March 2024. The year 1990 was chosen as the starting point because it marks the period when the terms and definitions of PCC began to be established and recognised internationally.
- Articles were published in English due to time constraints and limited resources for translation, as well as to maintain consistency in keyword searches.

Exclusion criteria include:

- Studies focusing exclusively on health professionals or couples, as this scoping review aimed to explore the nature of PCC services from both the service users and providers.
- Broader literature reviews, policy papers, commentaries, editorials, and conference abstracts.

The search strategy was developed in alignment with the overall aims and objectives of

the study (Arksey and O'Malley, 2005). Consultation with expert librarians at the University of Leeds was undertaken to construct a search strategy that would maximise the coverage of published evidence. Initially, the research question was broken down into three main concepts: "preconception care," "couples," and "maternal and family health." To enhance the sensitivity of the search strategy across the primary databases, commonly used terms related to these concepts were included as synonyms. The search strategy involved combining MeSH headings and keywords related to these three concepts: "preconception care," "couples," AND "maternal and family health." Additionally, searches in Web of Science and Google Scholar were conducted by entering the main keywords directly.

Before formally conducting searches in the five selected databases, a preliminary exercise was carried out in two databases (Embase and PsycInfo) using keywords and subheadings. This trial aimed to identify relevant words and phrases found in titles and abstracts to inform the final search strategy. The objective was to determine whether the search strategy yielded the expected or unexpected results. The initial trial produced an extensive number of irrelevant papers, prompting several modifications to the search strategy until it achieved robust coverage. Once all search results were obtained, they were imported into EndNote X21 reference management software and checked for potential duplicates before proceeding with study selection (Mak and Thomas, 2022). The next step involved filtering the search results using the inclusion and exclusion criteria to review and select relevant articles based on titles and abstracts. If an abstract was not available, the full text was required (Mak and Thomas, 2022). Following the completion of searches in the five databases, additional searches were conducted in Google Scholar. The results from Google Scholar were managed and selected in the same manner as those from the primary databases. Finally, an additional article was included as a result of correspondence with authors in Indonesia. This review employed the PICO framework to guide the selection and justification of electronic databases and search strategies (see Table 2.1).

Table 2.1 Search Strategy with MeSH Terms and Keywords

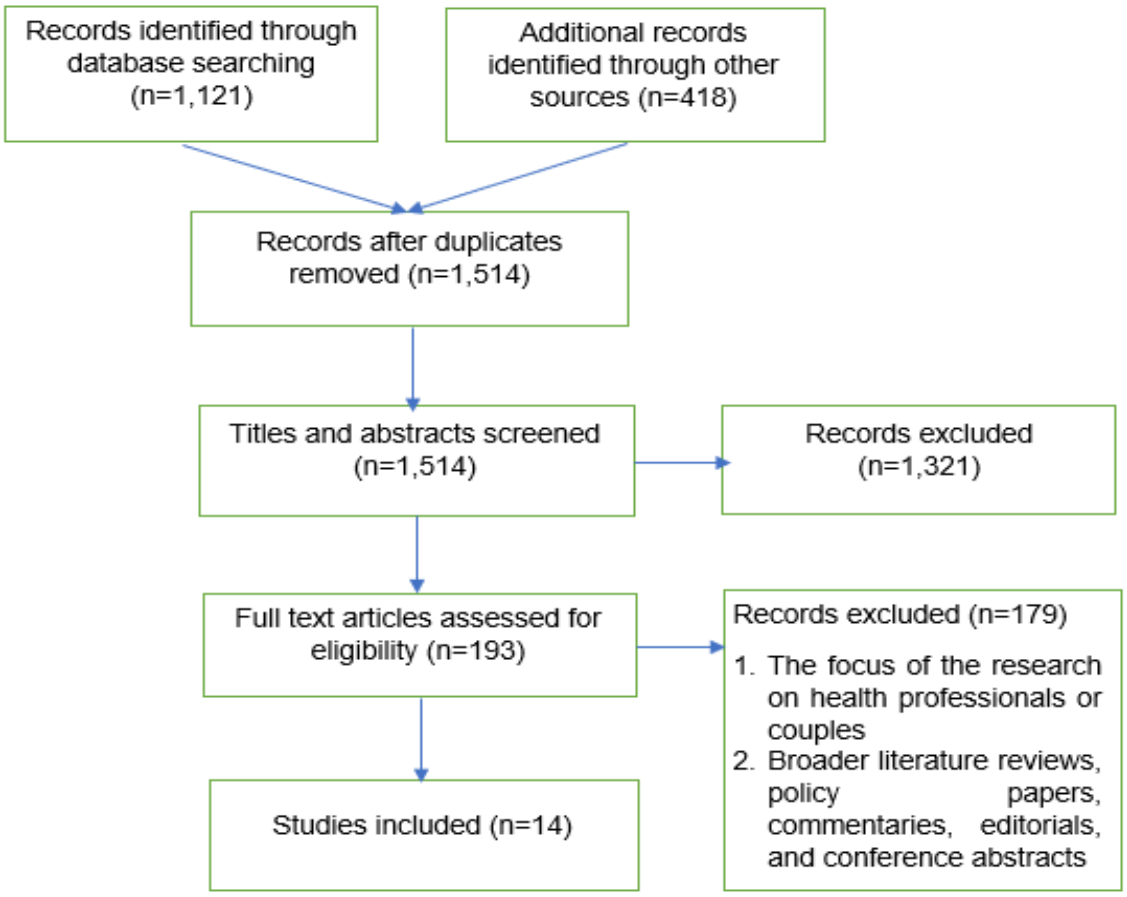
	Main Concept		**Alternative keywords**		**Subject headings**
Population	Couple?	OR	Wom?n and men	OR	1. Couples who plan to have their first child (boyfriend, partner*, spouse) 2. Couples who already have children (father*, husband, parent, married)
AND					

Intervention	Preconception care	OR	Premarital education, premarital preconception, couple* counselling	OR	pre conception* adj3 care, preconception* adj3 care, pre pregnancy* adj3 care, periconception* adj3 care, peri conception* adj3 care, before pregnancy* adj3 care, inter pregnancy* adj3 care, inter conception* adj3 care, premarital counselling, couple* education, preconception counselling, premarital health check-up.
Comparison	AND				
Outcome	maternal and family health		1. women outcome* 2. men outcome* 3. child outcome*		1. physical health, behaviour*, intention, attitude, reproductive health, mental health, family planning, birth outcome*, 2. physical health, mental health, reproductive health, fatherhood 3. infant health, child development

2.4.3 Stage 3: Study Selection

A total of 1,539 studies were identified from various electronic databases: Embase (465), Medline (509), PsycInfo (29), Web of Science (62), and CINAHL (56). In addition, records from other sources, including Google Scholar (417) and one study obtained through correspondence, were added. All references were imported into EndNote X21 for efficient reference management. After removing duplicates, 1,514 studies were available for screening using predefined inclusion and exclusion criteria. This screening process yielded 193 studies, which were retrieved in full text. Ultimately, 14 studies were selected for review. These 14 selected studies were then reviewed with the supervisory team for feedback before proceeding with data charting. It is important to note that the iterative and flexible nature of this process was crucial for refining the research questions. The search strategy and results are detailed in Appendix 1: Search Strategy and Results, and the number of studies identified is illustrated in the PRISMA flowchart (see Figure 2.1).

Figure 2.1 Study Selection Presented Using PRISMA Flow Diagram



2.4.4 Stage 4: Charting the Data

2.4.4.1. Extraction Process

Once the final included studies were identified, the process continued with evidence extraction (Pollock et al., 2021). A data charting form was designed to capture information from each study at both the participant and study levels to standardise the extraction process (Pollock et al., 2021). This "charting" was instrumental in providing logical and descriptive summaries of data from the included studies (Peters et al., 2015) and extracting contextually oriented information from each study (Arksey and O'Malley, 2005). A pilot extraction of the first five studies was conducted to determine whether the extracted variables could effectively answer the research question and to allow for further refinement (Mak and Thomas, 2022). During this stage, the supervisory team was consulted to check and validate the pilot extraction. The tabular presentation included information such as the author, year of publication, research objectives, country and its LMUIC category, research design and data collection methods, sample and techniques, setting and providers, intervention model, and findings (see Appendix 2: Charting the Data).

2.4.4.2. Quality Appraisal of Included Studies

Although quality assessment in scoping reviews is not always conducted, it was considered important in this study. The aim of the quality assessment was not to produce a critically appraised synthesis but to provide an overview of the evidence (Munn et al., 2018). Different appraisal tools were employed due to the diversity of research methods in the included studies, which encompassed qualitative, quantitative, and mixed methods. For qualitative studies, the Critical Appraisal Skills Programme (CASP) checklist was used, and for quantitative studies, the CASP tool for randomised control trials and cohort studies was utilised. The CASP tool enables the systematic assessment of qualitative and quantitative research in terms of trustworthiness, relevance, and results. It contain simple critical appraisal checklists and is suitable for assessing primary study designs (*Critical appraisal checklist*, 2018). The CASP tool is widely used for quality assessment in health and social care research and is considered user-friendly and effective for assessing research transparency, making it appropriate for this review (Long et al., 2020). As the CASP does not provide tools for survey studies and mixed methods, the Centre for Evidence-Based Medicine (CEBM) was used to assess survey studies, and the Mixed Methods Appraisal Tool (MMAT) was employed for mixed methods. The CEBM tool was chosen for its reliability and applicability in assessing social and clinical evidence (Anonim, 2020). The MMAT version 2018 was selected for its suitability in assessing the quality of empirical studies and its flexibility in evaluating various methodologies and study designs (Hong et al., 2018). Despite the differences in the assessment tools, they shared similarities in their assessment systems, employing "Yes," "No," and "Cannot tell" responses to a series of questions. The criteria for categorising appraisal results are detailed in Appendix 3: Summary of Critical Appraisal of Included Studies. The appraisal results were then grouped into three categories: high, moderate, and low. The quality appraisal yielded seven studies classified as high quality, six as moderate, and one as low quality (see Table 2.3: Characteristics of Included Studies). The study classified as low quality was included due to its focus on Indonesia, providing initial insights into PCC services in the country. This study had issues with reporting results, lacking clarity on confounding factors, a small sample size, and no pre-study considerations of statistical power. A summary of the critical appraisal of included studies is presented in Appendix 3: Summary of Critical Appraisal of Included Studies.

2.4.5 Stage 5: Collating, Summarising and Reporting the Results

Descriptive numerical summary analysis and qualitative thematic analysis were employed to present a narrative account of existing literature, as suggested by Arksey and O'Malley (2005) and Levac et al. (2010). The evidence was thematically presented and summarised based on the following topics and sub-topics:

1) An overview of the key characteristics of research on PCC services models involving couples in LMUICs.
2) An overview of the key characteristics of PCC in LMUICs and findings; this topic consisted of three sub-topics: a) Service users; b) Provisions and service providers of PCC; c) Benefits and outcomes.

2.4.5.1. An Overview of the Key Characteristics of Research on PCC Services Models Involving Couples in LMUICs

Despite slow progress over more than three decades, evidence of preconception care involving couples has gradually increased in LMUICs. However, this scoping review reveals that the evidence is not representative of all countries. Most studies were conducted in UMICs (n=9; two from South Africa, five from China, and two from Indonesia), while the remainder were conducted in LMICs (n=5; three from India, one from Zambia, and one from Kenya). The evidence was grouped into four regions based on geographical location: SSA (South Africa, Zambia, and Kenya), EA (China), SA (India and Nepal), and SeA (Indonesia). Notably, although research on preconception care is estimated to have begun developing in the 1990s, studies examining models of preconception care services involving couples appear to have only started increasing in 2008, as no evidence was found before that year.

A prominent finding from the methodological approach is that research on this topic was characterised predominantly by quantitative inquiry, primarily utilising single data sources such as surveys or interviews. There were eleven studies conducted using a quantitative research approach (references: 1, 2, 3, 4, 6, 7, 8, 9, 11, 12, 13); two studies employed a qualitative approach (references: 5, 10); and only one study utilised mixed methods (reference: 14). Particularly for research using a quantitative approach, although the research designs varied, cohort and survey research were the two most frequently used designs, generally employing questionnaires as the data collection method. The sampling technique most widely used was purposive sampling (n=7; references: 4, 5, 7, 9, 10, 11, 14), followed by random sampling and total sampling, two each, and consecutive and convenience sampling, one each. Two studies did not provide information on their sampling technique. The quantitative research was generally

conducted on a large scale, with 54 couples being the smallest sample size (reference: 7) and 31,955,041 couples being the largest (reference: 13). For the research employing a qualitative design, the minimum number was ten (reference: 10), and the maximum was 51 couples (reference: 5). All qualitative research in this review used interviews as the data collection method, but two studies also incorporated focus group discussions (reference: 5, 10). A summary of the included studies can be found in Table 2.2.

Table 2.2 Summary of the Included Studies

References	Author(s) (sort by years)	Country & Category	Study Design & Data Collection Methods	Sample & Technique	Quality Rating
1	Jewkes et al. (2008)	-South Africa -UMIC	-Cluster randomized controlled trial -Survey using questionnaires	-1360 men and 1416 women -No information	High
2	Daniel et al. (2008)	-India -LMIC	-Survey studies -Questionnaire	-4075 couples -cluster random sample	Moderate
3	Wall et al. (2013)	-Zambia -LMIC	-Randomized controlled trial -Questionnaire	-1060 couples -a consecutive sampling	Moderate
4	Li et al. (2014)	-China -UMIC	-Survey Study -Questionnaire	- 256274 couples - purposive sampling	Moderate
5	Schwartz et al. (2014)	-South Africa -UMIC	-Qualitative methods -Focus Group Discussion (FGD) & In-depth interviews	-51couples -Purposive sampling	High
6	Ding et al. (2015)	-China -UMIC	-Retrospective survey -Questionnaire	-12309 pregnant women and 8997 their partners -convenience sampling	Moderate
7	Nugraheni et al. (2018)	-Indonesia -UMIC	-Survey study -Questionnaire	-54 couples: 31 females and 23 males -Purposive sampling	Low
8	Samanta et al. (2018)	-India -LMIC	-The survey quantitative studies -Questionnaire	-1347 couples -Simple random sampling	Moderate

References	Author(s) (sort by years)	Country & Category	Study Design & Data Collection Methods	Sample & Technique	Quality Rating
9	Hong, X. et al. (2019)	-China -UMIC	-Cohort study -Questionnaires, interviews	-2,234,350 couples -Purposive sampling	High
10	Kurniawati and Afiyanti (2019)	-Indonesia -UMIC	-Qualitative study -Focus Group Discussion & participant observation	-Ten couples -purposive sampling	Moderate
11	Gitahi et al. (2020)	-Kenya -LMIC	-Cohort study -Electronic medical record	-219 couples - Purposive sampling	High
12	Xie et al. (2020)	-China -UMIC	-Survey studies -Questionnaires	-419,971 couples -Total sampling	High
13	Diamond-Smith et al. (2021)	-India -LMIC	-mixed methods formative research -In-depth interviews & survey	-31 households participated (couples & mothers-in-law) -Purposive sampling & no information	High
13	Zhou et al. (2022)	-China -UMIC	-Cohort study -Laboratory check (syphilis screening)	-31955041 couples -Total sampling	High

Research on this topic has been conducted for a variety of purposes, predominantly aiming to evaluate preconception care programmes and their measurable outcomes, such as the level of knowledge, incidence rates, or prevalence rates of diseases. Most research aimed to evaluate PCC programmes (references: 1, 2, 3, 6, 8, 9, 11, 12, 13, 14). Other studies focused on measuring the outcomes of PCC programmes (references: 4, 5, 10). A few studies aimed to explore the experiences of the implementation of PCC services from the perspectives of service users and providers (reference: 5).

2.4.5.2. Key Characteristics of PCC Intervention in LMUICs and Findings

2.4.5.2.1 Service User

The primary recipients of PCC intervention varied across countries, influenced by factors such as local epidemiology (references: 1, 3, 5, 11), national priorities (references: 1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14), and socio-cultural and economic influences (references: 2, 7, 8, 10, 14). These interventions targeted both married and unmarried

couples. However, while the studies focused on couples, evidence indicates that men's participation was lower than women's in seven out of fourteen studies (references: 1, 4, 5, 6, 7, 13, 14).

Five studies conducted in China (references: 4, 6, 9, 12, 13) reported that the provision of PCC intervention was primarily aimed at addressing national interests, specifically reducing maternal and infant mortality by improving maternal health and pregnancy outcomes. The government provided free PCC intervention to married couples, particularly those planning to have children.

In comparison, PCC in SSA generally focused on addressing high-risk groups, such as couples who are HIV-positive or infected with sexually transmitted diseases. Studies conducted in Kenya, Zambia, and two in South Africa reported that PCC intervention targeted both married and unmarried couples who were positive for HIV and sexually transmitted diseases. In these settings, PCC aimed to prevent the transmission of HIV to partners and their babies, encourage the use of contraceptive methods, avoid unplanned pregnancies, and improve the health behaviours of couples.

PCC interventions in South Asian countries (India and Nepal) targeted not only couples but also adolescents, families, and key stakeholders in the local community. One study in India (reference: 2) targeted young married couples and mothers-in-law. The involvement of youth groups and families was deemed crucial due to the central role of the family in marriage decisions, where parents often marry off their children at an early age due to strong local social, cultural, and religious influences. To reduce the high incidence of complications during pregnancy and childbirth resulting from early marriage, a PCC intervention based on a sociocultural and community approach was developed. Another study in India (reference: 8) aimed to improve the reproductive health of married and first-time pregnant couples, focusing on marginalised couples in rural areas. Meanwhile, in Nepal (reference: 14), the PCC intervention targeted couples, mothers-in-law, and local stakeholders, addressing malnutrition and persistently poor maternal and infant health outcomes. The last two studies were conducted in Southeast Asia, specifically in Indonesia. The high burden of maternal and infant mortality and morbidity was a driving factor in providing PCC interventions, which targeted couples preparing for marriage.

2.4.5.2.2 Provision of Preconception Care Intervention

This subtopic outlines findings related to settings, service providers, delivery strategies, and intervention packages utilised in the included studies. PCC interventions were provided in various settings, including communities or villages, hospitals or clinics, and primary health centres, and were delivered by health professionals or trained facilitators.

The strategies for PCC service delivery and the intervention packages varied depending on local epidemiology, the role of government, and the socio-cultural and economic context. Despite all studies recruiting both men and women to participate, the focus remained predominantly on women.

Setting and Service Providers

PCC interventions were provided in various settings, such as communities/villages, hospitals/clinics, or primary health centres, and were delivered by both health and non-health professionals. In China, interventions were typically offered in hospitals or health clinics, whereas in Indonesia, these services were provided in primary health centres. In both countries, preconception care services were delivered by multi-disciplinary teams consisting of doctors, nurses, midwives, and public health service specialists. In SSA, the settings for interventions varied: in South Africa, services were provided in communities/villages by trained facilitators who were not health professionals, whereas in Zambia and Kenya, services were delivered in clinics by health professionals such as doctors and nurses. India and Nepal, sharing similar social and cultural characteristics, employed a community engagement-based approach. Consequently, PCC interventions in both countries were provided in community/village settings, with service providers generally being trained facilitators rather than healthcare professionals.

Delivery Strategy and Package of Preconception Care

The PCC delivery strategies and intervention packages varied across LMUICs, tailored to the specific conditions of local epidemiology, socio-cultural and economic contexts, pre-existing interventions, and available resources.

In China, PCC typically employed a clinical approach involving various health examinations for couples, including both physical and laboratory tests. The intervention package included obtaining couples' medical and social histories to conduct a risk assessment, offering health promotion, and providing screening tests, counselling, and treatment for health problems before pregnancy. The availability of resources supporting PCC services in China enabled extensive coverage, reaching nearly the entire population, and allowed these services to be delivered in a routine and structured manner. The strategies employed included integrating PCC with previously established institutional services; for example, in Hubei Province, PCC was officially integrated with the National Population and Family Planning Commission.

Unlike China, PCC approaches in SSA typically combine clinical and community-based participation, with interventions involving testing, management, education, counselling, and sometimes community engagement. Intervention packages varied across countries

based on prevalent health issues and available resources. For instance, in reference 5, the intervention package "Safer Conception Services" targeted HIV-positive couples planning conception in a resource-limited area of South Africa, offering educational programs on condomless sex and home self-insemination. Meanwhile, Kenya (reference: 11) provided more comprehensive services than South Africa, "Special Preconception Services", which includes screening, testing, treatment, and education/counselling for HIV-positive couples. Another model in South Africa incorporated participatory learning with critical reflection and testing for HIV and HSV-2 (reference: 1), as seen in the "Stepping Stones" programme aimed at modifying couples' sexual behaviour to prevent HIV and herpes transmission. In addition, integrating PCC services with existing healthcare programmes proved effective in SSA. For instance, in Zambia (reference: 3), PCC services targeted cohabiting HIV-positive couples to prevent unplanned pregnancies, integrated within the Family Planning intervention programme.

Compared with PCC interventions in China and SSA, those in South Asia, particularly in India and Nepal, are unique due to the strong influence of local socio-cultural contexts and religious beliefs. In South Asia, the influence of social culture and religious beliefs is very strong. The tradition of marrying at an early age is still prevalent, and after marriage, it is commonly expected that the woman will become pregnant soon. In these settings, young couples typically live with their extended families. Consequently, PCC intervention strategies in South Asia target adolescents, young married couples, families, and key community figures. This necessitates a community-based approach, where interventions are provided in community settings, focusing on education and counselling to increase knowledge, build positive attitudes, and promote healthy behaviours. The PCC interventions were generally carried out over a long period, ranging from four months to several years. For example, in India (reference: 2), the intervention called "*PRACHAR"* involved counselling and education delivered through workshops and behaviour change communication to improve knowledge about reproductive health and the treatment of sexually transmitted diseases. The "*PRACHAR*" intervention was a multi-year (3-5 years) programme carried out under an international project. Another PCC intervention approach focused on the family, using interactive and supportive methods. For instance, in India (reference: 8), the PCC programme called "Family-Centric Safe Motherhood" included education and counselling about pregnancy health services, childbirth, pregnancy complications, and family planning. This intervention was carried out over one year using various learning methods such as group counselling, family advocacy, and positive modelling. A community-based participatory design was also adopted in Nepal (reference: 14). The PCC programme called "*Sumadhur*" (meaning best relationship) was an intervention designed to foster cooperation between target recipients (couples

and mothers-in-law) and local stakeholders such as the District Advisor Committee. This intervention model employed interactive and informative content about women's nutrition and health, addressed unfair gender norms, and strengthened household relationships. The programme was conducted over four months.

Compared to the previous three regions, evidence from Southeast Asia was notably limited. Only two studies were conducted in Indonesia, with limited information available regarding the implementation of PCC services in the country. In Indonesia (reference: 7), it was noted that the PCC consisted of a single session lasting approximately 3 to 4 hours, delivered by healthcare professionals from the Primary Health Centre and the Office of Religious Affairs. However, specific details regarding the model, approach, strategy, and intervention package were not provided. Another PCC intervention was conducted in a different province of Indonesia (reference: 10), but no additional information regarding the specifics of the PCC intervention was included in the study.

2.4.5.2.3 Preconception Outcomes

In this review, the benefits of PCC interventions were categorised into two groups based on the populations receiving services. Firstly, PCC interventions were aimed at 1) married couples wishing to conceive, including young married couples. Secondly, they targeted 2) high-risk groups of couples. Evidence indicates that various benefits from PCC interventions were experienced by diverse community groups, with both short- and long-term advantages observed. However, further exploration is needed to identify additional benefits derived from PCC models involving men.

Preconception care for married couples wishing to conceive

Five studies conducted in China demonstrated that PCC interventions can effectively address couples' health risks (reference: 4), reduce unwanted pregnancies, mitigate health issues among couples, and enhance their lifestyle and behaviours (reference: 6). Additionally, these interventions identified abnormal preconception blood pressure to optimise pregnancy timing (reference: 9), managed chronic illnesses and behaviours affecting pregnancy outcomes (reference: 12), and highlighted the importance of male involvement in preconception screening to mitigate risks of transplacental syphilis infection (reference: 13). In Indonesia, two studies indicated that premarital PCC programmes enhanced couples' knowledge and attitudes regarding reproductive health and readiness for pregnancy (reference: 7). These interventions also contributed to increased physical, psychological, economic, and social readiness among couples in preparation for building a happy family.

Three studies highlighted the benefits of PCC interventions among young married

couples and their families in India and Nepal. In India, these interventions effectively increased knowledge, attitudes, and behaviours related to reproductive health and contraceptive methods (reference: 2). They also improved health behaviours during pregnancy, the postpartum period, and the use of contraceptives (reference: 8). Meanwhile, a study in Nepal focused on interventions tailored to respect cultural and belief norms, suggesting potential improvements in the health and well-being of young married couples by addressing local practices and beliefs (reference: 14).

Preconception Care for Groups of High-risk Couples

Four studies conducted in SSA demonstrated that PCC interventions effectively reduced the incidence of sexually transmitted diseases and influenced men's sexual behaviour (reference: 1). These interventions also strengthened programmes aimed at preventing HIV transmission and reducing unplanned pregnancies (reference: 3), increased the adoption of safer contraception methods (reference: 5), and showed potential in enhancing prevention strategies against HIV transmission among couples (reference: 11).

2.5 Discussion

2.5.1 Characteristics Research on Preconception Care in LMUICs

This scoping review shows that evidence for PCC interventions involving couples in LMUICs is beginning to develop, yet research on this topic is typically conducted using quantitative approaches. The availability of evidence on PCC involving couples is highly important and serves as a valuable inspiration for those working in the same field in LMUICs (WHO, 2013). The majority of quantitative studies reviewed here are of high quality, offering significant insights into variables such as knowledge levels, attitudes, behaviour, intervention effectiveness, and pregnancy outcomes. However, further exploration is needed to better understand public perceptions and responses to PCC interventions. Insights from service users would be very useful for improving preconception services (Khekade et al., 2023). Incorporating service users' perspectives can provide valuable insights into their expectations and preferences regarding preconception care services, thereby enhancing service acceptability (NEJM Catalyst, 2017). Therefore, additional research is essential to explore service users' perspectives, identify areas for improvement, and ultimately improve service delivery.

2.5.2 Characteristics of Preconception Care Intervention in LMUICs

This scoping review reveals that PCC interventions in LMUICs vary significantly due to several factors, including local epidemiology, government involvement, and socio-cultural and religious beliefs. The diversity of PCC interventions in LMUICs reflects disparities in financial resources, human capital, and infrastructure necessary to sustain these programmes (Ladur et al., 2021).

2.5.2.1 Local Epidemiology

Although the WHO has recommended a universal PCC intervention package suitable for all conditions, including those with limited resources, its implementation in specific settings can be adapted according to local epidemiology, existing interventions, mechanisms, and resources (WHO, 2013). For example, this scoping review identified that PCC interventions in LMUICs were conducted to address diverse local health issues. In SSA, interventions typically focused on high-risk couples affected by HIV and sexually transmitted diseases (Jewkes et al., 2008; Wall et al., 2013; Schwartz et al., 2014; Gitahi et al., 2020), while in India and Nepal, the focus was on young married couples due to cultural norms of early marriage and persistent issues, such as malnutrition (Daniel et al., 2008; Samanta et al., 2018; Diamond-Smith et al., 2021).

2.5.2.2 Important Role of Government

The government plays a pivotal role in incorporating PCC interventions into existing national efforts (WHO, 2013). For example, this scoping review highlights that PCC interventions in China are typically well-organised and structured, facilitated by trained health professionals, owing to strong governmental commitment. China has a longstanding PCC programme initiated by the government known as the "National Free Preconception Health Screening," established as a welfare project since 2010 (Xu et al., 2022). The successful implementation of PCC in China can be attributed to substantial governmental support, including adequate resources and financial backing to ensure widespread coverage of PCC services to couples (Xu et al., 2022). This well-organised programme has been developed with the expertise of leading perinatal care specialists (Zhang et al., 2015). By 2022, this nationwide initiative had reached more than 80% of couples planning to conceive within six months (Xu et al., 2022). Country ownership and leadership are crucial in translating policies and strategies into actionable initiatives, including financial commitments and resource allocation and management (WHO, 2015).

In contrast, this scoping review indicates that the implementation of PCC intervention services in SSA countries generally faces significant challenges, primarily due to limited funding and resources. These findings align with a previous scoping review by Ukoha et

al. (2022), which noted that PCC services in SSA are typically delivered opportunistically rather than routinely, lacking a well-structured framework due to resource constraints. Additionally, factors such as inadequate resources, a shortage of trained health professionals, and the absence of clear guidelines for PCC provision contribute to the limited availability of PCC services in SSA (Ukoha et al., 2022). Ndou et al. (2023) also reported that implementing PCC interventions in practice according to recommendations is challenging due to limited resources in South Africa.

2.5.2.3 Social-cultural and Religious Beliefs Influence

The PCC interventions in India and Nepal exhibit distinctive characteristics primarily influenced by strong socio-cultural and economic factors within their contexts. These interventions primarily target marginalised groups who often face significant barriers in accessing healthcare services (Narendra et al., 2023). Addressing this, WHO (2013) recommends the inclusion of socially and economically marginalised groups to ensure equitable health access for all. Engaging husbands and family members of newly married women is considered crucial in educational strategies, as they typically play important roles in decision-making regarding food, healthcare access, and contraceptive use (Narendra et al., 2023). PCC interventions in these regions are typically administered by trained facilitators using a community-based approach within local settings. This approach is deemed suitable where strong social and cultural norms heavily influence health-seeking behaviours, as observed in India and Nepal (Narendra et al., 2023). In this particular context, WHO (2013) further recommends delivering PCC interventions in clinical or community settings, fostering collaborative efforts with sectors like education and civil society groups, including faith-based organisations. In Nepal, the success of PCC interventions in addressing complex, culturally embedded practices and beliefs hinges on establishing close partnerships with target recipients and local stakeholders. Integrating culturally sensitive preconception care is crucial in contexts characterised by diverse religious, cultural, and historical backgrounds (Lang et al., 2020). The convergence and collaboration between various government departments are essential to encourage and ensure the successful implementation of the program (Narendra, et al., 2023).

2.5.2.4 Preconceptions Outcomes

The findings of this scoping review indicate that PCC interventions involving couples have delivered benefits across various PCC targets and populations. However, there is a notable lack of studies focusing on men. A study similar to this, which implemented a couple-focused intervention among African American couples, reported that a health prevention programme was perceived to offer benefits in enhancing the health of both

male and female partners (Barton et al., 2021). PCC interventions can significantly enhance maternal and child health outcomes across diverse populations (WHO, 2013). Engaging men in PCC can heighten awareness of their pivotal role in maternal and child health and promote healthier behaviours among men, thereby yielding additional benefits (Ladur et al., 2021) .

2.5.2.5 Research on PCC in Indonesia

In South Asia, there is relatively little evidence regarding the provision of PCC interventions, with only two studies conducted in Indonesia. Compared to other models, PCC intervention in Indonesia is unique and has its own characteristics. This uniqueness stems from the fact that the PCC intervention targets couples who are getting married and is part of the marriage application process. However, similarities and differences were also found. Based on the approach used, it is similar to PCC in SSA, which uses an educational and clinical approach, but PCC in Indonesia is much simpler in terms of the education model and health examinations carried out. Although it may be less effective because it is conducted once in a relatively short time (around 3-4 hours for group education and counselling), the material provided is very extensive (15 topics). Indonesia has similarities with India and Nepal, where couples' health behaviour is strongly influenced by local socio-cultural and religious beliefs due to the dominant role of the family and the strong influence of religious organisations (Daniel et al., 2008; Samanta et al., 2018; Diamond-Smith et al., 2021). However, there is little information related to the provision of PCC in Indonesia that can be drawn from these two studies. Given the lack of evidence regarding PCC interventions in Indonesia, further research exploring the implementation of PCC interventions would be beneficial. Therefore, it is important to conduct more studies to evaluate practices, their consistency, access, and their impact on maternal and family health in different contexts to enable the development of appropriate guidelines for specific situations.

2.6 Research Gaps

The discussion and summary of this scoping review have provided insights into the research methodologies used, factors influencing PCC interventions, their outcomes, and research on PCC in Indonesia. However, there are gaps and limitations within the current evidence.

Firstly, while there is increasing evidence on PCC interventions involving men in LMUICs, the research on this topic is predominantly quantitative in nature, with most studies relying on single data sources such as interviews or surveys. In addition, evidence tends to be concentrated in specific countries like South Africa, Zambia, Kenya,

China, India, and Nepal, with limited data available from Indonesia. Therefore, further research focusing on PCC involving men using diverse approaches, particularly qualitative methods employing multiple data collection techniques, would be beneficial.

Secondly, while all PCC models incorporate an educational component, the delivery of PCC interventions in LMUICs varies significantly due to factors such as local epidemiology, the role of government, and socio-cultural and religious contexts. However, there are gaps in the implementation of PCC programmes between countries within LMUICs due to differences in government commitment, which impact the service structure, availability of services, and supporting resources.

Thirdly, this scoping review indicates that involving couples in PCC shows benefits for men, women, and their potential offspring. However, the predominant focus of research continues to be on women rather than on couples as a unit. This highlights the necessity to refocus attention on both partners within heterosexual couples. Therefore, it would also be beneficial to explore service models that actively involve men, examine the additional benefits that may arise, and identify potential barriers to their participation.

Fourthly, despite the inclusion of two studies from Indonesia in this scoping review, there is very limited information available regarding service implementation. Therefore, conducting an in-depth exploration of service implementation could yield valuable insights into PCC in Indonesia.

2.7 Strengths and Limitations

There are strengths and limitations of this scoping review. A key strength is that it follows a systematic methodological guidelines proposed by Arksey and O'Malley (2005), along with enhancements suggested by Levac et al. (2010) and the PRISMA-ScR Checklist comprehensive reporting system. Employing systematic methodological guidelines and comprehensive reporting systems are crucial for increasing transparency and producing a rigorous, high-quality scoping review (Peters et al., 2021). Although not mandatory, an assessment of the quality of included studies was performed. Quality assessments in scoping reviews can improve the accuracy of interpretation because they are based on evidence whose quality is identified (Brien et al., 2010). Consultation with stakeholders has been carried out with the supervisory team, who are experts in research methodology and scoping reviews, and the University of Leeds research librarian. Scoping reviews provide an opportunity for further consultation with key stakeholders on the topic of preconceptional care, information scientists, and experts to enhance the quality of evidence dissemination (Arksey and O'Malley, 2005; Peters et al., 2015;

Pollock et al., 2021).

Despite its strength, this scoping review has several limitations. First, the review limits the language to English in the study search and eligibility criteria, which may lead to language bias by excluding potentially relevant studies (Arksey and O'Malley, 2005; Pieper, 2021). Moreover, searches were only carried out in the five commonly used databases. Employing more databases reduces the risk of missing eligible studies and increases coverage (Ewald et al., 2022). Given the broad nature of the research question, a range of research designs was employed, which requires greater effort to handle a more diverse array of study designs (Pollock et al., 2021).

2.8 Summary of Findings from Scoping Review

Summary box
✓ The characteristics of research on PCC service models involving couples in LMICs predominantly reflect the use of quantitative methods. ✓ All PCC models include components aimed at increasing knowledge and awareness, yet their implementation varies based on epidemiological factors, governmental roles, and local sociocultural influences. ✓ Significant gaps in the current evidence include a lack of qualitative research, limited focus on couples' experiences in receiving preconception care services, and insufficient exploration of how service providers manage and deliver these services. Furthermore, there is minimal evidence addressing the role of men and a limited understanding of PCC interventions, particularly within the Indonesian context. ✓ The findings of the scoping review offer valuable insights into the most suitable methods and methodologies for this PhD study, which will be detailed in Chapter 3. These findings also play a crucial role in refining research questions, particularly in underexplored areas such as the role of men, sociocultural influences on context, and the implementation of PPCC in Indonesia.

2.9 The Research Aims and Objectives

The findings presented in Chapters 1 and 2 have informed the development of the following overall research aim, research questions, and specific objectives for this PhD study:

The overall aim was:

To explore the concept and nature of premarital preconception care for maternal and family health in Indonesia.

The research questions and objectives are presented in Table 2.3.

Table 2.3 The Research Questions and Objectives

Research Questions	Research Objectives
1. How do service users perceive and respond to the PPCC services they receive?	1. To describe service users' perceptions of PPCC services 2. To describe service users' response to PPCC services 3. To describe perceptions regarding men's involvement (meaning, benefits and barriers) 4. To identify potential benefits of accessing PPCC services
2. How do service providers manage PPCC services?	1. To understand the context and background of PPCC services 2. To understand PPCC service management and organisation 3. To identify the factors that influence it
3. How are PPCC services provided?	1. To understand the setting 2. To understand the PPCC service delivery process 3. To describe the PPCC service model 4. To identify influencing factors
4. How is access to PPCC services?	1. To identify PPCC service facilitators 2. To reveal barriers in accessing PPCC services

2.10 Chapter Conclusion

This chapter has presented the results of the scoping review, along with an analysis and summary of models of preconception care (PCC) intervention involving couples in low, middle, and upper-income countries (LMUICs). The findings from this scoping review have provided valuable insight into the research methods and methodologies employed by researchers, the characteristics of PCC intervention in LMUICs, and identified gaps in the current evidence. These insights have been instrumental in refining the initial research question and specific research objectives, informing the development of research methods in Chapter 3 of this PhD study, and will contribute to the elaboration of findings in the Discussion Chapter.

Chapter 3 Methodology and Research Methods

3.1 Introduction

The findings from Chapters 1 and 2 prompted the development and refinement of the overall research aim and objectives of this PhD study. In particular, the insights gained from Chapter 2 were crucial in shaping the research methodology employed. This chapter begins with the second positionality statement before presenting the philosophical assumptions underlying this research and detailing the specific research design used. It is organised into six sections: introduction; the philosophical foundation of critical pragmatism; research design; rigour of research and ethical issues; summary, and conclusion. Within this chapter, the rationale for the key research design, methodology, and methods is provided, with further elaboration in Chapters 4, 5, 6, and 7.

3.2 Positionality Statement Related to Methodology and Research Process

Positionality in relation to participants

Within PPCC services, I positioned myself as an outsider, as I am not directly part of this system. However, I have prior interactions and good relationships with health professionals at the research sites, which facilitated the research process. My professional role and position as a senior lecturer at a leading private university in Indonesia influenced my relationships with potential participants and my access to research sites. For instance, even during the COVID-19 pandemic, I was able to obtain research permits and received positive responses from potential participants, as evidenced by the significant number of individuals who expressed interest in participating despite the challenges posed by the pandemic. Additionally, I succeeded in approaching and interviewing two religious leaders. My prolonged engagement in the research setting proved invaluable for understanding specific aspects of the people and the context of PPCC services. During this time, I held informal conversations with health professionals and couples. These trust-building discussions often led participants to share their experiences freely and naturally, which made me feel accepted. Such signs were reassuring and encouraged me, as they indicated I had successfully mitigated any perceived power imbalances with staff and participants. By maintaining a respectful, curious, and humble demeanour, I was able to foster trust and understanding. The

participants' openness and generosity allowed me to gain deeper insights into their perspectives and the systems in which they operated.

Positionality in relation to research context

Contextual reflexivity involves recognising and understanding the uniqueness of the research setting. In this context, I share an identity with the participants as I live in the same environment, am Muslim, and understand the local language, cultural values, religion, and customs. As a result, I occupy a dual positionality, being both an insider and an outsider. My familiarity with the research context enabled me to adopt a more locally acceptable approach, which provided several benefits. This included ease of cultural access and the ability to produce more honest, authentic, or 'thick' descriptions due to the absence of language barriers. This facilitated the exploration of more in-depth information regarding the influence of local culture on health practices, particularly PPCC, including men's involvement in PPCC services, thereby allowing me to obtain richly nuanced data. Moreover, my doctoral education has broadened my perspectives, influencing my values and beliefs. This experience has helped me position myself as an outsider when necessary, allowing me to adopt a balanced role that integrates both insider and outsider perspectives.

Positionality in relation to data analysis and interpretation

Regarding the research design, while I have prior experience conducting qualitative phenomenological research, I had not previously employed a comparative case study design. However, my previous experience in conducting interviews proved valuable, as it provided meaningful insights and enhanced my ability to obtain rich and detailed data during interviews for this PhD project.

The constructivist paradigm also serves as a guideline in developing research methodology, influencing my decisions on selecting data collection methods and approaches to data analysis. For example, to gain an in-depth and comprehensive understanding of PPCC services, I employed multiple data collection methods, including interviews, observations, and document analysis from both users and service providers, to capture diverse perspectives. As a qualitative researcher in training, I am aware of my limitations, especially in analysing multiple data sources. This awareness influenced my choice of data analysis methods for this PhD project. I selected an approach that aligned with the research questions and the characteristics of the data. The chosen method offered systematic and clear steps while maintaining the flexibility needed to accommodate my way of processing information.

In terms of data analysis and interpretation, as an insider, I had assumed that this would

offer certain advantages, such as a prior familiarity with the phenomenon and a deeper understanding of the participants' experiences. To some extent, this assumption proved accurate, as it contributed to generating interpretations that were both credible and trustworthy. Inevitably, being an insider also presented potential challenges. Two key issues were the risks of inherent and unrecognised biases, as well as difficulties in integrating external perspectives into the research process. To mitigate these challenges, the involvement of my supervisory team and research ethics committees was invaluable. They posed critical outsider questions and highlighted aspects I had not considered, helping to counteract potential biases. Developing an outsider perspective was essential for ensuring a balanced approach to the data analysis and interpretation process. Although this was a challenging task, it was addressed through ongoing dialogue and supervision, which enabled me to approach the research with greater objectivity.

Conclusion

In conclusion, in this PhD project, my identities, standpoints, and dual position as both an insider and an outsider have shaped the research process and outcomes of this qualitative study. These characteristics may have influenced various aspects, including the selection of the research topic, access to participants, understanding of their context, the nature of my relationships and interactions with participants, and the interpretation of data—all of which contributed to the strengths of this methodological approach. The implications of holding both positions were carefully considered through reflective processes. Consequently, this positionality statement is crucial for enhancing the credibility and transparency of this PhD research.

3.3 Underlying Paradigm and Research Philosophy

A research paradigm is a theoretical framework that provides ideas, beliefs, and potential biases guiding the research process (Khun, 2015). Two common philosophical paradigms in scientific research and analysis are positivism and interpretivism. Positivism posits that the only way to understand the world is through scientific and systematic methods (Junjie and Yingxin, 2022). It focuses on observable reality, employing statistical analysis to lead to generalisations (Alharahsheh and Pius, 2020). This philosophy commonly underpins quantitative research methods, such as experimental studies, social surveys, structured questionnaires, and official statistics. In contrast, interpretivism holds that researchers observe reality subjectively, as reality is perceived as unique (Junjie and Yingxin, 2022). This belief is grounded in the subjective

understanding of social contexts, aiming to develop theories and concepts from multiple perspectives to comprehend what phenomena mean for individuals and society (Stake, 1995). The emphasis is on the richness of the data collected (Al Riyami, 2015). Interpretivism is frequently employed in qualitative research methods (Junjie and Yingxin, 2022).

The two broad paradigms outlined above provide a foundation for the researcher to determine which research paradigm, along with the appropriate methodology and methods, was suitable for addressing the aims of this study. This PhD study seeks to explore the concept and nature of premarital preconception care (PPCC) for maternal and family health in Indonesia. It aims to capture the processes of interaction among individuals within their specific contexts to gain an understanding of the participants' backgrounds and cultural settings. This approach is grounded in the belief that participants' perspectives are influenced by their backgrounds and experiences (Creswell and Poth, 2016). Given the nature of the research questions posed, this PhD study adopts the philosophy of interpretivism.

3.4 Research Design

3.4.1 The Rationale for Research Design Chosen

The Rationale for Qualitative Research Design

This PhD study aims to explore the concept and nature of premarital preconception care for maternal and family health in Indonesia. To address this aim, a qualitative explanatory research design was employed for two reasons. First, the scoping review revealed that most research on preconception care (PCC) in lower-middle-upper-income countries (LMUICs) has predominantly utilised quantitative approaches. These studies applied statistical generalisation methods, which were insufficient for explaining the mechanisms behind participants' responses and reactions (Creswell and Poth, 2016). Quantitative approaches could only offer a broad overview of trends and their associations with variables through methods such as correlational research design, descriptive research design, and survey research (Creswell and Poth, 2016). Moreover, quantitative methods typically address "what" questions, whereas this PhD study focuses on "how" and "why" questions which required a thorough understanding of the phenomenon within its context (Yin, 2018). Another study in Indonesia found a relationship between premarital preconception care (PPCC) and improved knowledge and attitudes among couples preparing for marriage (Nugraheni et al., 2018). Although Kurniawati and Afiyanti (2019)

conducted qualitative research in Indonesia, it did not offer a comprehensive account of the context and processes involved in PPCC. Qualitative allows exploration of new research topics, such as the topic in this PhD study, in greater depth than quantitative designs (Wilhelmy and Köhler, 2021). Therefore, to build on the findings of existing quantitative research, a qualitative approach was selected to uncover the "behind the scenes" aspects of the topic.

The second reason for choosing a qualitative explanatory research design was that the nature of the research questions was more suitably addressed by qualitative methods. The complexity of PPCC could only be fully explored by visiting the field, observing the phenomenon directly, documenting events, and interviewing participants in their natural settings (Yin, 2018). This PhD study aimed to use various data collection methods to achieve a comprehensive and detailed understanding of the intricate structure involved. Qualitative methods were chosen because they offer a holistic, comprehensive, and contextual understanding based on rich, nuanced, and detailed data (Hamilton and Finley, 2019). This approach includes the mechanism of examining how service users receive and respond to PPCC services, understanding the context of their responses, and uncovering the thoughts and behaviours underlying their reactions (Creswell and Poth, 2016). Additionally, to gain insights into the service provider level (Puskesmas), it was crucial to understand the barriers and facilitators, the involvement of men, and the reasons behind certain service delivery approaches. These questions sought to explain the mechanisms of how both service users and providers think and behave in their respective situations. While a mixed methods design could be appropriate if the research process suggested that neither a quantitative nor qualitative approach alone would suffice (Wasti et al., 2022), the qualitative method was ultimately chosen. This choice was based on its suitability for answering the research questions in a way that was more aligned with the nature of the inquiry compared to quantitative or mixed methods.

There are various types of qualitative research methods, each suited to different purposes. Therefore, an assessment was conducted to determine the most appropriate qualitative research design for this PhD study. The results of this assessment are presented in the following section.

The Rationale for Employing a Qualitative Case Study Design

This PhD study aims to investigate a contemporary, complex phenomenon called PPCC services within its real-life context, without exerting control over participants' behaviour towards research subjects. Therefore, the research methodology selected has been carefully tailored to align with this aim.

Five commonly used qualitative approaches are widely recognised in the social and health sciences: narrative research, phenomenology, grounded theory, ethnography, and case study (Creswell and Poth, 2016). According to Yin (2018), the selection of a qualitative design can be guided by three conditions: 1) the nature of the research question, 2) the focus on historical events, and 3) the extent of behavioural control exerted by the researcher. Consequently, the assessment of these five qualitative approaches was conducted with reference to these three conditions, and the results of this evaluation are presented below.

Narrative research emphasises the chronological sequencing of individual stories, addressing a puzzle rather than directly answering a research question. Phenomenology seeks to understand the essence of experiences as lived by individuals (Creswell and Poth, 2016). While both methods avoid controlling the behaviour of research subjects, they were considered unsuitable for this PhD study due to their differing emphasis on research objectives and focus on historical events. Grounded theory aims to develop a theory grounded in participants' perspectives (Creswell and Poth, 2016). However, this approach was also deemed inappropriate, as the study does not seek to construct a new theory. Ethnography focuses on describing and interpreting the cultural characteristics of a group rather than the phenomenon itself (Bryman, 2016). It typically involves participant observation, requiring researchers to integrate into the study group and undertake activities that may risk informal manipulation. While ethnography incorporates elements of the present, it was considered unsuitable for this PhD study due to its divergence in purpose and the level of researcher involvement, which could influence the research subjects.

A case study is a research methodology used to thoroughly examine complex phenomena within a real-world setting (Yin, 2018). Case studies require an in-depth study of a social phenomenon over a period of time to collect precise and thorough data (Yin, 2018; Priya, 2020). This method often involves "how" and "why" questions, which seek detailed explanations (Yin, 2018). A case study is specifically designed to capture the complexity of a case, fully consider contextual conditions (bounded system), and provide an in-depth explanation of the ongoing 'case' or initiative being researched (Tomaszewski et al., 2020). Case studies are particularly suitable when investigating recent incidents where relevant behaviours cannot be controlled (Yin, 2018).

Based on the research questions posed and the considerations outlined, a case study approach is the most logical choice over the other four methods. This is due to its alignment with the research questions, its suitability in terms of time orientation, and the level of involvement required from the researcher in relation to the research subjects.

The Rationale for Employing Qualitative Comparative Case Study

Traditionally, there are two main variants of case studies: single-case and multiple-case designs (Yin, 2018). However, in fields such as political science and public administration, a comparative case study is sometimes considered a distinct method from these two variants (Yin, 2018). The essence of a single-case study is to provide a significant contribution to knowledge and potential theory building (Yin, 2018). Certain situations, such as critical, unusual, common, revelatory, or longitudinal cases, are more suitably addressed using a single-case study design (Yin, 2018; Priya, 2020).

In comparison, multiple-case studies follow a distinct methodological approach for developing new knowledge (Yin, 2018). The rationale for selecting multiple case studies design was because this approach has a greater opportunity to eliminate data collection errors and biases to produce accurate and more accountable conclusions (Priya, 2020). The researcher favoured a multiple-case study design due to the interest in exploring the complex structure and mechanisms of PPCC services in Indonesia through different cases. Specifically, the researcher chose two cases from two different research locations within the same sub-district. While these locations share similarities in terms of geographic characteristics, such as location, area, and demographics (e.g., population), they differ in their delivery of PPCC services.

A comparative case study design is a method used to study a phenomenon through in-depth examination, involving the analysis and synthesis of similarities and differences to identify patterns between cases within their real-life contexts. This approach helps determine associations across cases (Goodrick, 2020). By employing this design, each case can be studied individually, and cross-case analysis provides greater analytical benefits, producing more comprehensive and robust evidence than a single-case study (Yin, 2018). The comparative case study design is particularly effective for understanding how phenomena operate to achieve desired outcomes within their specific contexts. It also allows for the identification of patterns that can guide the development of detailed explanations of the phenomena under investigation (Goodrick, 2020). This design is likely to reveal decisions or sets of decisions, such as why PPCC services were chosen, how they were implemented, and what results were achieved (Yin, 2018).

3.4.2 Study Proposition

This PhD study utilised study propositions due to its exploratory nature (Yin, 2018). The primary function of a study proposition is to set boundaries on what should be included within the scope of the study and to provide possible answers to the research questions (Yin, 2018). The study propositions were developed iteratively based on the literature. There were four study propositions in this PhD study (see Table 3.1).

Table 3.1 Study Propositions

No	Research Questions	Study Propositions
1.	How do service users perceive and respond to the PPCC services they receive?	Service users' perceptions of PPCC services are influenced by several factors, including effective communication and information, respect and dignity, emotional support, service effectiveness, structure and facilities, access to services, and continuity of care (Nuri et al., 2019; WHO, 2019b; Bellio and Buccoliero, 2021)
2.	How do service providers manage PPCC services?	The management and organisation of PPCC services are influenced by several factors, including leadership, proper planning, education and training, strategic coordination and communication, availability of resources, supportive supervision, effective management of resources, employees and processes, and collaboration and cooperation among providers (Mosadeghrad, 2014; Valaitis et al., 2018; WHO, 2019b)
3.	How are PPCC services provided?	The provision of PPCC services is influenced by provider behaviour and systems related to knowledge and guidelines, opinions about scope of practice, work culture, clinical site structure and safety, and functioning referral system (WHO, 2019b; Nacev et al., 2023).
4.	How is access to PPCC services?	Access to PPCC services is influenced by factors such as cost, service structure and availability, the need for services, fairness in receiving services, and geographic and cultural considerations (WHO, 2019b; Admiraal et al., 2022).

3.4.3 Sampling Strategy

3.4.3.1. Case(s)

The unit of analysis (cases) in this PhD study was Puskesmas, government-appointed institutions providing PPCC services. Specifically, the PhD study examines the implementation of PPCC services at two selected Puskesmas in Makmur Regency (a pseudonym).

3.4.3.2. Method of Selection

The selection of cases was influenced by two key considerations related to the research sites. Firstly, during the data collection period, the COVID-19 pandemic imposed additional responsibilities on health professionals at Puskesmas, including COVID-19 testing, tracing, and vaccination. These extra duties significantly increased their workload, which could affect their willingness to participate in the study. Secondly, social restrictions due to the pandemic were still in effect, with several areas classified as red zones (areas strongly advised against entering). For the safety and security of

participants and the researcher, as well as to ensure accessibility to the research sites, a pragmatic approach was adopted in selecting cases.

3.4.3.3. Study Setting

In Makmur District, there are 12 Puskesmas. To assess the feasibility and accessibility of these Puskesmas as research locations, the researcher consulted with the person in charge of the program at the Makmur District Health Service. The researcher specified the desired case characteristics, including the need for access to individuals, groups, organisations, and service delivery processes related to PPCC services. Based on this discussion, two Puskesmas were identified: Melati and Kenanga Puskesmas. These two were selected due to their alignment with the research requirements. The researcher then sought permission from the heads of both Puskesmas, who granted approval for data collection at their sites. The cases were defined by their location (Makmur Regency), activities (PPCC), and context (socio-cultural background). Data collection was conducted at Melati Puskesmas (Case One) and Kenanga Puskesmas (Case Two) in Makmur District Central Java Province, Indonesia, from mid-November 2021 to mid-March 2022.

3.4.4 The Participants and Recruitment

3.4.4.1. Participants

Participants in this PhD study included service users (women and couples) who accessed PPCC services, service providers (key health professionals, including managers and practitioners, responsible for managing and delivering PPCC services) at Melati and Kenanga Puskesmas; and Heads of local Religious Affair Offices. Initially, this PhD study planned to recruit 30 participants (10 couples/20 service users and 10 service providers). The inclusion criteria for these participants, along with the planned number of participants for interviews and observations, are detailed in Table 3.2.

Table 3.2 Inclusion Criteria of Participants

No	Participants	Inclusion Criteria	Planned Amount
1.	Service users (women and couples)	• Individuals who had accessed at least one PPCC service. • Couples where both partners, men and women, voluntarily agreed to participate.	Interview (20 people): Five couples per Puskesmas Observation: five people at each Puskesmas

		• All participants had the ability to provide informed consent.	
2.	Service providers (health professionals and the Head of Religious Affairs Office)	For health professionals: • Managers and practitioners involved in PPCC services for at least one year. For Head of the Islamic Religious Affairs Office: • Officials who had served for at least one year. All participants had the ability to provide informed consent.	Interview (10 people): Five people at each Puskesmas (three managers, two practitioners)

Participants were selected using a non-probability sampling method known as purposive sampling. This technique is designed to identify and select information-rich participants, with the aim of expanding and generalising theories (analytical generalisations) rather than extrapolating probabilities (statistical generalisations) (Yin, 2018). Purposive sampling enabled the selection of individuals who possessed specific knowledge about the phenomenon of interest and were most likely to provide valuable insights into the research questions (Palinkas et al., 2015).

3.4.4.2. Recruitment of Participants

3.4.4.2.1 Pre-engagement Phase

Initially, the plan was to conduct interviews with service provider participants solely from among health professionals. However, as the researcher became more engaged with the research environment and context, the role of the Head of the Islamic Religious Affairs Office in PPCC services was recognised as significant. The researcher consulted with the supervisory team about the necessity of including this individual in the interviews. The supervisory team agreed, and the researcher was authorised to extend an invitation. In this study, the Head of the Islamic Religious Affairs Office contributed data about prospective brides and grooms and served as a key resource on the role of the Islamic Religious Affairs Office in PPCC services.

Prior to formal engagement, permissions were required from the local government in Makmur District (see Appendix 4: Research Permission from Local Government) to access the two study sites (Melati and Kenanga Puskesmas) and from the two local Islamic Religious Affairs Offices. These permissions were successfully obtained. The research permit was approved by the Head of the Health Resources Division of Makmur District and subsequently forwarded to both the Head of Melati and Kenanga Puskesmas

(see Appendix 5: Research Permit Statement Melati and Kenanga Puskesmas) and the Heads of the Islamic Religious Affairs Offices to facilitate research access (see Appendix 6: Research Permit Statement of the Two Islamic Religious Affair Offices).

After addressing the legal aspects of data collection, the next step was to approach the two selected Puskesmas and the two local Islamic Religious Affairs Offices. The researcher conducted informal meetings with the Heads of both Puskesmas separately to introduce themselves and explain the aims and objectives of the PhD study. To familiarise herself with the research sites, the researcher dedicated two weeks to gaining insight into the local culture and context. During this phase, several adjustments were made to meet the ethical standards required at the research locations. For instance, the Puskesmas required the researcher to undergo COVID-19 detection tests before commencing data collection and to adhere to COVID-19 transmission prevention protocols. The researcher tested negative and subsequently obtained approval to begin data collection. Additionally, the researcher adapted to local customs by dressing appropriately, using a mix of Indonesian and Javanese languages, and observing local practices such as introducing themselves, offering greetings, and interacting respectfully with people at the research sites. After two weeks of pre-engagement, and with permission from the Heads of both Puskesmas, data collection began with participant recruitment in mid-November 2021. Permission was also obtained from the Heads of the Puskesmas to use a designated room for interviews with participants who chose to be interviewed at the Puskesmas. The primary goal at this stage was to assess the feasibility of the study plan and ensure its acceptability to the staff at the Puskesmas. Simultaneously, the researcher met independently with the Heads of the local Islamic Religious Affairs Offices to facilitate the identification of participants from the service users. Discussions with both Heads were productive; they agreed to assist in identifying potential couples referred to premarital preconception care (PPCC) as part of their respective roles. Approaching the Heads of the Islamic Religious Affairs Offices in this manner was deemed appropriate for the study.

3.4.4.2.2 Formal Engagement

After obtaining ethical research approval from the School of Healthcare Research Ethics Committee (SHREC) at the University of Leeds (HREC 20-022) (see Appendix 7: Ethical Research Approval from the School of Healthcare Research Ethics Committee (SHREC) the University of Leeds) and the Ethics Committee of the Faculty of Medicine at Universitas Muhammadiyah of Surakarta (UMS) in Indonesia, the data collection process commenced with participant recruitment (No. 3772/B-1/ KEPK-FKUMS/X/2021) (see Appendix 8: Ethical Research Approval Ethics Committee of the Faculty of Medicine

Universitas Muhammadiyah of Surakarta (UMS) Indonesia).

The dissemination process for both service users and providers involved displaying banners (see Appendix 9: Example of Banner for Research Dissemination) and leaflets (participant invitations) in the waiting rooms of the two Puskesmas (see Appendix 10: Example of leaflets for research dissemination). To reach a broader audience, standing banners and leaflets were also placed at the local Islamic Religious Affairs Offices. These materials provided information about the research activities, invited participants to take part, explained how to join the study, and included the researcher's contact number.

3.4.4.2.3 The Recruitment of Participants from Service Users

The process of recruiting participants from service users involved identifying potential participants, approaching them, and then recruiting them.

Identifying Service Users

In the Indonesian context, couples intending to marry must register with the local Religious Affairs Office for Muslim and Dukcapil (Department of Population and Civil Registration) for non-Muslim. To facilitate the identification of these couples, the Head of the Religious Affairs Office provided the researcher with a list of couples who would subsequently access the PPCC services at the relevant Puskesmas. Additionally, the health professionals on duty in the Maternal and Child Clinic provided the researcher with the names and contact details of potential couples, as they were the first point of contact for these individuals. Before sharing this confidential information, each potential participant (couples or women) had given their consent via a Statement of Agreement, indicating that they were comfortable with their contact details being provided to the researchers and were willing to be contacted within the next 2-3 days (see Appendix 11: Statement Agreement to be Contacted Form). The researcher then contacted the participants and sent all recruitment materials, including an invitation letter (see Appendix 12. Invitation Letter for Service User), Participant Information Sheet (see Appendix 13: Participant Information Sheet for Service Users), and a Research Privacy Notice, electronically via WhatsApp to each couple separately. All procedures and mechanisms for identifying service users had been approved by the Ethics Committees.

Approach to the Service Users

Following identification, service users interested in participating in the study interviews and observations (specifically for premarital health check-up services) were invited to attend the relevant Puskesmas. At the Puskesmas, health professionals on duty in the Maternal and Child Clinic confirmed at least a day before the couples received the PPCC services whether they had received the invitation letter and Participant Information Sheet

(PIS) from the researcher. The health professionals then escorted the service users to meet with the researcher. During this meeting, the researcher introduced herself and provided a detailed explanation of the research, including its aims, risks, benefits, and the nature of their involvement. Participants were informed of their rights, such as the ability to refuse or withdraw from the research at any time without penalty, and were given the opportunity to ask questions and raise concerns. Prospective participants were given at least 24 hours to decide whether they wished to participate in the study and were sent a reminder about their participation. For the approach at Kenanga Puskesmas, where the PPCC service model did not involve men, the researcher personally approached potential male participants with the agreement of their female participants.

The approach to potential participants in the 'Kelas Catin' service observation involved collaborating with the health professional who coordinated the service. With the couples' consent, the service coordinator provided the researcher with the contact details of the couples who had confirmed their attendance. The researcher then reached out to the couples via WhatsApp to introduce herself and sent them an invitation letter, Participant Information Sheet, and Research Privacy Notice electronically. This method was considered locally acceptable.

Recruiting the Service Users and Obtaining Inform Consent

It should be noted that all participants from service users at Melati Puskesmas were couples. In contrast, the service model at Kenanga Puskesmas is designed specifically for women. However, for the purposes of this study, participants from service users in Kenanga Puskesmas included both couples and women to ensure a comprehensive range of perspectives was captured.

A consent document for interview (see Appendix 14: Consent Form for interview with the couples) and observation (see Appendix 15: Consent Form for Observation with the Couples) was drafted for couples to provide joint consent, in line with the recommendations of the Ethics Committee. For female participants, the consent document was adapted with a slight modification in personal pronouns from 'we' to 'I' and was signed by the women only.

For those service users who agreed to participate in the interview and observation of premarital health check-ups, the researcher promptly contacted them to arrange a meeting. During this meeting, the researcher discussed the most convenient time and place (all participants opted to be interviewed at the Puskesmas) and obtained the necessary written consent before proceeding with the interview and/or observation.

For the prospective participants of 'Kelas Catin', all informed couples (a total of 57

individuals) expressed their willingness to participate in the observation. It is important to note that not all attendees were accompanied by their partners; some were only men or only women. Full written consent was obtained from all participants before the 'Kelas Catin' services were provided.

3.4.4.2.4 The Recruitment of Service Providers

Identifying of the Service Providers

To identify participants among health professionals, the researcher began by requesting the Heads of the two Puskesmas to assist in identifying eligible professionals who met the inclusion criteria. For the selection of service providers, particularly health professionals, purposive sampling was employed. In contrast, the approach to the Heads of the Islamic Religious Affairs Offices was conducted personally, given that they were deemed most likely to provide essential information regarding the role of the Islamic Religious Affairs Office in PPCC services.

Approach to the Services Providers

After obtaining a list of potential participants who met the inclusion criteria, the researcher proceeded by approaching them directly. As the Puskesmas was a relatively small institution, all health professionals were already familiar with the researcher due to prior introductions made during the pre-engagement phase. Additionally, the researcher had established good relationships with them during the data collection process. Most interviews with service users were conducted before those with health professionals, so they were already acquainted with the researcher and informed about the study. Consequently, approaching them was relatively straightforward. The researcher met the potential participants personally to explain the research and provide all recruitment materials. During these meetings, participants received an invitation letter (see Appendix 16: Invitation Letter for Service Providers), Participant Information Sheet (PIS) (see Appendix 17: Participant Information Sheet (PIS) for the Service Providers), and Research Privacy Notice documents. The researcher also explained the study's objectives, risks, benefits, and the nature of their involvement, including their rights such as the ability to refuse or withdraw from the study at any time without penalty. Participants were given the opportunity to ask questions and express any concerns. All potential participants provided written consent indicating their willingness to be contacted by the researcher for follow-up.

The health professionals were given a minimum of 24 hours to decide whether they wished to participate in the study, and a reminder was sent to ensure they were aware of the need for their response. For potential participants from the Religious Affairs

Offices, the researcher directly approached the Heads of the Religious Affairs Offices at Melati and Kenanga. During these meetings, the researcher explained the aims and objectives of the study and emphasised the importance of the information required. Both Heads of the Religious Affairs Offices agreed to participate.

Recruiting the Service Providers and Obtaining Inform Concern

For health professionals who expressed interest in participating in the study, the researcher followed up by arranging a suitable time and place for meetings. Full written consent was obtained before conducting any interviews or observations. The informed consent document included information that participants had the right to withdraw from the study at any time and the right to decline to answer specific interview questions if they chose. It was ensured that all written consents were completed and signed before proceeding with interviews and/or observations (see Appendix 18: Consent Form for Interview with the Service Providers and Appendix 19: Consent Form for Observation with the Service Providers). They were given up to a week to reconsider their participation. Once data analysis began, no further data could be retrieved. For observations, if a service provider participant agreed to be observed, they could still withdraw their participation at any time; however, once the observation commenced, the data collected could not be retracted.

3.4.5 Data Collection Method

Research data were collected using three methods: in-depth interviews, non-participant observation, and documentary analysis. Triangulating data from these diverse sources enhances the credibility of the findings and strengthens the rigour of the research (Yin, 2018; Johnson et al., 2020). The primary focus of this PhD study was on data obtained from interviews and observations, with documentary analysis serving to contextualise the regulations and practices surrounding the conceptualisation and operationalisation of PPCC services. The subsequent section provides a detailed account of the data collection processes for interviews, observations, and document analysis.

3.4.5.1. Interviews

3.4.5.1.1. The Rationale for Using Interview as a Data Collection Method

Participant interviews were employed to gain a comprehensive understanding of PPCC services. Interviews are particularly effective for generating valid and meaningful data. Given that this study aims to explore the experiences of individuals involved in PPCC services, both those receiving and providing the service, the interview method facilitates in-depth questioning, interaction, and the examination of language and articulation

(Mason, 2017). This approach allows the researcher to understand how participants construct and express meaning within their specific contexts, making interviews an ideal method for uncovering how individuals attribute meaning to their social experiences (Creswell and Poth, 2016). Additionally, in-depth interviews provide the opportunity to explore work and organisational contexts, yielding a detailed picture of the phenomenon which is essential for developing robust social explanations and arguments, as it captures the complexity and nuance of the data (Dunwoodie et al., 2023).

3.4.5.1.2. Before Interview

A reviewed and tested interview schedule served as the guide for conducting a semistructured interviews (Appendix 20: Example of Interview Schedule).The schedule, which featured open-ended questions, was designed to allow for clarification of participant responses (thought, feelings, and beliefs), thereby enhancing credibility and confirmability (DeJonckheere and Vaughn, 2019). All participants, including both service users and providers, ultimately chose to be interviewed at the Puskesmas.

3.4.5.1.3. Process of Interviews

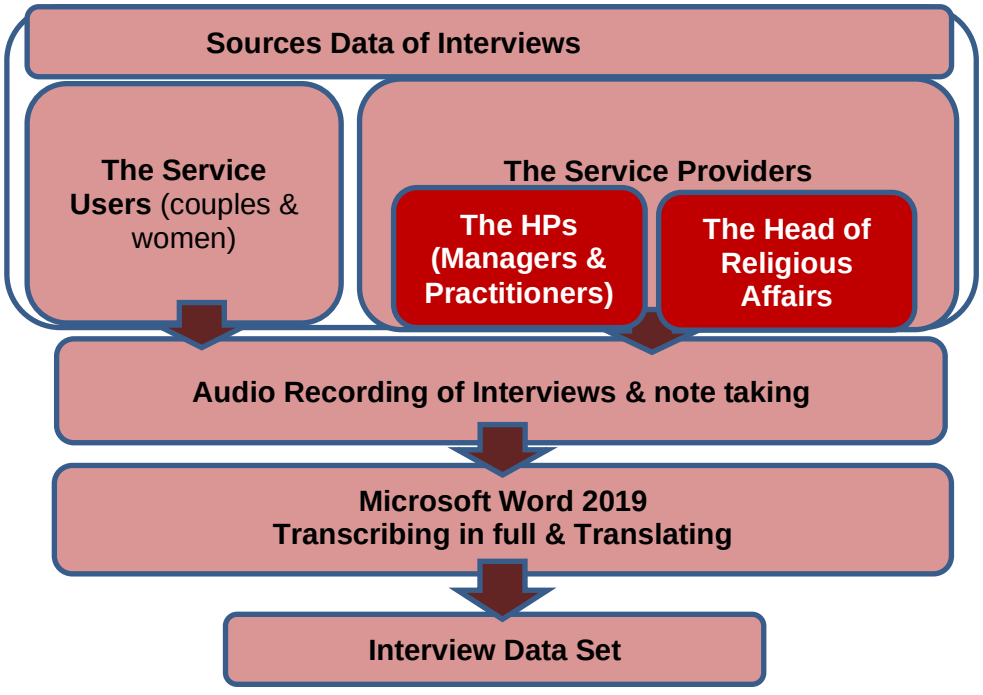
Interviews with both types of participants were conducted in a private room, arranged so that the researcher and participants sat opposite each other at a suitable distance to facilitate the interview process. Given the COVID-19 pandemic, interviews adhered to local regulations to prevent transmission of the virus. All interviews took place during working hours, from Monday to Friday, between 8 am and 2 pm. For service providers, interviews were typically scheduled between 2 pm and 4 pm, while those with the Heads of the Islamic Religious Affairs Offices were conducted in their offices between 8 am and 2 pm at their convenience. To address potential adverse emotional reactions, the distress protocol proposed by Draucker et al. (2009) was followed (see Appendix 21: Distress Protocol). Before starting each interview, the researcher outlined the objectives and process, informed participants that the interview would be recorded using encrypted audio, ensured confidentiality, and reminded them of their right to withdraw their data within 24 hours. During the interview, the researcher guided the conversation with thoughtful questions, maintained a natural flow through active listening, and took notes. Participants were also given breaks and refreshments. The interview schedules were used flexibly, with the protocol, structure, and questions adjusted as needed based on ongoing data collection and analysis. At the end of each interview, the researcher summarised the main points, reiterated assurances of anonymity and confidentiality, and expressed gratitude. These actions were intended to maintain rapport and uphold ethical standards.

3.4.5.1.4. Managing Interview Data

The interview data were derived from two primary sources: the "service users" group, comprising both couples and individual women, and the "service providers" group, which included health professionals (managers and practitioners) and the Heads of Religious Affairs. The raw data consisted of audio recordings of the interviews and the researcher's notes, which included reflections, interpretations, perceptions, and judgments about the situations.

The data were then transferred into a text-based document using Microsoft Word 2019. Interview recordings were transcribed verbatim immediately after each interview. These transcripts were fully translated to capture not only the substance of what was said but also how participants articulated their ideas and language. The processes of transcription and translation are detailed in the following section. All data were subsequently compiled to create the interview dataset. The interview data management process is illustrated in Figure 3.1.

Figure 3.1 Interview Data Management Process



3.4.5.2. Observation

3.4.5.2.1 The Rationale for Using Observation as a Data Collection Method

This study employed overt non-participant observation to gain a comprehensive and objective understanding of the phenomena under investigation, thereby enhancing the study's validity. Overt non-participant observation was utilised to monitor specific types of behaviour in the field without direct interaction with participants, allowing for an understanding of the activities being studied. This method provided insight into the implementation of premarital preconception care services in routine practice. The researcher aimed to explore various aspects, such as daily routines, dialogue, language, and emotions, beyond what could be captured through interviews or documents alone. Since not all knowledge could be captured through interviews with human subjects, information from participant observation related to current events can provide meaningful insights (Uwamusi and Ajisebiyawo, 2023). Observation possesses unique dynamics and capabilities for revealing facts across various dimensions (Mason, 2017). Therefore, observations were anticipated to offer valuable insights into how service users interacted with service providers, including their responses, behaviours, and interactions with their physical, situational, and atmospheric environments (Mason, 2017).

3.4.5.2.2 Process of Observations

Non-participant observation was employed to directly examine how PPCC services were delivered in real settings, which included two types of services: 'Kelas Catin' and premarital health check-ups. As previously noted, observations of 'Kelas Catin' were conducted only at the Melati Puskesmas, while premarital health check-up observations were carried out at both Puskesmas. Notably, since there was no booking system for premarital health check-ups, the researcher had to adjust the timing of observations based on the arrival of service users. Consequently, the researcher did not follow a rigid sequence of conducting all observations before interviews; instead, interviews and observations were alternated based on the situational context and availability, particularly during the COVID-19 pandemic. This flexible approach allowed information from observations to inform and refine the interview schedule, and vice versa.

Although non-participant observation may initially make participants aware that they are being observed, this "awareness effect" typically diminishes over time (Bowling, 2014). Nonetheless, the presence of an observer can influence participant behaviour, a phenomenon known as the Hawthorne effect. To address this, a strategy proposed by Oswald et al. (2014) was implemented (See Appendix 22: Protocol to Reduce Hawtorn

Effects).

Before conducting observations, it was ensured that both service users and providers had given their consent. The researcher first approached the health professionals, who, upon agreeing to participate, facilitated contact with the couples or women participants. The researcher then conducted a brief session with the participants to explain the purpose and procedure of the observation. During the services, the researcher observed from a certain distance in the room, refraining from involvement in the process or interaction with the participants. The researcher employed manual techniques to record information during observations using both structured and unstructured observation sheets, based on Spradley (1980) (See Appendix 23: Observation Sheet). The structured observation sheets included aspects such as space (physical setting), actors (people involved), activities (a set of related actions performed by people), objects (existing physical objects), actions (individual actions performed by people), events (sequences occurring over time), goals (objectives people are trying to achieve), and feelings (emotions felt and expressed). Unstructured observation sheets were used to record additional information not covered by the structured sheets, such as atmosphere, social dynamics, interactions between people, and the environment within the Puskesmas building relevant to the PPCC services. Additionally, the researcher drew sketches detailing the room layout, size, objects within it, and the positions of people to gain a comprehensive understanding of the setting and atmosphere.

3.4.5.2.3 Sources and Type of Observational Data

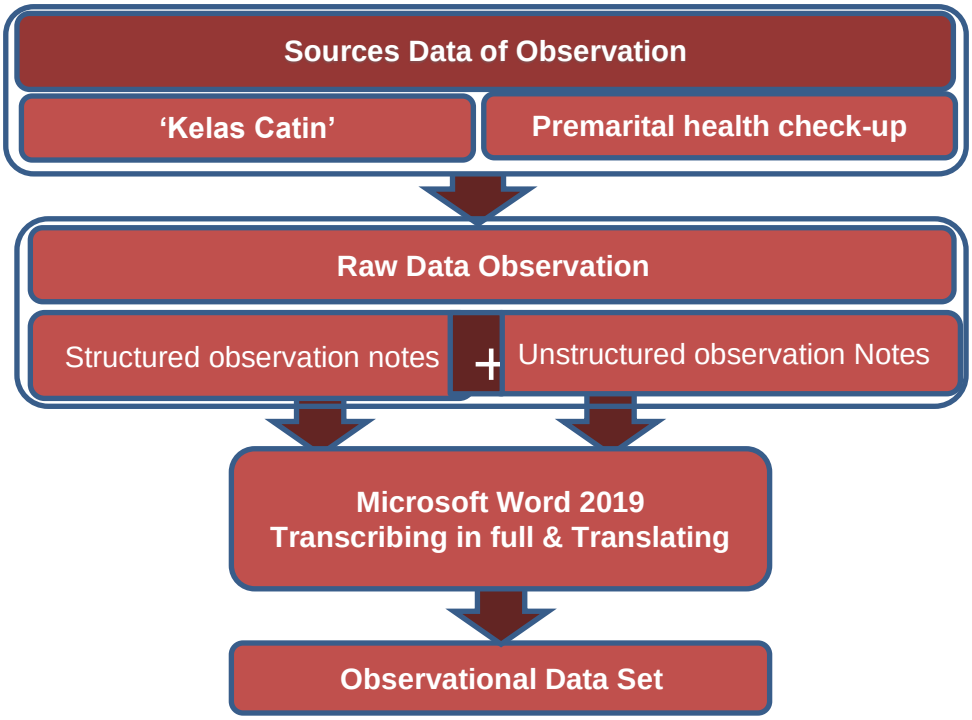
This study utilised two sources of observational data: the 'Kelas Catin' services from Puskesmas Melati and the premarital health check-up services from both Puskesmas. Two recording methods were employed: structured notes and unstructured notes. These methods produced raw observational data.

3.4.5.2.4 Managing Observational Data

After completing the observations, the researcher promptly reviewed the notes and added reflections detailing her feelings, perceptions, and judgements. This process was essential for developing the interview schedule for subsequent interviews and observations, as well as for identifying and obtaining relevant documentation. For instance, when the researcher learned about the requirement for a pregnancy test, it prompted further questions. The researcher recorded these questions and used them to develop interview queries for the Head of the Religious Affairs Office, aiming to verify the information and seek relevant documentary evidence, such as local policy or customs. The raw data from both sources were transferred to Microsoft Word 2019 and translated

into English. The data were then categorised into two groups: ‘Kelas Catin’ services and premarital health check-up services, and compiled into a single dataset. The observation data management process is illustrated in Figure 3.2.

Figure 3.2 Observation Data Management Process



3.4.5.3. Documentary Analysis

3.4.5.3.1 The Rationale for using Documentary Analysis

Document analysis was useful in understanding how a programme was formally conceptualised, including its objectives and expected outcomes. By analysing policy content over time, documenting processes, and triangulating with interviews and other data sources (Dalglish et al., 2020), this method aimed to converge evidence from various sources (Yin, 2018). This convergence enhances the credibility and trustworthiness of the findings (Bowen, 2009). In this study, documentary analysis provided insights into the context in which the research service providers and managers operated. It was anticipated that this analysis would reveal the historical roots and underlying conditions of the phenomena being studied (Bowen, 2009).

3.4.5.3.2 Document Selection

Given the large number of available documents, the researcher developed a set of inclusion and exclusion criteria to systematically guide the selection process. These criteria ensured the authenticity and representativeness of the documents chosen for

analysis.

Inclusion criteria:

1. Official documents issued by local, regional, and national governments.
2. The most recent applicable local, regional, and national regulations pertaining to PPCC services.
3. The latest guidelines or documents utilised in routine PPCC service practices.

Exclusion criteria:

Documents under review by authorities, as institutions typically do not provide data or documents that have not been officially approved.

3.4.5.3.3 Types and Sources of Document

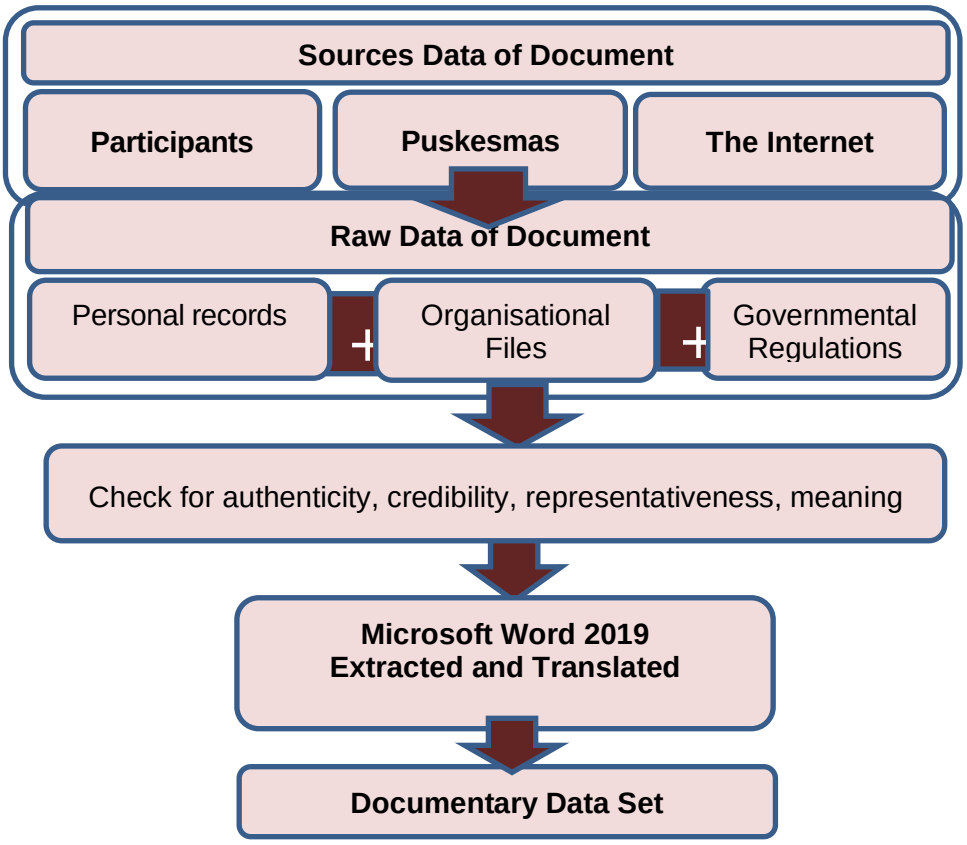
The documents collected included official regulatory documents and implementation materials. Information on relevant PPCC service documents was sourced from key health professionals familiar with the context. The process for obtaining documents varied by type. For official documents such as organisational archives, permission was sought directly from the authorities (Head of the Puskesmas). These documents were then copied or scanned and saved as PDFs, ensuring confidentiality. For documents available online, they were downloaded directly from the internet. Some documents, including confidential service user materials such as cover letters, referral letters for laboratory examinations, and health certificates, required special handling. Permission was obtained from participants to access and store these documents, with assurances that their identities would be anonymised. Photographs of such documents were taken with participants' consent and saved securely in JPEG format. During the data collection process, all physical documents were temporarily stored in a locked cupboard at Universitas Muhammadiyah Surakarta. These documents were subsequently scanned and saved as PDFs, with the physical copies being permanently destroyed. All PDF files were securely stored on the M-Drive at the University of Leeds, protected by a password known only to the researcher. A summary of selected documents can be found in Chapter 6.

3.4.5.3.4 Managing Documentary analysis into Data

Each document was carefully reviewed to identify relevant information. This information was then extracted from the original document, transcribed into Microsoft Word 2019, and translated. All files were compiled into a document dataset. Prior to analysis, documents were assessed for authenticity, credibility, representativeness, and meaning to enhance the reliability and validity of the data (Bowen, 2009). The document data

management process is illustrated in Figure 3.3.

Figure 3.3 Document Data Management Process



Each file from interviews, observations, and documentary analyses was assigned a unique identifier using a consistent naming system and layout throughout the data collection process. These settings were designed to facilitate easy data retrieval, including creating concise and meaningful names and using file names to classify file types.

3.4.6 Transcribing and Translating Processes

All interviews with service users and providers were audio recorded with permission, downloaded, and transcribed verbatim. The researcher transcribed all audio interviews herself as soon as possible to become familiar and engaged with the collected data. As participants used Indonesian, a translation process into English was required. The researcher and a professional translator translated the Indonesian transcription into English. The researcher hired a professional translator fluent in both Indonesian, mixed with Javanese, and English, with sufficient education to understand the concepts. In the confidentiality agreement with the professional translator, he signed an agreement to respect the confidentiality of the participants' information and not to use the information

for any other purpose (Appendix 24: Translation Confidential Agreement).The data accessible to the professional translator consisted of anonymised interview transcripts, shared via email. The professional translator received fees according to the rates set by their association.

The researcher and professional translator translated the data from Indonesian to English and then back to Indonesian. Subsequently, both the researcher and translator compared and discussed the original transcript to verify accuracy and authenticity. This iterative process of translating into English and back into Indonesian continued until an agreement was reached. Back translation was a crucial step to enhance accuracy and improve the quality and rigour of the research (Chen and Boore, 2010). To increase transparency in the transcription and translation process, the supervisory team was involved by reviewing several samples of the translation results sent by the researcher for feedback.

3.4.7 Data Analysis Methods

In a qualitative case study, constructing a coherent interpretation from multiple data sources is complex. Several methods are potentially relevant for analysing the types of qualitative data collected for this study and suitable for a case study design, including discourse analysis, semiotic analysis, thematic analysis, and content analysis. This method is commonly used in social, political, and historical fields, aiming to understand social realty through language by describing, interpreting, and analysing spoken and written texts (Mogashoa, 2014). However, it was deemed unsuitable because it relies heavily on language, while comparative case studies require a broader range of conceptual, analytical, and synthetic work to understand the complexity of phenomena, not merely language (Goodrick, 2020). Semiotic analysis, on the other hand, seeks to understand the meaning of signs in the cultural context of social phenomena (Schreier et al., 2019). This approach is commonly used in the fields of philosophy and psychology (Schreier, 2012). While semiotic analysis takes into account the research context relevant to case study design, it generally applies the meaning of signs in a cultural context to products or messages intended for a wider audience (Schreier, 2012). Additionally, the data source for semiotic analysis is typically a single type of material, such as television series, newspaper articles, or advertisements, rather than interviews (Schreier, 2012). This method was not considered suitable because this PhD study draws on multiple data sources, using the research context to understand real-life social phenomena and emphasising how the intervention is carried out to achieve the desired outcomes (Goodrick, 2020).

Thematic analysis and content analysis are two widely used analytical methods in the

fields of health, social sciences, and psychology (Vaismoradi et al., 2013; Braun and Clarke, 2022). Both methods are suitable for analysing data that requires an interpretive approach and offer a robust analytical framework (Vaismoradi et al., 2013). They can be employed to examine narrative materials from different sources and answer the same set of research questions, specifically addressing "how" and "why" questions (Vaismoradi et al., 2013). Therefore, these two methods are relevant and can be used either as stand-alone approaches or in combination.

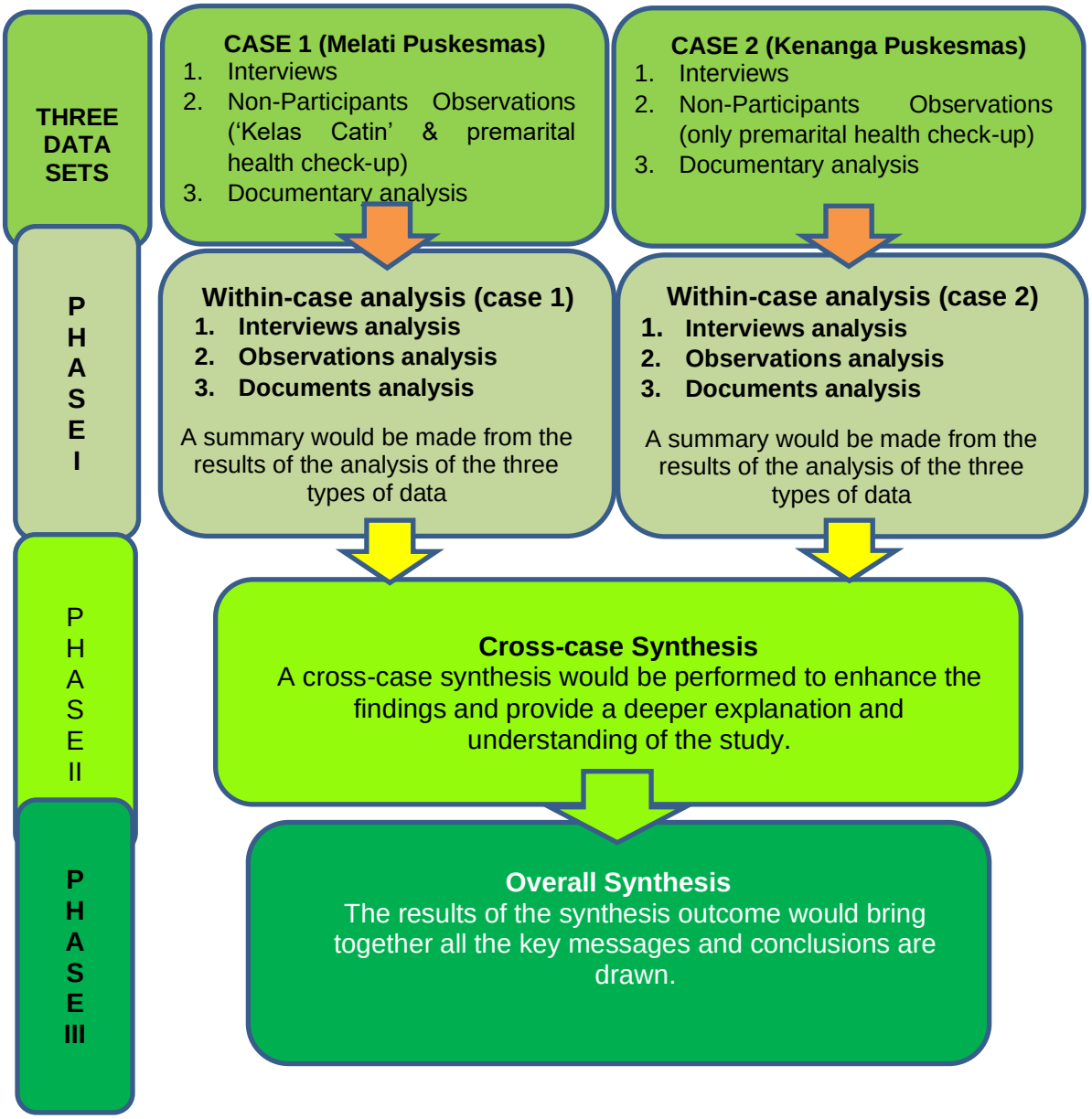
The chosen data analysis approach aimed to elucidate the three data sets (interviews, observations, and documents) to generate findings potentially valuable for developing targeted interventions and policy. Different data sets may require different analytical methods (Richards and Morse, 2012). Therefore, decisions about the analytical methods used in this study were based on the research questions, research design, and the nature of the data sets (Richards and Morse, 2012).

3.4.7.1. Stages of Analysis Process

The overall analytical process was conducted in three phases: 1. individual case analysis followed by within-case analysis; 2. cross-case analysis; and 3. overall synthesis. The stages of the analysis process are illustrated in Figure 3.4 Stages of Analysis Process.

It should be noted that the analysis of the interview and observational data sets was conducted in several stages. The analysis of case one was completed first, followed by the analysis of case two. The final themes generated from the first case were utilised as an analytical framework for the coding process in the second case. Thus, in this PhD study, the resulting themes in both cases were the same. This approach was adopted to facilitate the subsequent analysis process, namely cross-case analysis, where comparisons between the two cases are used to identify similarities and differences. For document analysis, due to the distinct nature of the data, the results were reported in a separate chapter (see Chapter 6: Findings of Documentary Analysis). These results were then combined with the findings from the interviews and observations in Chapter 7: Synthesis of All Findings.

Figure 3.4 Stages of Analysis Process



3.4.7.2. Phases of Data Analysis

3.4.7.2.1 Phase One: Analysis within Each Case

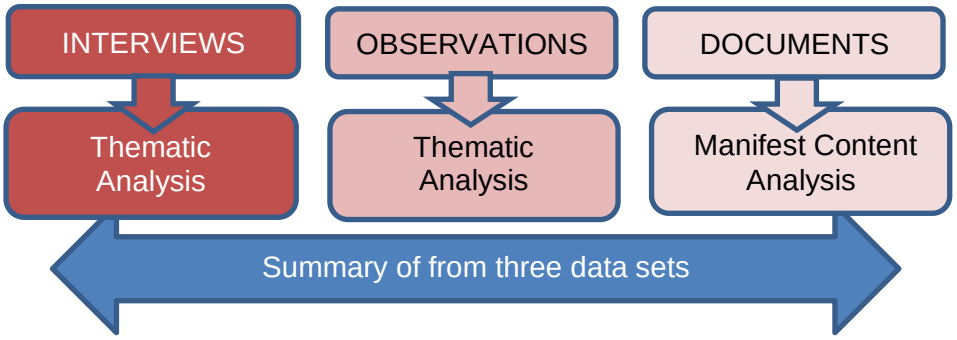
Within-case analysis involves analysing individual cases using specific analytical methods to gain a comprehensive understanding (Miles et al., 2014). The primary purpose of within-case analysis is to describe, understand, and explain phenomena within a single case, bounded by context and site (Miles et al., 2014). This process begins with each type of data being analysed systematically and separately, starting with individual interviews (service users, practitioners, and managers), followed by

observations, and finally, document analysis.

In this PhD study, rich interview data and thick observational data were collected, while the document data were intentionally kept relatively thin (a pragmatic extraction of data) and descriptive. Given that each data set had different characteristics in terms of the breadth and depth of the information provided, each data set was analysed using the method best suited to its nature, fitting well with the case study design and research question (Richards and Morse, 2012).

The interview and observation data were analysed using thematic analysis, while the documentary data were analysed using manifest content analysis. A summary of individual case analyses is provided in Figure 3.5.

Figure 3.5 Within Cases Analysis



The rationale for choosing the analysis method is presented in the following section.

Analysis of Interview and Observation Data

The Rationale for Selecting the Thematic Analysis for Interview and Observation Data

Thematic analysis is a robust qualitative method that provides a clear methodological framework and a rigorous analytical process (Braun and Clarke, 2022). It applies a holistic approach to the reality under study (Labra et al., 2019) and is well-suited for understanding a series of experiences, thoughts, or behaviours across data sets (Braun and Clarke, 2022). This made thematic analysis ideal for this study, as it allowed for a systematic, in-depth, and critical analysis process to obtain high-level interpretations. Additionally, thematic analysis offers a flexible analytical method for text material that can be applied to various data sets within a coherent framework, including observation data (Labra, et al., 2019). Given the detailed nature of the observation data collected, thematic analysis was also deemed suitable for analysing this data.

Phases of Thematic Analysis

The thematic analysis was an iterative process and it comprises six phases according to Braun and Clarke (2022):

1. Familiarising with the data

There were three main activities at this stage: familiarisation, analytical engagement, and thought-provoking. At the familiarisation stage, the researcher immersed herself in the data by collecting all the data personally, conducting all transcription processes to minimise errors, and participating in the translation process to become deeply engaged and familiar with the entire data set. During the analytical engagement stage, the researcher began to interact critically with the data. After transcribing and translating the interview and observation data, the researcher repeatedly and actively read the transcripts to gain a more comprehensive understanding of the participants' testimonies and their meanings. The initial goal was to grasp the overall depth and breadth of the content. This process involved critical thinking and asking deeper questions about the data to identify potential patterns of meaning. Note-taking was employed to capture initial impressions and analytical insights, whether related to individual data items or the data set as a whole.

In the initial stages of analysis, the supervisory team suggested using manual methods first to allow the researcher to engage deeply with the data and develop skills and sensitivity in analysis. The manual analysis process began with the researcher printing the interview transcripts. Each transcript was then clearly labelled with the participant’s code.

2. Coding

In developing coding, the process was carried out systematically, first working through each data item and then the entire data set. The researcher initially managed the interview data, applying the same process subsequently to the observational data. Given the exploratory nature of this study, an inductive, data-driven (bottom-up) approach was used to guide the process.

Manual Coding

The process began with reading each data item and tagging segments that appeared interesting, relevant, or meaningful to the research questions with a code label. These segments could be words, phrases, sentences, or paragraphs. Codes were generated from each data item using a combination of semantic and latent codes. Segments of data were highlighted with colour to facilitate identification and localisation. A general note was written next to the text to capture initial thoughts before coding it into a meaning unit. The entire dataset was then coded systematically and thoroughly. The code labels were collated, and relevant segments of data were compiled for each code. Segments with

common properties across interview transcripts were marked with the same colour for easy identification. This process was the initial step in organising and transforming data into meaningful categories. The next step involved cutting out all highlighted sections and laying them out on the floor, with each interview transcript clearly labelled for tracking purposes. Once all sections were displayed, the researcher developed a set of broad categories by carefully re-reading and comparing the data items to identify similarities and relationships within and across interview transcripts. This comparison allowed the researcher to think abstractly about data fragments with similar and differing properties, facilitating a thorough examination of information directly related to the interview topics. Each group was then assigned descriptive labels or topic summaries. An example of these categories can be seen in Figure 3.6.

Figure 3.6 Example of Sets of Categories

The results of the manual analysis were reviewed with the supervisory team to obtain feedback. After several consultations, the manual method was deemed sufficient, and the analysis proceeded using NVivo 12.

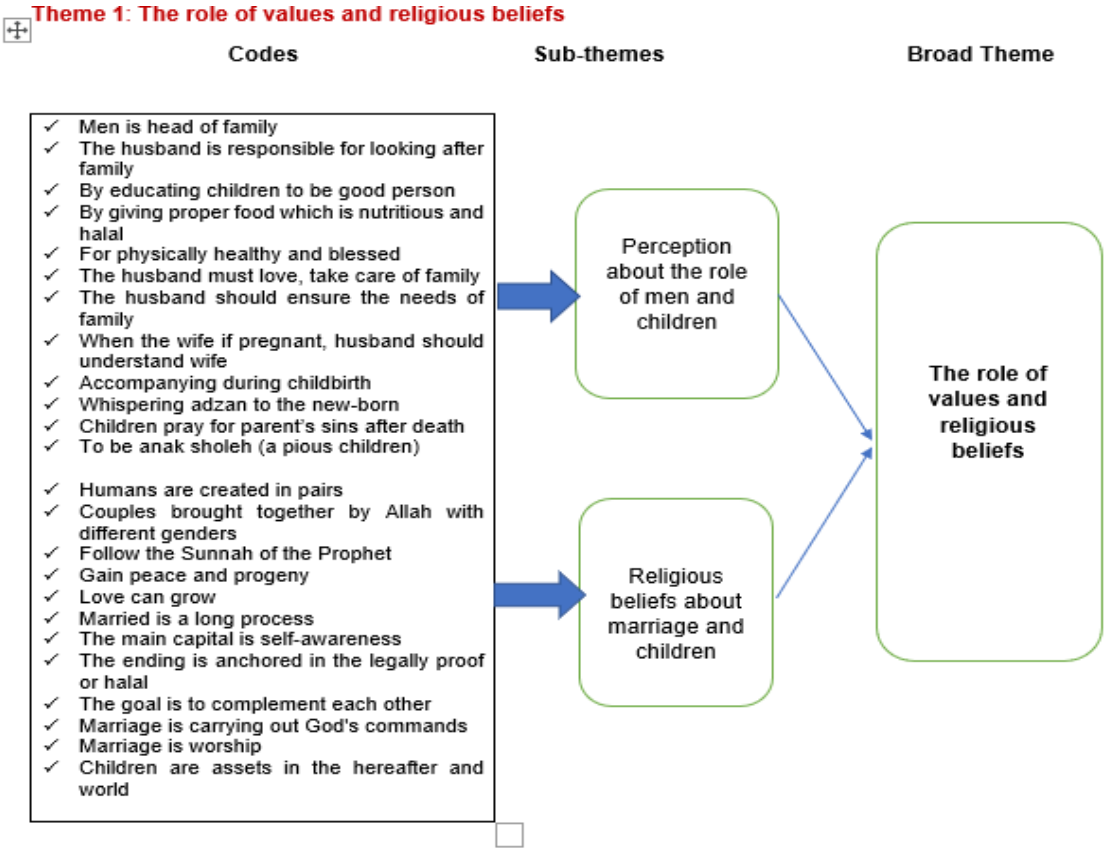
Analysis Using Nvivo 12

Nvivo 12 was utilised in the data analysis process, particularly for developing codes, categories, and themes; and identifying patterns. This process was conducted iteratively, progressively building more complex combinations and groups of codes, while high-level conceptual analysis was performed by the researcher. In this regard, computer aids cannot replace the researcher as the primary data analyst (Yin, 2018).

3. Generating initial themes

In this phase, the primary task was to compile code groups that shared a core idea or concept and were related to the meaningful “answers” to the research questions, with the aim of identifying patterned meanings across the dataset. First, the codes generated during Phase 2 were carefully reviewed to verify their accuracy against the identified data. The correlation between the codes and interview excerpts was then examined, as well as their relevance to the research objectives. Next, sub-themes and categories were identified by clustering all coded information according to concepts, similarities, or patterns. The identified sub-themes were then reviewed and further classified into themes or groups of themes. Finally, the material was scrutinized to identify hierarchical relationships between themes, ensuring a coherent narrative. An example of the process of moving from codes to themes is illustrated in Figure 3.7.

Figure 3.7 The Process of Moving from Codes to Themes



At this stage, the thematic analysis of service user interview data in Case One, initially identified eight themes, while the observation data produced one theme that was similar to one of the interview themes. Additionally, six themes emerged from the service provider interviews.

4. Developing and reviewing themes

In this phase, the focus was on evaluating the suitability of the initial candidate themes in relation to the data and the overall effectiveness of the analysis process. The review involved assessing whether the themes extracted from the codes were plausible. This included verifying whether the themes reflected significant and compelling patterns of shared meaning and whether they highlighted the most salient patterns in the dataset with respect to the research questions. Based on the review results, decisions were made regarding whether candidate themes should be collapsed, split into new themes, retained, or discarded.

Building on the findings from Phase 3, which identified eight themes from service users (seven from interviews and one from observation), several themes were subsequently combined after careful review. This process resulted in a final set of five themes derived from both interview and observation data. The procedure for combining themes from these data sources is detailed in Chapter 4. Meanwhile, the analysis of service provider data yielded four final themes.

5. Refining, defining and naming themes.

At this stage, the theme labels were refined and clearly defined, incorporating some suggestions from the supervisory team. Subsequently, the stories within each theme were reviewed to ensure they accurately represented the overall narrative of the entire dataset.

6. Writing up

In this study, Phase Six was not used because the researcher compiled a PhD thesis rather than a case report.

Analysis of Document Data

Rationale for Selecting the Content Analysis Method for Document Analysis

For the document analysis, the data were intentionally extracted pragmatically and were more descriptive in nature. Consequently, a straightforward analytical method was required to generate meaning units or categories. Content analysis, being the most widely used approach for the qualitative analysis of documents (Bryman, 2016), was deemed the most suitable method for analysing the documentary dataset.

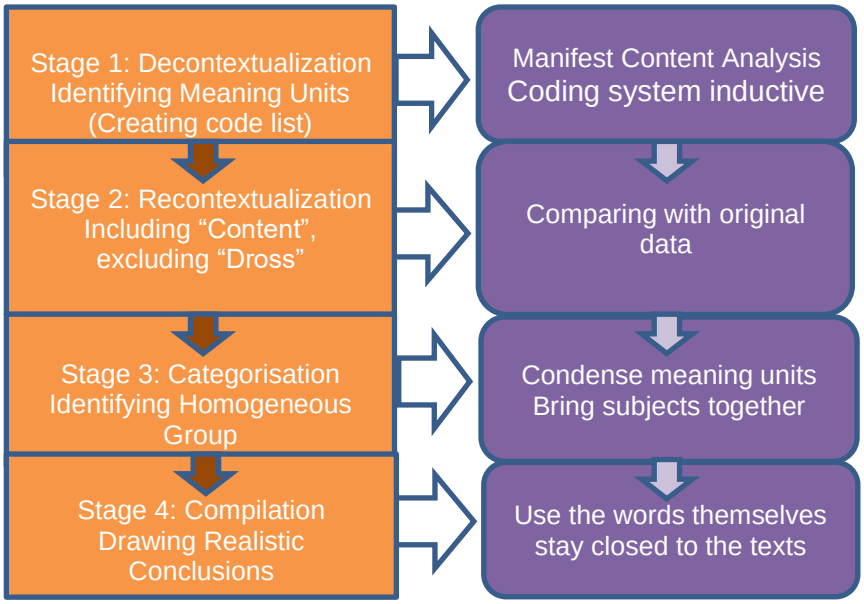
Content analysis comprises two types: manifest analysis and latent analysis (Kleinheksel et al., 2020). Manifest analysis involves describing facts in accordance with the text, using explicit language and focusing on clearly visible elements to develop meaning units

and categories (Kleinheksel et al., 2020). In contrast, latent analysis extends to an interpretive level, aiming to uncover the underlying meaning of the text (Kleinheksel et al., 2020). Given the desired depth of analysis, manifest content analysis was deemed more appropriate for this study as it provided a descriptive account of the data.

Stages of Content Analysis

In contrast to the analysis methods for interviews and observational data, the analysis of documents relied entirely on manual methods. This approach was chosen due to the differing characteristics of the data and the importance of the researcher's engagement with the documents to identify relevant information. Content analysis involves four main stages: decontextualisation, recontextualisation, categorisation, and compilation (Bengtsson, 2016). The stages of manifest content analysis are illustrated in Figure 3.8.

Figure 3.8 Stages of Content Analysis



Stages of Content Analysis

1. Decontextualisation

Initially, the original document was read carefully and repeatedly to obtain the overall meaning. Subsequently, the data was broken down into smaller meaning units, which could range from one or two words to larger segments. Whenever a segment of information deemed meaningful, interesting, and relevant to the research questions was identified, it was marked and extracted from the original document by copying or typing. Each meaning unit was then assigned a code and labelled. This process, known as the "open coding process," employed an inductive approach.

2. Recontextualisation

After identifying the codes, the next step was to ensure that all aspects of the content were covered in relation to the research objectives. This involved repeatedly reading the original text alongside the final list of meaning units. Any irrelevant parts of the text were then reconsidered, ignored, or discarded as necessary.

3. Categorisation

At this stage, each unit of broad meaning was condensed to facilitate the creation of categories. This involved reducing the number of words while retaining the core content of each unit. Similar data was then grouped together to form categories. To ensure robust categorisation, a continuous review of the meaning units was conducted, iterating back and forth between categories.

4. Compilation

In manifest analysis, categories represent the final outcomes of the analysis. During the development of categories, the original wording from the document text was retained to ensure closeness to the original meaning and context. To validate the results and enhance the study's credibility, the supervisory team reviewed the process and assessed its reasonableness. An example of the document analysis process is shown in Table 3.3.

After completing the analysis for each data set (interviews, observations, and documents), the findings from the interview and observation data for each case were consolidated for further analysis, specifically cross-case analysis. The documentary analysis findings were used to shed light on the context (policy and organisation).

3.4.7.2.2 Phase Two: Cross-case Synthesis

Once the within-case analysis process was completed (as detailed in Chapters 4, 5, and 6), the study progressed to cross-case synthesis (see Chapter 7). In this context, cross-case synthesis refers to a specific technique for synthesising findings from multiple case studies, understanding their interrelationships, and drawing overarching conclusions. During this phase, key findings from the analyses of interviews, observations, and document analysis from Case One were synthesised with those from Case Two.

Initially, the researcher had not determined the specific technique for cross-case synthesis. However, as the research progressed, insights into the characteristics of the collected data guided the selection of an appropriate cross-case synthesis method. Since this method was not predetermined, the rationale for its choice is provided in this section, while the detailed analysis process is presented at the beginning of Chapter 7, "Synthesis of All Findings."

The Rationale for Choosing Narrative Synthesis as a Cross-case Technique

Four cross-case analysis methods were considered: comparative qualitative analysis (QCA), cross-case analysis, framework analysis, and narrative analysis. The first method, QCA, developed by Charles Ragin in the 1970s, is designed for analysing multiple cases and complex situations in both quantitative and qualitative research (Pattyn et al., 2019). QCA is suitable for a moderate number of cases, typically between 10 and 50 (Cruzes et al., 2015), and focuses on examining causality—specifically, the extent to which interventions lead to results, including outcomes and impacts (Goodrick, 2020). QCA was not selected for this PhD study as it is more appropriate for research aimed at measuring outcomes. In contrast, this PhD study's objective was to gain an in-depth understanding of the phenomenon under investigation, rather than to measure specific outcomes.

The second method considered was cross-case analysis, a highly systematic approach introduced by Miles and Huberman in 1994. This method facilitates the comparison of similarities and differences across events, activities, and processes (Cruzes et al., 2015). Cross-case analysis enables researchers to identify combinations of factors that may have influenced case outcomes, construct explanations, solve puzzles, and refine concepts (Vaismoradi et al., 2013). Due to its systematic and structured nature, this method requires high analytical skills and is best suited for skilled and experienced researchers.

The framework method, developed by Ritchie and Spencer in the late 1980s for large-scale policy research (Kiernan and Hill, 2018), was also considered. According to Kiernan and Hill, this method is well-suited for thematic analysis of textual data, particularly when comparing themes across multiple cases. It offers clear procedural steps and produces highly structured summaries of data. Consequently, the framework method is especially useful for projects involving multiple researchers, particularly in multidisciplinary teams. However, this method is not purely technical; it is influenced by the researchers' characteristics and disciplinary paradigms. Critical reflection throughout the process is essential for accurately interpreting the matrix and generating explanations. Employing this method would have required advanced skills and potentially more time to complete the analysis.

The final method considered was narrative synthesis, which was developed to synthesise data primarily through the use of words and text to summarise and explain findings. This approach focuses on the overall narrative and the organisation of narrative construction and features (Popay et al., 2006). Narrative synthesis is versatile, applicable to a wide range of research designs, including case studies, and is suitable for

addressing various research questions (Popay et al., 2006).

Based on the general summary above, both cross-case analysis methods and frameworks were considered. However, the researcher was inclined towards a more flexible method that could adapt to the diverse characteristics of the data. Therefore, a flexible analytical method that allows for synthesising findings from various sources was preferred. Narrative synthesis was chosen for its ability to summarise and explain findings while integrating diverse evidence from multiple sources (interviews, observations, and documents) across two cases by identifying patterns and themes.

3.4.7.2.3 Phase Three: Overall Synthesis

The final phase of data analysis involved overall synthesis. This process entailed consolidating key findings from both cases to formulate a comprehensive conclusion (Yin, 2018).

3.5 Rigor of the Research and Ethical Issue

To produce meaningful and useful results for various stakeholders, the study was conducted rigorously and methodically to meet the criteria for trustworthiness (Ahmed, 2024):

1. Credibility

Credibility reflects the degree of accuracy of findings (Haq et al., 2023). To ensure the credibility of this PhD study, several strategies were employed. Firstly, the researcher engaged in a prolonged immersion of two weeks at the study site to gain a thorough understanding of the culture and research context, while adhering to COVID-19 safety restrictions. Secondly, trust and rapport were consistently built with participants to gain deeper insights into their behaviours and experiences. Thirdly, a triangulation approach was used in data collection, incorporating interviews, observations, and document analysis to enhance the accuracy of the information gathered. Additionally, the researcher's reflexivity throughout the research process contributed to maintaining objectivity.

2. Transferability

Transferability pertains to the extent to which findings can be applied to other contexts (Haq et al., 2023). To improve transferability, comprehensive contextual information about the target group/participants, including contextual background and demographic details, was provided. This allows readers to evaluate and, where feasible, replicate the findings in their own settings. The sampling technique, recruitment process, and

approach used were thoroughly explained to aid readers in assessing the potential applicability of the findings to similar populations beyond the study setting.

3. Dependability

Dependability refers to the consistency and stability of research findings over time (Haq et al., 2023). This study employed two strategies to enhance dependability. First, detailed research procedures and all decisions made were documented and explained, with justifications provided in the report. This ensures transparency and allows others to replicate the study by understanding the rationale behind each decision. Second, all research documents were managed systematically, with meticulous records kept of every decision made, including deviations from the original plan and changes in analysis methods. This approach facilitates transparency and traceability throughout the research process.

4. Confirmability

Confirmability ensures that the findings are free from researcher influence and bias, reflecting impartiality and objectivity (Haq et al., 2023). To enhance confirmability, several strategies were employed. First, feedback was sought from the supervisory team, who are experienced and experts in qualitative research. Their input was crucial for validating interpretations and minimising personal bias, thus increasing the objectivity and accuracy of the findings. Additionally, the researcher maintained a detailed record of personal reflections to further enhance transparency.

Ethical Issues

Ethical clearance was obtained from two institutions: The School of Healthcare Research Ethics Committee (SHREC) at the University of Leeds (HREC 2022) and the Ethics Committee of the Faculty of Medicine at Muhammadiyah University of Surakarta, Indonesia (3772/B.1/KEPK-FKUMS/X/2021).

Three ethical principles were upheld to ensure high ethical standards:

1. Justice and Autonomy

Justice is defined as treating research participants fairly, equitably, and appropriately (Berkovic, 2023). Autonomy refers to the right to self-determination. To uphold these principles, all potential participants were provided with detailed information about the study and their participation, ensuring well-informed decision-making. For the recruitment of health professionals, the Head of Puskesmas assisted in identifying eligible candidates based on the inclusion criteria set by the researcher. Subsequently, the researcher approached these candidates and distributed the study materials

(invitation letter and Participant Information Sheet). This process minimised the potential for coercion, as interested health professionals voluntarily contacted the researcher directly. Recruitment of service users involved the health professionals and the Head of the Religious Affairs Office to increase the likelihood of reaching a sufficient number of participants. For service users expressing interest in the study, the researcher directly confirmed their willingness to participate. All participants who voluntarily agreed to participate signed an informed consent form. Throughout the study process, all participants were treated fairly and their dignity and integrity were respected.

2. Benefits and Non-maleficence

The nature of the research activities posed no inherent risk or harm to either the researcher or the participants. However, given that data collection took place during the COVID-19 pandemic, there was a potential health risk for both parties. To mitigate the risk of contracting or transmitting the virus, all data collection activities adhered to relevant restrictions and safety protocols. This included conducting a thorough fieldwork risk assessment and implementing the mitigation measures outlined in the 'Fieldwork Procedures during COVID-19' and 'COVID-19 Fieldwork Guidance' documents. The risk assessment practices were guided by the University of Leeds's policy on fieldwork organisation. In Indonesia, where the data collection occurred, the research adhered to the health protocols issued by the Indonesian Government, specifically Regulation Number 1 of 2021 concerning Restrictions on Activities to Control the Spread of COVID-19.

Participants may not experience direct benefits from their involvement in the short or medium term. None of the participants received payments, fees, reimbursements, or other incentives. However, they may gain satisfaction from sharing their opinions and stories, which could provide a sense of contribution and significance. The PhD study's findings have the potential to advance scientific knowledge and practice by offering an in-depth understanding of PPCC services, identifying training needs, and highlighting opportunities for future research and interventions. Upon completion of the study, a summary of the findings will be provided to relevant parties, including participants, institutions, local government, and involved organisations. This summary aims to inform and enhance the implementation of PPCC services.

3. Privacy and Confidentiality

Data management in this study adhered to the 2018 Data Protection Act (DPA). Initially, the data were classified into categories: unclassified, confidential, and highly confidential, to determine the appropriate storage procedures. The storage and use of research data complied with the University's Code of Practice on Data Protection and the Information

Protection Policy. To protect participants' personal data, all information was stored securely and anonymously on the M-Drive at the University of Leeds, protected by a password. Anonymisation involves removing identifiable details such as names, addresses, and postcodes. A consistent file naming system and an organised folder structure facilitated easy retrieval, with meaningful but concise names used to classify files. Backup copies of files were regularly made, and a master list was maintained to track and identify specific information.

All hard copies of documents, including consent to contact forms, informed consent forms, and participant information sheets, were temporarily stored in a locked cabinet in the UMS office in Indonesia. These documents were subsequently scanned and securely stored on the M-Drive at the University of Leeds, with access restricted to the lead researcher via a password. After scanning, the physical documents were permanently destroyed. Informed consent forms and participants' contact details were kept separate from the research data.

Interviews with participants were recorded in encrypted MP4 audio format and subsequently transcribed. The audio files were stored on the M-Drive until transcription was complete and then permanently deleted. These files were not shared with any third parties. Field notes, which were extracted, organised, and stored on the M-Drive, were used to supplement findings or provide additional insights during observation sessions. For analysis, after obtaining permission from the Head of the Puskesmas or participants, relevant information was extracted and stored on the M-Drive. Interview transcripts, with all participant identities removed, were shared with the supervisory team (Professors McGowan and Hirst, and Dr Fu) for verification and analysis. The professional translator, who was provided access to anonymised interview transcripts for the translation process, signed a confidentiality agreement pledging to respect the confidentiality of the data and to use it solely for the agreed purpose.

Images were taken as part of the documentary analysis if the documents were not publicly available. Only the supervisory team and the researcher had access to the images, and any identifiable information was reducted. The images were taken with the researcher's mobile phone, which had been encrypted. The files were then sent to the researcher's university email. Then, the images were downloaded and stored in the M-Drive as research data. The research data was stored for two years after final publication.

3.6 Summary Methodology and Research Methods Used

Summary Box
✓ This study adopted the philosophy of interpretivism. ✓ A qualitative comparative case study design was employed as the overarching research design. ✓ The comparative case study was selected for its appropriateness in addressing the research objectives and its capacity to offer a robust logical framework for identifying emerging patterns and interpreting the data. ✓ Cases were chosen using a pragmatic approach. ✓ Research participants were selected purposively. ✓ Data was obtained by means of in-depth interviews, observation, and relevant documentation. ✓ Thematic and content analysis were used to analyze data within individual cases, and narrative synthesis was used for cross-case analysis to produce an overall synthesis of all cases. ✓ The entire study was conducted meticulously, with a strong emphasis on adhering to research ethics throughout data collection, processing, and reporting.

3.7 Chapter Conclusion

To summarise, the findings from the Chapter 2 Scoping Review offered valuable insights for developing the research design. Chapter 3 provides a comprehensive explanation of the specific methods used in this PhD study, including the case selection, participants's recruitment, data collection processes and analysis, data management.

The next chapter presents the findings from Case One: Melati Puskesmas.

Chapter 4 Findings from Case One: Melati Puskesmas

4.1 Introduction

This chapter presents the findings from the thematic analysis (interview and observational data) and content analysis (documents) of Case One, focusing on the implementation of PPCC services at Melati Puskesmas (a primary health centre). It begins with a brief overview of the study setting and participant characteristics before providing the detailed findings. This chapter consists of the themes and interpretations that emerged from interviews and observations. These themes were identified through a systematic analysis of the collected data. The process of thematic analysis, including the integration of interview and observation data, is explained prior to presenting the thematic structure. Each theme and sub-theme is described in detail, supported by relevant quotations from participants to illustrate their experiences and reflections related to PPCC services. Additionally, some observational data are narratively presented in text boxes to further elucidate the implementation of premarital preconception care services in the study setting. The findings of a descriptive analysis of documents used at Melati Puskesmas are then presented. At the end of this chapter, a conclusion and summary of the key findings is provided.

4.2 Research Setting: Melati Puskesmas

The description of Melati Puskesmas is based on information from the 2021 Kenanga Puskesmas Profile document. Melati Puskesmas is one of twelve primary health centres in Makmur District, covering an area of 30 km², making it the largest in the district. It is located in an urban area close to trade and shopping centres. Due to its strategic location, many newcomers have settled in the area, resulting in a diverse population in terms of age, ethnicity, religion, and gender. In 2021, Melati Puskesmas provided health services to 14 villages with a total population of 120,713, most of whom are Javanese.

4.3 Characteristics of Participants

This chapter reports the results of the recruitment process, beginning with an overview of the number of participants who received information, those who expressed interest, and those who were ultimately recruited in both cases. Detailed information about the characteristics of service users and providers for each case is presented in Chapter 4

for Case One and Chapter 5 for Case Two.

4.3.1 Overview of the Result of Recruitment of Participants from Service Users in Both Cases

The participants from service users differed between the two cases. At Melati Puskesmas, all participants were couples, whereas at Kenanga Puskesmas, participants included both women and couples. This distinction arose because Melati Puskesmas services involved couples, while Kenanga Puskesmas focused solely on women. At Melati Puskesmas, information was provided to 10 couples, of whom seven expressed interest in participating in the interview and observation of the premarital health check-up. Ultimately, the first five willing couples were interviewed and observed. In contrast, at Kenanga Puskesmas, information was given to five couples and five women. Four couples and three women showed interest in participating. Since the service did not involve men, the researcher approached potential male participants with the consent of their female partners. In the end, three couples and two women were interviewed and observed, while the others faced challenges such as scheduling conflicts and busy schedules. Overall, 18 service user participants were involved in the interviews and observations of the premarital health check-up: 10 from Melati Puskesmas and eight from Kenanga Puskesmas. The researcher conducted five observations at each Puskesmas; however, only one observation was reported in detail, with reflections on the remaining observations provided to supplement the information.

For the observations of ‘Kelas Catin’, service users participated at Melati Puskesmas over two observation sessions. Although the researcher conducted two observations, only one event was reported in detail, with reflections from both sessions included. Observations of ‘Kelas Catin’ at Kenanga Puskesmas were not conducted as the service was temporarily suspended due to the COVID-19 pandemic. Overall, 93 participants were involved in interviews and observations across both cases.

For individuals who expressed willingness to participate but were not ultimately included, the researcher thanked them and informed them via WhatsApp that the required number of participants had been reached. A summary of the service user participants in both cases is presented in Table 4.1.

Table 4.1 Summary of Participants from Service users in Both Cases

Participants	Puskesmas Melati	Puskesmas Kenanga	Total in both cases
Interview	10	8	**18**
Observation			
'Kelas Catin'	57	0	**57**
Premarital Health Check-up	5 couples (10 people)	3 couples, 2 women (8 people)	**18**
Total	77	16	**93**

4.3.2 Overview of the Result of Recruitment of Participants from Service Providers in Both Cases

In both cases, a total of 29 service providers were involved, consisting of health professionals and the Heads of the Islamic Religious Affairs Offices. The recruitment process for health professionals was relatively straightforward, as everyone welcomed and supported the research. At Melati Puskesmas, seven health professionals met the inclusion criteria and all agreed to be interviewed. Similarly, at Kenanga Puskesmas, eight health professionals met the inclusion criteria and all agreed to be interviewed. Additionally, the Heads of the Islamic Religious Affairs Offices from Melati and Kenanga Districts were included as participants. In total, there were 17 service provider participants: eight from Melati Puskesmas and nine from Kenanga Puskesmas. For observations, five of the seven health professionals interviewed at Melati Puskesmas agreed to participate, and five health professionals at Kenanga Puskesmas also agreed. A summary of service provider participants in both cases is presented in Table 4.2.

Table 4.2 Summary of Participants from Service Providers in Both Cases

Participants	Puskesmas Melati	Puskesmas Kenanga	Total in both cases
Interview	8	9	**17**
Observation	2 'Kelas Catin' & 5 premarital health check-up	5 premarital health check-ups	**12**
Total	**15**	**14**	**29**

4.3.3 Participant Characteristics of Service Users in Case One

At Melati Puskesmas, there were ten service user participants consisting of five couples (five men and five women). All couples participated in both interview and observation of premarital health check-ups. The couples' ages ranged from 22 to 34 years. Six participants had a degree or equivalent, while the others had a high school education. The participants worked in various jobs, including private employees and teachers, with

some being unemployed. All participants were Muslim and of Javanese ethnicity. Regarding access to the services, three couples had accessed both the 'Kelas Catin' and the premarital health check-up. One couple had attended the Premarital Guidance Course organised by the local Religious Affairs Office. Another couple only accessed the premarital health check-up because they did not receive an invitation to attend either the 'Kelas Catin' or the Premarital Guidance Course. Table 4.3 illustrates the characteristics of the service user participants who took part in the interview.

Table 4.3 Profile of the Service Users Participants

Couple	Pseudonym/Age	Gender	Education	Job	Religion	Accessed Services
Couple 1	Santosa (35)	Male	Senior High School	Private employee	Islam/ Javanese	'Kelas Catin' & Health Check-up
	Santi (23)	Female	Senior High School	unemployed	Islam/ Javanese	'Kelas Catin' & Health Check-up
Couple 2	Fariz (22)	Male	Bachelor	Teacher	Islam/ Javanese	'Kelas Catin' & Health Check-up
	Winta (22)	Female	Diploma	Self-employee	Islam/ Javanese	'Kelas Catin' & Health Check-up
Couple 3	Toni (24)	Male	Bachelor	Self-employee	Islam/ Javanese	'Kelas Catin' & Health Check-up
	Luna (23)	Female	Senior High School	Private employee	Islam/ Javanese	'Kelas Catin' & Health Check-up
Couple 4	Nanang (25)	Male	Senior High School	Teacher	Islam/ Javanese	Premarital Guidance Course & Health Check-up
	Hartatik (25)	Female	Bachelor	Unemployed	Islam/ Javanese	Premarital Guidance Course & Health Check-up
Couple 5	Hari (34)	Male	Diploma	Private employee	Islam/Javanese	Health Check-up
	Rani (33)	Female	Diploma	Private employee	Islam/Javanese	Health Check-up

The characteristics of the service provider participants are presented in the next section.

4.3.4 Participant Characteristics of Service Providers in Case One

A total of eight service providers were interviewed voluntarily including seven health professionals and one Head of Religious Affairs with five practitioners participated in the observation. The participants were aged between 42 and 53 years. All participants were Muslim; seven were female. Their educational backgrounds ranged from a Diploma (level three) to a Bachelor's degree. Among the health professionals, six were midwives and one was a doctor. The health professionals included three managers and four practitioners, all of whom were involved in the PPCC services, either in the 'Kelas Catin' or the premarital health check-up. In the Indonesian education system, after completing

high school, individuals can pursue undergraduate education, which includes Diploma 1, 2, or 3, or a Bachelor's degree. In the Midwife Education System, Diploma 3 is the lowest level. Table 4.4 presents the profile of the service provider participants.

Table 4.4 Profile of the Service Provider Participants

No	Pseudonym/ Age	Gender	Education	Qualification	Roles
1.	Tutik (44)	Female	Diploma 3	Midwife	Manager 1
2.	Titik (44)	Female	Diploma 3	Midwife	Practitioner 1
3.	Sari (42)	Female	Diploma 4	Midwife	Manager 2
4.	Surti (42)	Female	Diploma 4	Midwife	Practitioner 2
5.	Siti (48)	Female	Bachelor	Doctor	Manager 3
6.	Fatma (46)	Female	Diploma 3	Midwife	Practitioner 3
7.	Mirna (44)	Female	Diploma 3	Midwife	Practitioner 4
8.	Hasan (53)	Male	Bachelor	Religious scholar	Head of Religious Affairs in Melati

The following section presents the findings from Case One presented sequentially theme by theme.

4.4 Themes from Case One: Melati Puskesmas

The findings in this chapter are based on a thematic analysis of data from interviews and observations. The presentation begins with a table of themes and sub-themes. These themes are organised into two categories: those from the service users (female, male, and couples) and those from the service providers (health professionals: managers and practitioners, and the Head of the Religious Affairs Office).

4.4.1 Themes from the Service User Participants

The thematic analysis of interview data and observations yielded five themes, each with two sub-themes. Table 4.5 provides detailed information on the themes and sub-themes from the service users in Case One.

Table 4.5 Themes and Sub-themes from the Service Users

Themes	Sub-themes
1. Knowledge and understanding about PPCC services	1.1. Initial knowledge about PPCC services
	1.2. Knowledge gained after experiencing PPCC services
2. Response to PPCC services	2.1. Response to the physical setting of service
	2.2. Response to the service of delivery

3. Perceived benefits of PPCC services	3.1. Perceived benefits by women
	3.2. Perceived benefits by men
4. Couple's aspirational needs	4.1. Perceived facilitators
	4.2. Perceived barriers
5. Role of social-cultural and religious beliefs	5.1. Role of social-cultural beliefs
	5.2. Role of religious beliefs

Each theme and sub-theme were described based on participants' reflections on their experiences with the provision and reception of PPCC services.

4.4.1.1. Theme 1: Knowledge and Understanding about PPCC Services

This theme focuses on the couples' knowledge about the PPCC services before and after accessing them. It reveals that, prior to accessing the service, most couples had insufficient knowledge about PPCC services, likely due to a lack of information. However, couples who attended the 'Kelas Catin' or the 'Premarital Guidance Course' were better informed and more knowledgeable about various health and religious topics.

4.4.1.1.1 Sub-theme 1: Initial Knowledge about PPCC Services

Initially, most participants reported being unaware of the PPCC services and did not understand the current policy regulating preconception health services for couples preparing for marriage. This is reflected in Hartatik's statement:

> *"I did not know that there was a medical examination. I thought it was only a Tetanus Toxoid (TT) injection because my sister said before getting married, I had to go to the Puskesmas for a TT injection. But there was a health check and a lab examination as well." (Hartatik, 25, Female, Couple 4)*

The participants' unawareness of the PPCC services was due to their belief that they had never received any prior information about these services from any source.

> *"Never (never receive information about 'Kelas Catin'). I also had never received information about the health check-up." (Fariz, 22, Male, Couple 2)*

> *"I have not received any information from anywhere." (Rani, 33, Female, Couple 5)*

In addition, all participants mentioned that the only information they received from the Village Official, known as 'Mudin', was related to the administrative process of applying for marriage. The Mudin is a Village Official responsible for managing religious matters in Islam, including marriage, death, and birth at the village level.

> *"When I went to (the) Kelurahan (office), I received the information from Mudin about the required documents for my marriage, but not about the PPCC*

services." (Santi, 23, Female, Couple 1)

Meanwhile, Toni noted that he had received superficial information about the PPCC services from his family and friends, lacking any detail about their essence.

> *"I have heard from my friends and parents. They said that if you want to get married, you have to check your health first and then get the TT injection at the Puskesmas." (Luna,23, Female, Couple 3)*

Most participants disclosed that they did not fully understand the purpose and benefits of the PPCC services. Fariz's quote below illustrates that his positive attitude towards the PPCC services was not based on a comprehensive understanding but rather on a general trust in their usefulness.

> *"I think it's important (PPCC). Although I do not know why it is important, I am sure there must be something useful." (Fariz, 22, Male, Couple 2)*

The couple's decision to access PPCC services was primarily driven by external motivation, with some personal factors also playing a role. Santi and Santosa's statements illustrate this:

> *"I attended 'Kelas Catin' because of directions from Mr Mudin. I also wanted to find out information related to pregnancy preparation too. Regarding the health check, I want to make sure that I did not have any health issues. So that I would feel safe." (Santi, 23, Female, Couple 1)*

> *"I took part in this program to get a health certificate, which, according to Mr Mudin's statement, is one of the requirements that must be met for marriage arrangements. Health check-up is also needed to find out whether we are healthy or not." (Santosa, 35, Male, Partner 1)*

Santi and Santosa's statements suggest that their main motivation for accessing PPCC services was to fulfil the requirements for marriage. Additionally, while both believed the health check-up was necessary, Santi appeared specifically concerned about her future role as a mother, prompting her to seek knowledge about pregnancy preparation. In contrast, Santosa seemed more focused on the current health of the couple.

Interviews with several couples revealed that not all couples received the same PPCC services, particularly with regard to the 'Kelas Catin' service. Some couples attended the 'Kelas Catin', while others participated in the 'Marriage Guidance Course', a similar programme organised and funded by the Ministry of Religion. Nanang and Hartatik, for instance, did not receive the 'Kelas Catin' service but attended the Premarital Guidance Course.

> *"For me… because the religious affairs staff said that we (couples) have to attend the premarital guidance course. On the invitation, it was written mandatory. It means we have to come because it may be important." (Hartatik, 25, Female,*

Couple 4)

“The officer said we have to come. That was what made us attend the event.” (Nanang, 25, Male, Couple 4)

The motivation for attending the Premarital Guidance Course appears similar to that for the ‘Kelas Catin’. Nanang and Hartatik's statements suggest that their participation was not driven by an understanding of the course's importance, but rather by pressure from officials at the Office of Religious Affairs and the requirement to complete it before marriage.

4.4.1.1.2 Sub-theme 2: Knowledge Gained after Experiencing the PPCC Services

Initially, nearly all participants reported a lack of understanding regarding the importance of the PPCC services. However, following their engagement with these services, their responses varied, with some demonstrating improved knowledge.

Couples who attended ‘Kelas Catin’ noted that the information provided significantly enhanced their understanding of the PPCC services' purpose and benefits. One male participant shared his experience:

“It was only after attending ‘Kelas Catin’ that I realised the importance of having a health check-up before marriage. From ‘Kelas Catin’, I now understand and have an idea of how to deal with what happens when my wife becomes pregnant.” (Santosa, 35, Male, Couple 1)

Similarly, Nanang expressed that his understanding of the PPCC services' importance improved after attending the Premarital Guidance Course:

“Then when attending the course on Premarital Guidance, the speakers explained the primary reason why prospective brides and grooms need to undergo a health check at the Puskesmas." (Nanang, 25, Male, Couple 4)

Participants who did not attend ‘Kelas Catin’ or the Premarital Guidance Course expressed continued uncertainty about the nature of the PPCC services, even after accessing them. Rani and Hari's statements illustrate this:

“Maybe to find out if there is a pregnancy and (to check) our health conditions (purpose of the health check).” (Rani, 33, Female, Couple 5)

“As for the purpose and understanding of this examination… I am a ‘cuek person’ (‘cuek’ is a Javanese term which means not caring]. So, if the conditions are to have health checks and immunisations, go for it. The important thing is that the conditions for marriage can be met.” (Hari, 34, Male, Couple 5)

Rani's statement suggests she was merely speculating about the PPCC services' objectives, leaving her with a sense of uncertainty. In contrast, Hari's pragmatic approach

indicated that, as long as the requirements for marriage were met, he was less concerned with gaining further knowledge or understanding. This suggests that participants who do not understand the main purpose of PPCC services tend to be less motivated and less confident about the service.

4.4.1.2. Theme 2: Response to PPCC Services

This theme examines service users' experiences with the PPCC services, focusing on their responses and reflections concerning the physical setting and service delivery. Overall, most participants viewed the 'Kelas Catin' service positively, though some criticised the structured, speaker-focused approach as inappropriate, suggesting that the service was delivered in a didactic manner. Opinions about the premarital health check-up service varied, particularly concerning the skills and attitudes of health providers. While some participants were satisfied, others were not. Common concerns included an uncomfortable environment, the negative attitudes and perceived incompetence of health professionals, inconsistent inclusion of men, readiness of health professionals to work with couples, and the adequacy of premarital health check-ups, and personal costs. Additionally, the findings indicate that couples did not have equal access to PPCC services.

4.4.1.2.1 Sub-theme 1: Response to the Physical Setting of Service

This sub-theme presents findings on couples' responses to the PPCC services, beginning with the 'Kelas Catin' service and subsequently covering the premarital health check-up service.

Response to the physical setting of 'Kelas Catin'

Regarding the 'Kelas Catin' service venue, most participants expressed satisfaction with the location and facilities. Santosa remarked:

> *"Kelas Catin' venue was very convenient. The hall was big, comfortable because there was AC (Air Conditioning), then... there were lots of supporting equipment such as loudspeaker, power point, we got hand out and there were snacks and drink too, it's good ha ha...". (Santosa, 35, Male, Couple 1).*

This initial positive impression likely stemmed from the comfortable room size and the well-equipped environment. In Indonesia, where the climate is typically hot, air conditioning is considered a significant comfort.

However, some participants found the physical layout of the room unhelpful. Toni commented:

> *"For Kelas Catin, I do not think the atmosphere is joyful. It's too serious (the layout*

of the room).” (Toni, 24, Male, Couple 3)

These interview findings were supported by observations of the room where ‘Kelas Catin’ was conducted.

Observation:

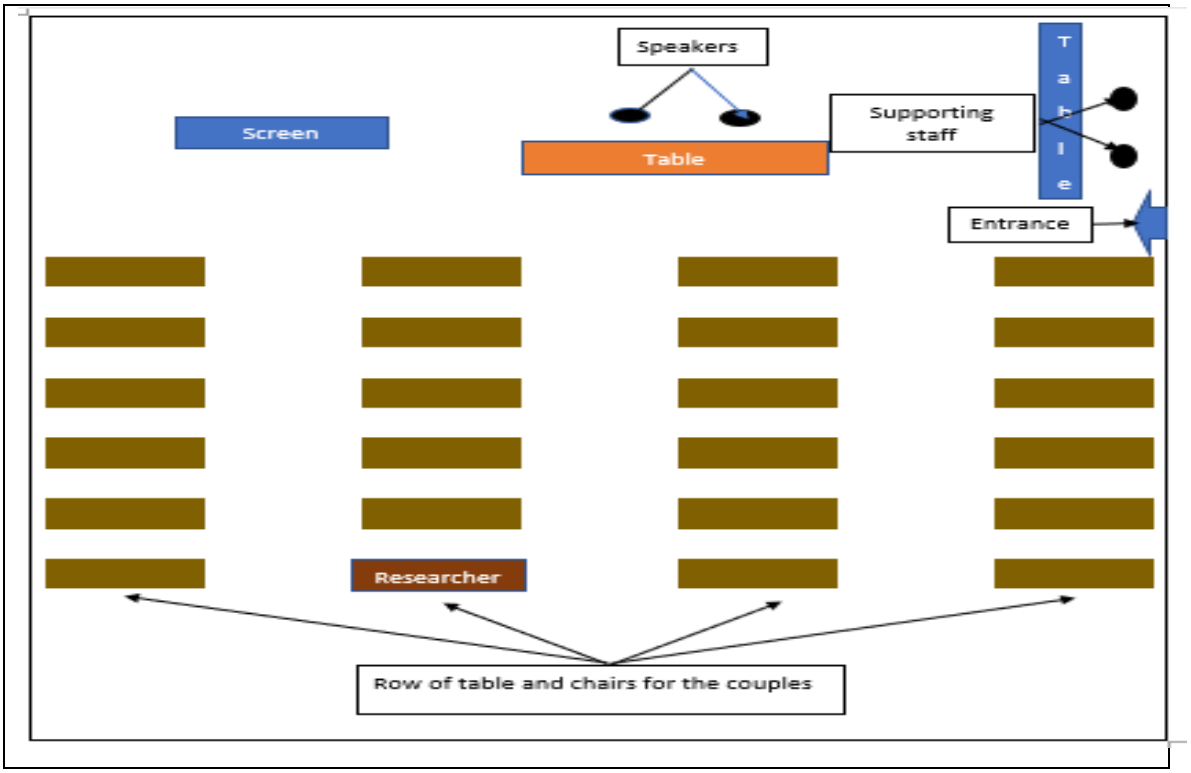
Name of service: Kelas Catin

Date and Time: November 2021 (specific date and time recorded and anonymised)

Venue: The hall of the Melati Puskesmas

The hall, measuring 10x6 metres, could accommodate approximately 50 people. It was equipped with air conditioning, a loudspeaker, an LCD monitor, tables, chairs, a projector screen, a laptop, and hand sanitiser. The room was set up in a meeting format, with seats arranged in rows facing the speakers, who sat at the front. Couples were seated side by side. The layout of the room for ‘Kelas Catin’ services can be seen in Figure 4.1.

Figure 4.1 The Hall Layout of the Melati Puskesmas



Based on interview and observation data, the location of the ‘Kelas Catin’ service was deemed satisfactory in terms of room size and supporting facilities. However, the physical layout was considered less conducive to encouraging interaction and discussion. The arrangement of seats, with small rows of tables and chairs aligned end-to-end facing one direction, resembled a formal meeting room rather than a flexible,

interactive setup.

Response to the physical Setting of Health Check-up Room

Most participants found the room for the premarital health check-up service to be physically and psychologically uncomfortable. They described it as narrow and crowded with many health professionals.

> *“The room (for health check-ups) is too narrow. (Toni, 24, Male, Couple 3)*

> *“The current problem (health check-up room) is that there are too many people in the room.” (Winta, 22, Female, Couple 2)*

There were also privacy and confidentiality concerns. Participants felt insecure with the delivery of the service, preferring a more personalised approach. Additionally, they were disturbed by the noise from health providers interacting with each other, which made it difficult to concentrate during counselling sessions.

> *“The health examination should be conducted one by one until the subsequent patient is called [‘patient’ is a local term for persons who access health services]. Then, during counselling, other practitioners should not speak too loudly because it made us difficult to focus.” (Toni, 24, Male, Couple 3)*

Participants also expressed regret that there was no dedicated counselling room. Nanang emphasised that a private room would not only ensure privacy but also provide a conducive environment for meeting couples' individual needs, encouraging interaction, discussion, and questions within adequate time.

> *"I think the counselling room should be separate, so that we do not feel rushed, and the counselling time should be adjusted according to the needs of each couple. Every couple has different problems; some may need more time and opportunities to discuss and ask questions." (Nanang, 25, Male, Couple 4)*

To illustrate the room layout, the researcher made field notes and a manual sketch during observations, which was later re-sketched using Word.

Observation:

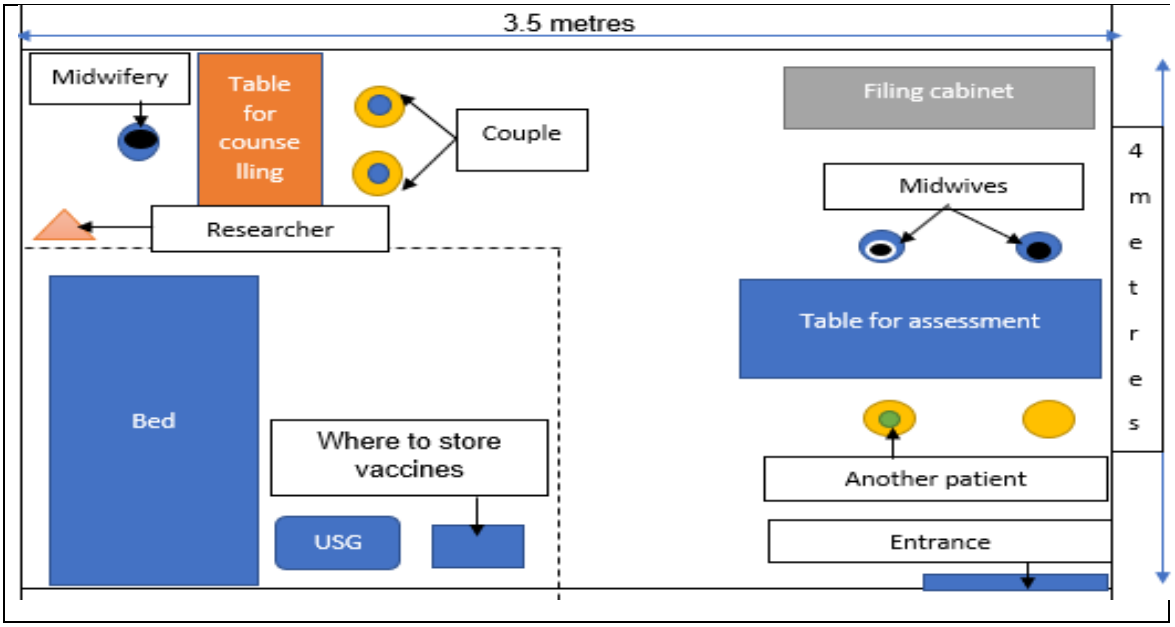
Name of service: Premarital Health Check-up

Date and time: November 2021.

The premarital health check-up services were conducted within the Maternal and Child Health Clinic. However, the examination room was shared with the pregnant women's check-up and contraception services. This room measured 4x3.5 meters and contained two tables. One table, used for assessments, measured 155x65x75 cm and was equipped with two chairs. The other table, used for counselling, measured 90x50x75 cm and had one chair for the midwife and two chairs for the couple. There was also a cubicle with a bed for physical examinations, measuring 185x70x70 cm, which was equipped

with a curtain. The cubicle contained ultrasound equipment, spotlights, a vaccine storage unit, tools for measuring vital signs, height, weight, and anthropometry. Additionally, a filing cabinet was located in another corner of the room. The room was used to conduct health check-ups, including assessment, physical examination, TT vaccination, and counselling sessions. The layout of the room for premarital health check-up services can be seen in Figure 4.2.

Figure 4.2 The Examination Room at Melati Puskesmas



Based on the findings from interviews, supplemented by observational data, it was apparent that the physical layout and atmosphere of the room were not conducive to counselling. The presence of other people in a narrow space compromised privacy and confidentiality, which could prevent couples from opening up due to a lack of trust.

4.4.1.2.2 Sub-theme 2: Response to the Service Delivery

This sub-theme describes couples' responses to the delivery of the 'Kelas Catin' service, the Premarital Guidance Course, and the health check-up they received.

Response to the Service Delivery of 'Kelas Catin'

Findings from theme one indicate that not all couples received the 'Kelas Catin' service or the Premarital Guidance Course.

Participants who receive the 'Kelas Catin' service expressed their experiences as follows:

"Kelas Catin gave me an amazing experience (smiles). From there I received a

lot of health-related information I need, which was delivered directly by the experts such as doctors and midwives, so the information can be trusted." (Santi, 23, Female, Couple 1)

"Yes, I completely agree. I learned a lot about health. Although I have previously been married, I have never received direct information from doctors and midwives regarding health issues, whose information is accurate." (Santosa, 35, Male, Couple 1).

Santi and Santosa expressed satisfaction with the 'Kelas Catin' service, which provided them with essential health information delivered by experts, ensuring its accuracy and reliability. Toni, despite being in his second marriage, gained new knowledge about the importance of couples' health preparations from the 'Kelas Catin.' He found the information highly valuable as it helped him understand the significance of health before conception.

"I got information that I had never known before, and it was good for preparation before marriage. Then, in my opinion, the information about health conveyed is very useful, such as how we take care of health, including reproductive health for both men and women." (Toni, 24, Male, Couple 3)

For those who attended the Premarital Guidance Course, such as Nanang and Hartatik, both had distinct impressions. Nanang was surprised by the number of attending couples, which is smaller than expected. He suggested that factors such as inappropriate timing, work commitments, or reluctance to incur indirect costs like transportation fees might cause absences. He recommended that organisers use various methods to increase couples' motivation, such as providing incentives and reimbursing transportation costs. Similarly, Hartatik expressed concerns about the timing, particularly the course's duration, which she found excessively long.

"For the seminar, it turned out that only half the couples attended. It is better not to hold the seminar on working days and hours. For example, on Saturday or Sunday or evening. So, it depends on the seminar committee how to motivate the couple to attend. For example, by giving transportation fare, or door prizes." (Nanang, 25, Male, Couple 4)

"I agree about the incentive. The material (topics delivered) is good and complete, but it's taking too long. Because it was from 8 am to 2 pm for two days. Maybe it could be briefer." (Hartatik, 25, Female, Couple 4)

Although the 'Kelas Catin' service was generally considered good by most participants, some expressed concerns about the delivery method and atmosphere. Toni suggested that the method should be more interactive and flexible, creating a more engaging environment that encourages discussion and questions.

"If 'Kelas Catin' could have been made more exciting and interactive, I am sure, many people would have wanted to ask questions since the topic is exciting and

important. However, because the atmosphere is so serious, they might be afraid or reluctant to ask questions." (Toni, 24, Male, Couple 3)

To supplement the interview findings, the field note below provides an illustration of how 'Kelas Catin' is delivered as part of the routine service at Melati Puskesmas.

Observation:

Name of service: Kelas Catin

Date and Time: November 2021.

Venue: The hall of the Melati Puskesmas

Number of people attend: 24 peoples (8 couples, 8 persons without their patrner)

At 8 am, couples began arriving at the hall. A support staff member was stationed near the entrance to distribute handouts, boxed snacks, and drinks. Couples then signed the attendance list, providing their names, village of residence, and signatures. Inside the room, the speaker instructed the couples to download the "KesCatin" application on their phones while waiting for everyone to arrive. At 8:45 am, the event commenced with the speaker outlining the itinerary. Before starting, the speaker informed participants: "During the presentation of the material, if you have any questions, please hold your questions until the designated Q&A session later in the presentation."

The event continued with a brief introduction by the Head of Melati Puskesmas, who emphasised the importance of PPCC services for couples before marriage. This was followed by her presentation on the concept of "*sakinah mawaddah wa rahmah*" (tranquil, loving, and compassionate) and the roles and responsibilities of spouses in the Islamic context. The material was delivered through a one-way lecture format, with the speaker seated in front of the participants while they listened passively. Following this, Tutik, the second speaker and a midwife who coordinates the 'Kelas Catin', presented the second topic focused on health. Her presentation covered the objectives of the 'Kelas Catin' service, reproductive health, premarital health care, procedures for premarital health check-ups, family planning, gender equality, and screening for cervical and breast cancer. Tutik employed a similar delivery method to the first speaker, using a PowerPoint presentation and a loudspeaker, occasionally walking to see the PowerPoint slides.

After the presentation of the material, a 10-minute question and answer session followed. Initially, participants appeared hesitant to ask questions, but enthusiasm increased after the speaker promised gifts for those who participated. Subsequently, five questions were posed, with more questions coming from male partners than female ones. The queries predominantly concerned current health issues and their

relevance to pregnancy preparation. The event concluded with a group photo.

The researcher's reflection (This is a reflection of two observations of 'Kelas Catin') The atmosphere was semi-formal and somewhat rigid due to the one-way nature of the learning model and the limited interaction between the speaker and participants. Consequently, participants appeared less engaged with both the speakers and each other. Although several topics were covered, the time allocated was very limited.

Based on the field notes and the researcher's reflection, it is evident that 'Kelas Catin' aimed to didactically educate and provide health information to couples. The material, delivered by health professionals (a doctor and a midwife), covered both health and religious topics. The method was predominantly one-way, with the speakers actively delivering the content while the couples listened passively. Although there was an opportunity for questions, the allotted time was very limited.

Response to the Health Check-up Service Delivery

Couples' opinions about the health check-up service were mixed, with some expressing satisfaction and others dissatisfaction. Notably, men and women tended to focus on different aspects.

One couple, Santosa and Santi, provided the following responses:

> *"I think the health check-up is well-implemented. The service is fast, the cost is affordable, and the results of the lab examination are also timely." (Santi, 23, Female, Couple 1)*

> *"Yes, I agree that the health check-up is well managed. The service is prompt, and most importantly, I am relieved and at ease because my partner and I have been declared healthy." (Santosa, 35, Male, Couple 1)*

Based on the quotes from Santosa and Santi, both appeared satisfied with the health check-up service but focused on different aspects. Santi emphasised the process, noting the speed of service, affordability, and prompt delivery of examination results. Conversely, Santosa was more results-oriented, expressing satisfaction with the favourable outcomes of their health examination.

In contrast, the couple Toni and Luna expressed disappointment with the health check-up services they received.

> *"What I observed was that the health professionals were not friendly from the beginning to the end. Yeah, not all, but some of them were 'jutek' [jutek is a Javanese term that means unfriendly]." (Toni, 24, Male, Couple 3)*

> *"In my opinion, the midwives were unfriendly, and presented unclear information. I wish the explanation were clearer but I did not have a chance to ask." (Luna,*

23, Female, Couple 3)

Toni and Luna reported dissatisfaction with the health check-up service. They highlighted the unwelcoming behaviour of the health professionals. Luna, in particular, was concerned about the health professional's ability to provide effective counselling. She felt that the counselling session did not offer a positive experience, citing unclear explanations. Similarly, Rani expressed displeasure with the health professional's communication skills.

> *“Still not enough (information provided). I want to hear in more detail what the results of our examination are like because my husband and I are lay people. There should be a lot to say. For example, when you checked for haemoglobin, maybe you can explain what the standard results of the haemoglobin test look like, then the results are like this, meaning that it's not good enough. So, we can understand better.” (Rani, 33, Female, Couple 5)*

Rani felt that she did not receive adequate information in a language she could easily understand. Her concern appeared to be related to both the content and the breadth of the information, which she considered insufficient.

Although the policy at Melati Puskesmas requires couples to participate in the PPCC services, routine practices revealed that men were not always included in the counselling sessions. Toni, who was excluded from the counselling session, commented:

> *"It is important for couples to be involved, so that we know each other's health conditions, which therefore helps improve physical and mental readiness." (Toni, 24, Male, Couple 3)*

According to Toni, it is essential for both parties to be involved in every aspect of the PPCC service procedures. He emphasised that understanding a partner’s health is crucial as it helps couples become both physically and emotionally prepared, viewing this as a necessary step towards a successful marriage.

Another issue pertains to the ability of health professionals to work with couples. It appeared that the decision to involve couples in the PPCC services was not supported by the health professionals' readiness to work with them. This became evident from the participants' experiences, which suggested that the services were still perceived as primarily a “female thing”. Hartatik and Nanang shared their experiences as follows:

> *"The midwife then read out the lab results, and she said my Hb was low (11). So, the midwife told me how to raise Hb, and what I should do. The midwife said that before getting pregnant, it must be normal, or at least 12, so that the pregnancy goes smoothly and the baby is healthy." (Hartatik, 25, Female, Couple 4)*

From Hartatik's statement, it is evident that although the consultation session included both partners, the flow of information and communication was predominantly directed

towards women rather than addressing the couple as a unit. While women valued the health professionals' advice on pregnancy preparation, men often felt undervalued. Nanang's comment reflects this sentiment:

> *"I felt uncomfortable because all the officers were women. I was the only man in the room. The officers also talked more with my partner. I felt less needed in the process because the officers only focused on my partner. I was not asked, so I just kept quiet. Actually, I was wondering why I was asked to go in as it was as if I was not there." (Nanang, 25, Male, Couple 4)*

This quotation suggests that, despite being present, Nanang felt excluded from the service. His frustration stemmed from the service providers' attitudes and behaviour, which led him to feel that his presence did not matter. Nanang's negative experience underscores the need to reassess the involvement of couples, particularly in terms of practical considerations and the readiness of health professionals, including their skills and attitudes towards working with couples.

Male participants regarded the health check-up for men as inadequate in both scope and comprehensiveness. One participant expressed disappointment, noting that the examination was too basic. Initially, Nanang considered the PPCC services to be important; however, after experiencing them, he felt that they lacked significance. This perception may have influenced his overall view of the necessity of PPCC services.

> *“A couple’s involvement in health preparation is important…, but not that important hahaha (laughing). Because after finding a time to visit the Puskesmas, which was so difficult, it turned out that men were only checked for height and weight. So, I didn’t feel good. Thus, it's not that important.” (Nanang, 25, Male, Couple 4)*

Regarding the cost of the health check-up, participants considered the fees reasonable but believed they could still be a burden on couples. Hari expressed his opinion as follows:

> *“Personally, I don't mind the rates, but I'm not sure about the others. One person is charged Rp. 50,000 for a lab examination plus a registration fee, so it's around Rp. 100,000 something per person. It is inexpensive for me because it helps us know.” (Santosa, 35, Male, Couple 1)*

> *“No (not expensive). Compared to hospital, it is cheaper but, in my opinion, this should be included in BPJS [Badan Penyelenggara Jaminan Sosial/Indonesian Social Insurance Administration Organization] or free. For those with lower economic status, the cost can be burdensome.” (Hari, 34, Male, Couple 5)*

Most participants stated that the cost of the health check-up service was affordable. According to Hari, the cost was cheaper than that of similar services provided by the local hospital. However, he believed that for some people, it could still be a barrier preventing them from accessing these services. Hari suggested that the government

should cover the fee or at least include the PPCC services under National Insurance.

The interview findings were corroborated by evidence from the observational data regarding the delivery of the health check-up in routine practice.

Observation:

Name of service: Premarital health check-up

Date and time: November 2021.

Venue: Maternal and Family Planning Clinic

The health check-up service commenced with Ridwan and Fatima registering at the counter by presenting a letter of introduction from Kelurahan Melati [Kelurahan is a county-level administrative division in Indonesia]. The registrar confirmed whether both partners had arrived together, to which Fatima affirmed. Subsequently, the registrar entered their details into the SIMPUS [Puskesmas Information System]. Once registered, the couple waited in the waiting area outside the Maternal and Family Planning Clinic. After a short wait, the midwife called them into the examination room. Inside, three midwives were present: Lina conducted assessments at the assessment table, Retno carried out a physical examination on another patient (a pregnant woman) behind a closed curtain, and Sari, the head of the room, managed administrative tasks at the counselling table.

During the assessment, Midwife Lina asked Fatima several questions, including the planned wedding date, her blood type, and the start date of her last menstruation. Sari then reviewed the data in the medical record to confirm Fatima's age. Lina proceeded with a physical examination of Fatima, measuring her blood pressure, height, weight, and the circumference of her upper left arm. Subsequently, Ridwan was assessed. The midwife first checked his date of birth to determine his age and then asked for his blood type. Lina measured his height, weight, and blood pressure. Once the couple's examinations were complete, Sari issued a referral letter for laboratory tests. The tests for Fatima included a pregnancy test, haemoglobin level, HBsAg, VDRL, and HIV screening. Ridwan's tests included haemoglobin level, HBsAg, VDRL, and HIV screening. After receiving the laboratory results, Ridwan and Fatima returned to the Maternal and Family Planning Clinic. Midwife Sari then called Ridwan and Fatima for counselling regarding their examination results. Before the counselling session, Fatima received a TT vaccination, which Midwife Lina recorded on the TT injection record card.

Then, Sari conducted the counselling session, sitting face-to-face with the couple at the counselling table. She informed them that the results of the health check-up were generally good, with the exception of Fatima's low haemoglobin (Hb) levels. Sari

explained the potential health risks associated with low Hb levels and discussed nutritious foods that can help increase Hb levels, providing examples of beneficial foods. She also recommended that Fatima consider taking iron tablets if necessary. At the end of the counselling session, Ridwan and Fatima were given the opportunity to ask questions, but they did not have any. Following the counselling, Sari noted that both the bride and groom were “SEHAT (HEALTHY)” on their health certificate. The results of their health check-ups were then documented in their medical records. (An example of the health certificate issued by Puskesmas Melati is available in Chapter 6.)

Researcher's reflection: (This is a reflection on five observations of the 'Premarital health check-up')
The midwives did not utilise any assessment tools when obtaining the health history of the couples. The examination was quite basic and focused solely on physical aspects. The researcher did not observe any discussions or hear questions related to psychological factors.

During the counselling session, the health professionals conveyed information in a tone that was more instructive than interactive. The information provided was brief, and there was minimal eye contact between the professionals and the couples. Communication was predominantly one-way, with the midwives focusing on delivering information rather than addressing the couples' needs. In addition, the midwives paid significantly more attention to the female partner and engaged very little with the male partner. The counselling session was notably brief, lasting only around 6 minutes, and utilised a mixture of Indonesian and Javanese languages.

Based on the field notes, it is evident that the health check-up services were organised through the Maternal and Family Planning Clinic. The service package included health screening, which comprised taking health history, performing physical examinations (blood pressure, height, weight, and upper left arm circumference), and conducting laboratory tests (pregnancy tests, haemoglobin levels, and haematology). It also included TT vaccination, education and counselling, and clinical medical services. For instance, if examination results indicated conditions such as hepatitis, syphilis, or HIV, individuals would be referred to a general practitioner for treatment. However, follow-up care was often unclear as the service typically involved only a single appointment for the premarital health check-up. After obtaining a health certificate, couples rarely return to the Puskesmas. The services, provided by midwives, are intended for couples before marriage. Counselling topics are based on examination findings and pregnancy

preparation. However, observational notes reveal that the assessment was neither thorough nor meticulous, focusing solely on physical aspects. The midwife's interaction with the couples reflected a dominant approach, characterised by commanding language, neglect of psychological aspects, unequal attention to both partners, and insufficient information and time allocated.

4.4.1.3. Theme 3: Perceived Benefits of the PPCC Services

This theme highlights the perceived benefits of accessing the PPCC services, with some differences observed between genders. Both men and women identified specific benefits, although some couples noted advantages for them as a pair. Women reported benefits such as increased knowledge, greater understanding of gender relations, strengthened relationships, and both clinical and psychological improvements. Men, on the other hand, cited increased knowledge, insight into their roles as husbands and fathers, clinical benefits, and the development of a positive attitude towards health.

4.4.1.3.1 Sub-theme 1: Perceived Benefits by Women

Female participants reported that the benefits of the PPCC services extended beyond the short term to have a lasting impact. Santi, for example, indicated that she gained valuable knowledge about health, her future roles, and her relationship with her partner.

> ***"****The 'Kelas Catin' provides me with numerous advantages. For instance, information on reproductive health. Then, after undergoing a health check-up, I know my and my partner's health status, so that I have more confidence in my partner and know more about preparations before becoming pregnant, as well as being better prepared if I become pregnant at any time." (Santi, 23, Female, Couple 1)*

Santi stated that the 'Kelas Catin' service significantly broadened her knowledge of health topics, particularly reproductive health. This enhanced understanding provided her with valuable insights into her future role as a mother, especially concerning pregnancy. Additionally, the positive results from the health examination served as evidence to her partner of her suitability, demonstrating her good health. Santi believed that these psychological benefits have positively impacted the quality of their relationship.

Winta noted that she gained valuable insights into gender relations and received health benefits from the screening programme.

> *"The knowledge from 'Kelas Catin' helped me understand what kind of attitude (related to wife and husband in married life) I should have. For health checks, besides being able to know each other's current health conditions, it is also for early detection. So, I feel more prepared to get pregnant." (Winta, 22, Female, Couple 2)*

Winta stated that the knowledge she acquired from the ‘Kelas Catin’ provided her with a fresh perspective on managing and maintaining the relationship between husband and wife by understanding each partner's character. Additionally, she found the screening programme beneficial, as it offered insights into her current health condition based on the test results and helped her feel psychologically prepared for pregnancy.

Luna believed that the PPCC services provided her with crucial knowledge for making informed decisions about family health matters, such as pregnancy planning and contraceptive method selection. She also felt that the services had heightened her awareness and understanding of the importance of a couple's health, which she believed could influence the health of their future children.

> *“Information about pregnancy preparation, family planning, and how to achieve a healthy and happy family, in my opinion, helps us to think further ahead, and this information will help us in decision making. For example, when is the best time to get pregnant, and what contraception method we should choose? I realised the importance of maintaining health. Moreover, if I am pregnant, my health will greatly affect the health of my child.” (Luna, 23, Female, Couple 3)*

4.4.1.3.2 Sub-theme 2: Perceived Benefits by Men

Similar to women, men reported that they benefited from the PPCC services both in the present and in the future. Most male participants identified direct benefits related to their own knowledge, health, and potential roles as husbands, fathers, and parents. Santosa, in particular, gained new insights into gender roles and family goals.

> *“After attending the ‘Kelas Catin’, now I understand how to deal with situations when my wife becomes pregnant. I became more aware of what a woman's condition during pregnancy is like, and what she requires during those times. Therefore, as a husband, I could understand the situation and play my role to create harmony in the family.” (Santosa, 35, Male, Couple 1)*

Santosa believed that the information from "Kelas Catin" had significantly altered his perceptions of and attitudes towards men's roles in reproductive tasks, such as his responsibilities during pregnancy. This insight motivated him to establish goals for his family, including the promotion of health and happiness.

Fariz felt that the PPCC services had helped him cultivate a positive attitude towards health and foster a sense of shared responsibility.

> *“We got a lot of health information and it really affects my attitude, especially in terms of health. I’m convinced that maintaining health is important and that it is a shared responsibility between a husband and wife.” (Fariz, 22, Male, Couple 2)*

Fariz developed an awareness of the importance of maintaining good health and the role

of joint parenting in family well-being. He asserted that the knowledge he gained made him more informed about health matters, emphasising the necessity of couple involvement.

Similarly, Toni acknowledged that he derived the same benefits as Fariz and also developed new insights into the significance of men's involvement in family health.

> *"Honestly, yes at first. I thought so myself. [I thought] it was only a health check for women, a discussion on pregnancy, family planning, and reproductive health. However, it turned out that I was wrong. I do have an important role in family health. We were really encouraged to become a healthy family. And, it really affects my attitude, especially towards health. I am convinced that maintaining health is important and that it is a shared responsibility between a husband and a wife." (Toni, 24, Male, Couple 3)*

Nanang, who attended the Premarital Guidance Seminar, stated that the information he acquired reinforced his existing understanding of the role of men as husbands, as taught by Islamic teachings. He also noted that gaining additional knowledge about reproductive health made him feel better prepared to fulfil his responsibilities as a husband.

> *"I kind of have this direction, especially from my family about the best way to build a household, and also from the congregation I attended. Information from these seminars is empowering. The new information I got, for example, is about reproductive health and how to take care of it. So, this information helps me feel more mentally prepared to carry out my duties as a husband." (Nanang, 25, Male, Couple 4)*

Meanwhile, Hari, who did not have the opportunity to attend the 'Kelas Catin' or the Premarital Guidance Seminar, reported similar experiences to his partner, Rani. Rani's insights were discussed in Sub-Theme One. Hari did not have much to add beyond the information that both partners were declared healthy following their health check-up. However, they did not receive detailed information about the results of the examination.

> *"For the benefit, we obtained the results of our examination. Alhamdulillah (thanks to God, Islamic expression), the result is that we are both healthy" (Hari, 34, Male, Couple 5)*

> *"Thanks to God, the results of our examinations (show that we) are healthy. In the future, we can take better care of each other and know what we have to do for the next… (seeming to think), for example, if we need to postpone or can be immediately pregnant." (Rani, 33, Female, Couple 5).*

4.4.1.4 Theme 4: Couple's Aspirational Needs

This theme examines participants' views on couples' involvement in PPCC services, including perceptions of facilitators and barriers. It suggests that a couple's engagement in PPCC services can improve their pre-pregnancy health and strengthen the quality of their relationship, leading to a positive experience in accessing these services. However,

several factors were identified as potential obstacles to men's involvement in PPCC services, including a lack of understanding about the importance of such services, the financial burden they may face, and other barriers related to time, work, and distance. These findings underscore the essential role men play in PPCC services, yet they also suggest that efforts to facilitate their involvement need further enhancement.

4.4.1.4.1 Sub-theme 1: Perceived Facilitators

The majority of participants reported that involving couples in PPCC services offered numerous benefits both during and after the service. Although couples experienced the same events, their individual experiences sometimes varied. From a women's perspective, the involvement of men was deemed valuable. Women often highlighted the significance of men's presence through their emotional responses, as they exhibited a broader range of emotions compared to men.

> *"To be honest, I'm ecstatic... (showing a bright and cheerful face). So, I have a friend to talk to, and someone to accompany me when I queue somewhere. As a result, I become more excited about everything." (Santi, 22, Female, Couple 1)*

Santi conveyed both verbally and non-verbally that she felt happy being with her partner while accessing the PPCC services. Similarly, Winta believed that a man's presence provided emotional support, which improved the quality of their relationship.

> *"(smiles) It feels good. It feels like someone you know supports and cares about you, and (it) feels comfortable. I became more confident, the stronger our relationship, the stronger it is (confident)." (Winta, 22, Female, Couple 2)*

For Rina, undergoing a health check-up with her partner strengthened their relationship. She also emphasised the importance of good communication, believing that openness about health concerns was crucial for maintaining a strong relationship.

> *"For me, it's just fun. It's nice to be side by side huh (laughs). It feels good to be cared for by a partner. Because you can know each other's health. So, from the start, being open to each other is better." (Rani, 33, Female, Couple 5)*

Interestingly, some men were emotionally moved, as demonstrated by Santosa's statement:

> *"(smile broadly) Yes, it boosts immunity, haha… (laughing) by getting married, the couple will pay attention to each other. So, if you feel cared for, you will be happy, and your immune system will automatically strengthen, making you healthier, hahaha... (laughing)." (Santosa, 35, Male, Couple 1)*

Santosa recognised that marrying within the system carried both personal and health benefits. He described the attention he received from his future wife as a magical boost, which he believed positively impacted his immune system, making him feel healthier.

Fariz voiced a different viewpoint from Santosa, offering insights into how relationships can be strengthened and the nuances of married life.

> *“Yes, it feels good. Yes, I myself have a desire to accompany my wife-to-be. After I heard that earlier, it turned out that she (glaring at his partner) was happy that I was with her. I was even happier. It made me feel needed. I seem to find a reason why I need to always be by my wife's side. Yes, if our partner is happy, we are happy too. Haha (laughs).” (Fariz, 22, Male, Couple 2)*

Fariz explained that his desire to accompany his partner had motivated him to access PPCC services. Moreover, Fariz found that the mutual benefits of the services were likely to strengthen their relationship.

Meanwhile, Nanang offered a more pragmatic reason:

> *“For me, because I have to follow the rules, I need to do it to meet the requirements. If it is late, there will be more problems in submitting marriage requirements because of incomplete conditions. Therefore, I just need to follow the rules.” (Nanang, 25, Male, Couple 4)*

Nanang, on the other hand, viewed his participation in the PPCC services with his future wife as primarily an administrative necessity, aimed at accelerating the marriage process.

Drawing from the findings in Theme 1, the limited information available about the PPCC services led to misunderstandings regarding the purpose of these services at the user level. This highlights the need for more effective dissemination of information about the PPCC services. Most participants emphasised the importance of outreach to increase public awareness, suggesting that this could be achieved through various media, such as the involvement of village officials or the use of posters. As Santosa stated:

> *“Maybe the Puskesmas can be more active in disseminating the PPCC services to the public, perhaps through the village officials or posters informing the importance of these services for couples.” (Santosa, 35, Male, Couple 1)*

Fariz offered insights on improving the accessibility of information for the intended audience. He suggested that communication and informational mediums should not only reach a broader audience but also address issues related to location and timing. For instance, utilising the internet could facilitate online access to information, thus overcoming geographical and temporal barriers.

> *"Maybe the Puskesmas can use the online system (to disseminate the PPCC services). If online information is available, it can possibly overcome the constraints of place and time. The system should be made flexible, for example, the time can be chosen, and materials can be downloaded by couples." (Fariz, 22, Male, Couple 2)*

4.4.1.4.2 Sub-theme 2: Perceived Barriers

All participants indicated that they did not encounter any significant barriers when accessing the PPCC services. However, many speculated about potential barriers that other couples might face. Several reasons were identified by the participants.

The first possible reason was a lack of motivation. Hartatik suggested that insufficient motivation and commitment might stem from couples' lack of understanding regarding the importance of the PPCC services.

> *"They might think it is not important. So, they were not that enthusiastic." (Hartatik, 25, Female, Couple 4)*

Nanang offered a different perspective, suggesting that men's personal attitudes could be a contributing factor. This includes those who are reluctant to invest their time and effort in accessing the PPCC services.

> *"Maybe because they can't manage the time, for example staying up late and waking up late can be the reasons. It could also be due to a lack of commitment." (Nanang, 25, Male, Couple 4)*

Santi offered an alternative perspective, highlighting the possibility of financial constraints. She believed that, although the cost of the health check-up was not prohibitive for her, the expense could deter couples who are unable to afford the PPCC services from accessing them.

> *"I believe that the government should cover the costs of premarital health check-up because it can be expensive for some disadvantaged individuals." (Santi, 22, Female, Couple 1)*

Another underlying factor was practical considerations, such as issues related to employment, like not being granted time off, or logistical challenges, such as having a partner who lives out of town.

> *"This could be due to work-related reasons, such as not being able to leave work, or because their partner is from a distant area." (Santosa, 35, Male, Couple 1)*

4.4.1.5 Theme 5: Role of Social-cultural and Religious Beliefs

This theme highlights the significance of social and cultural values regarding responsibilities and behaviours considered appropriate for men and women within the study context. It also addresses the influence of religious beliefs. It reveals that religious beliefs, particularly Islam, shape participants' views on marriage and childbearing, which are considered fundamental concepts within Muslim families. These beliefs also inform perspectives on the role of gender in maternal health. This is evident in participants'

views and expectations regarding men's roles, which generally place men in key positions within the family. However, the expectation of men's roles seems to be limited to that of "helpers," with reproductive tasks still predominantly regarded as women's responsibilities. This finding suggests that while men's roles in maternal health remain restricted, they hold a strategic position within the family that has the potential to be expanded, including their involvement in improving women's health prior to pregnancy.

4.4.1.5.1 Sub-theme 1: Roles of Social-cultural Norms and Practices

Santi and Santosa discussed their family's values and beliefs concerning gender roles and relationships in the context of family health. They both believed that men and women have important roles to play in managing family health matters.

> *"In my family, men are also responsible for the family's health. Paying attention to the health of family members is important in my family. My mother is also a Posyandu cadre [integrated service post cadre] member. Our family believes that everyone in the family should contribute to the family's health. Therefore, men must also be involved in maintaining family health." (Santi, 23, Female, Couple 1)*

> *"In my family, (we) also do not believe that maternal and family health issues are solely the domain of women. As a husband and wife, we must collaborate." (Santosa, 35, Male, Couple 1)*

Hartatik and Nanang also drew inspiration from family traditions that emphasise shared responsibilities.

> *"In our family, both partners must be involved. Men also need to be aware of the health conditions of their wife and children and take responsibility. For example, when my sister checked her pregnancy, her husband always accompanied her." (Hartatik, 25, Female, Couple 4)*

> *"Yes, it's the same in my family. Men and women must work together to maintain family health. I also plan to accompany and support my wife throughout her pregnancy check-ups and delivery." (Nanang, 25, Male, Couple 4)*

Both Nanang and Hartatik agreed that both partners should be involved in family health matters. However, while some men need encouragement to recognise their role, others readily embrace it. Hartatik has clear expectations for her future husband to actively participate in prenatal check-ups. Conversely, Nanang's understanding of roles seems less defined, as he merely concurred with Hartatik's perspective without additional clarity on his specific role.

Additionally, Luna contributed to the discussion by outlining her expectations for men's roles during pregnancy.

> *"What I see in our family, the man must also be involved in the health of all family*

members. The husband should care for and pay more attention to his wife during pregnancy. For example, if the wife need something, they should help immediately, assist with household chores, and give him a massage if she is tired." (smiling while looking at her partner)." (Luna, 23, Female, Couple 3)

Luna's assertion highlighted that a husband's role during his wife's pregnancy involves giving her full attention and support. She described this form of male involvement as "helping" with household duties and providing emotional support. This view underscores that women often perceive men's roles in family health, particularly during pregnancy, as primarily assisting with household chores.

Conversely, Winta and Fariz hold differing perspectives on this issue, despite some individuals in their social circles still viewing maternal and child health as solely female concerns. Winta, in particular, seems to adhere to a more traditional viewpoint, believing that men's responsibilities are to support and facilitate the needs of women.

"In my family both male and female have to be involved in the family's health matters. The husband has to take care of his wife, for example, escorting and accompanying (her) to pregnancy examination." (Winta, 22, Female, Couple 2)

Fariz, on the other hand, held a distinct perspective compared to the other participants. He appeared to have more progressive views on gender roles and relationships, believing that men and women are equal in all aspects, including decision-making on reproductive matters.

"In my personal opinion. Yes, men should be involved. In order to build a healthy family, we must work together. For example, how many children do we want to have? When? It must be decided together." (Fariz, 22, Male, Couple 2)

4.4.1.5.2 Sub-theme 2: Role of Religious Beliefs

In relation to the PPCC services, participants generally associated them with the obligation to marry and have children within the Indonesian context and in accordance with their Islamic beliefs, as all participants in this study were Muslims.

"Humans were created in pairs and brought together by the universe, namely Allah. with different genders. The goal is to complement each other in shortcomings, starting from getting to know each other without having to violate His rules and the ending is anchored in the legally proof or halal. (We) complement each other's imperfections, for perfection belongs only to Him." (Nanang, 25, Male, Couple 4)

"Marriage is worship, following the sunnah of the Prophet and gaining peace and progeny." (Hartatik, 25, Female, Couple 4)

Nanang and Hartatik believed that marriage was a way to express their obedience and

worship to God (Allah) and to follow the *sunnah* (traditions and practices) of Prophet Muhammad (PBUH[1]). Nanang explained that in their religious faith, humans were created by God in pairs of male and female to complement each other, as perfection belongs only to Him. He further elaborated that in Islamic teaching, the relationship between a man and a woman must be legalised through marriage. The purpose of marriage in the Islamic faith is to obtain peace and offspring.

> *"Children are our assets in this world and life in the hereafter; being able to educate children to become good people who are useful for other people and religion will make parents feel proud... We will educate them well to be "anak sholeh" [virtuous children]. When we die, our children will pray to God to forgive our sins." (Nanang, 25, Male, Couple 4).*

According to Nanang, having children is considered essential. He explained that children are regarded as the greatest asset in human life, not only for this world but also for the hereafter. Therefore, educating children is a highly valuable task, ensuring that they become intelligent, resilient, and devoted to their parents. Nanang elaborated that children who are devoted to their parents are called *anak saleh* (virtuous children). These *anak saleh* are believed to be a potential source of assistance for their parents after death, as their prayers are thought to help remove their parents' sins.

4.4.2 Themes from the Service Provider Participants

The analysis of data from the service providers identified four primary themes and several subthemes (see Table 4.6).

Table 4.6 Themes and Sub-themes from the Service Providers

Themes	Sub-themes
1. Context of PPCC services	1.1. Policy and regulation 1.2. Roles of Religious Affair Office
2. Model of PPCC services	2.1. Concept of PPCC services 2.2. Service delivery
3. Facilitators and barriers	3.1. Facilitators 3.2. Barriers
4. Roles and values of being counsellors	4.1. Roles and responsibility of counsellor 4.2. Values of being counsellor

Descriptions and findings for each theme are presented sequentially in the following sections.

[1] PBUH stands for 'peace be upon him', a common Islamic expression of praying for peace and blessings upon the Prophet Muhammad used by Muslims to respect him. Hereafter in my thesis, I will not use this phrase when mentioning Prophet Muhammad.

4.4.2.1 Theme 1: Context of PPCC Services

This theme emerged from interviews with service providers, including health professionals (managers and practitioners) and the Head of Religious Affairs. The findings reveal that the management and provision of PPCC services were conducted in accordance with Minister of Health Regulation Number 97 of 2014, later updated to Number 21 of 2021. Fees for premarital health check-ups were set by the local government. Meanwhile, the service providers (Puskesmas) played a role in making decisions regarding the availability of PPCC services and were responsible for implementing these services in routine practice using local resources. However, there was no established system for documentation, reporting, and monitoring. Additionally, the roles and policies of the Office of Religious Affairs, rooted in Islamic law, also influenced the PPCC service model.

4.4.2.1.1 Sub-theme 1: Policy and Regulation

Regulations, policies, and role descriptors related to the implementation of PPCC services exist at the national, regional, and provider levels. The analysis of the 2014 and 2021 Minister of Health Regulation documents is presented in Chapter 6, sub-topic: Policy at the National Level. Nationally, the government, through the Ministry of Health, has laid the foundation for preconception services as part of maternal and child health services in Indonesia. Tutik, one of the managers, explained:

> *"Premarital health services for brides and grooms are a programme (initiated) by the central government, specifically the Ministry of Health No 97 in 2014 then changed to No. 21 in 2021, in the context of implementing the Permenkes (Minister of Health Regulation) regarding pre-pregnancy services. Puskesmas as first-level health facilities are the main providers of premarital services." (Tutik, 44, Manager 1, Health Professional)*

According to Tutik, the national policy serves as the basis for managing and providing services to couples before pregnancy, with the Puskesmas as the primary PPCC service provider. This implies that PPCC services should be available throughout Indonesia.

Regarding financing, although there were two types of services, the government only funded the 'Kelas Catin' service, and the budget for it was minimal. Conversely, couples had to personally finance the premarital health check-up service. The costs for these health check-up services were stipulated by the Makmur Regency Regional Regulation (PERDA) Number 55 of 2020 concerning Health Service Costs at Puskesmas. The analysis of the PERDA Number 55 of the 2020 document is detailed in Chapter 3, sub-topic: Policy at the Regional Level.

> *“For health checks services before marriage, fees are charged for registration, laboratory checks, and health certificates. This is in accordance with PERDA No.55 the Year 2020 of Makmur Regency. Meanwhile, for Kelas Catin, it is financed by the “Makmur” Regency Health Office, in particular from BOK funds, but the budget is very limited.” (Tutik, 44, Manager 1, Health Professional)*

Regarding data management and evaluation systems, there appeared to be no established system for documenting, reporting, or monitoring PPCC services.

> *“As far as I know, it does not exist so far (there is no data documentation system), and it has not been analysed that far. Hence, there is no specific evaluation for individual and group services. The evaluation so far has been in general for all programs implemented at Puskesmas”. ((Siti, 48, Manager 3, Health Professional)*

4.4.2.1.2 Sub-theme 2: Role of the Religious Affairs Office

The Office of Religious Affairs also played a significant role. This office, a government agency under the Ministry of Religion, is responsible for the service, registration, and reporting of marriages and reconciliations for the Islamic community.

> *"We made a policy together with the local Religious Office, so that the requirements for marriage are not only a record of the TT injection but also a health certificate from the Puskesmas containing the results of the pregnancy test which will be used as a consideration in the marriage application" (Siti, 48, Manager 3, Health Professions)*

The institutional relationship between the Puskesmas and the Office of Religious Affairs appears to be based on mutually beneficial considerations. These two institutions agreed to implement a local policy in Melati District. The Puskesmas requested the Office of Religious Affairs to make a health certificate an administrative requirement for registering marriages. This health certificate is issued after couples undergo the pre-marital health check-up service. This measure ensures that all couples complete the pre-marital health check-up, which includes the TT vaccination. Meanwhile, the results of the pregnancy test were to fulfil the marriage requirements set by the Office of Religious Affairs.

The Head of the Office of Islamic Religious Affairs, Hasan, explained that in the Indonesian context, a marriage is considered valid if it meets the provisions of both state and religious law. In this case, the Head of the Melati Regional Islamic Religious Office established a regional policy requiring prospective brides and grooms to present the results of a pregnancy test, issued exclusively by the Melati Puskesmas, to the 'penghulu'. The 'penghulu' is a government representative under the religious department who officiates the wedding. Therefore, although the Ministry of Health's regulations governing preconception services do not mandate a pregnancy test, the Melati Religious Affairs Office recommends that pregnancy tests be included in the premarital health check-up.

> *“A marriage is only possible if the bride and groom comply with both government and religious laws. The TT vaccination is a requirement under government law, while a pregnancy test, although not mandatory, is recommended to fulfil religious considerations. Information on pregnancy is not a universal requirement for marriage, so not every KUA requires it. However, due to the increasing incidence of pregnancies before marriage, we now deem prenatal check-ups necessary.” (Hasan, 53, Head of Religious Affairs Office)*

A pregnancy test was deemed necessary as a prerequisite for marriage, particularly in Melati. This policy appeared to have both historical and normative foundations. Changes in lifestyle have influenced the socio-cultural values of the Melati population, resulting in an increase in the incidence of pre-marital pregnancies.

Hasan further explained an additional purpose of conducting pregnancy tests within the context of Islamic marriage law.

> *"Information on pregnancy test results is very helpful for 'penghulu' in providing important messages regarding the child who will be born in the future. This is particularly significant for widows wishing to remarry. If the prospective bride is pregnant, the marriage must be postponed until the end of the 'iddah' period. The 'iddah' period is a waiting period that applies to women whose marriage ends either legally due to divorce or physically due to the death of the husband. These provisions are essential for determining lineage." (Hasan, 53, Head of Religious Affairs Office)*

Hasan explained that the results of the pregnancy test would greatly assist the task of the 'Penghulu' in managing marriage issues in Islamic law. For instance, when a widow wishes to remarry, the pregnancy test ensures the lineage of the child.

Meanwhile, the law for prospective brides and grooms who have never been married but whose pregnancy test results are positive is different. As explained by the Head of the Religious Office:

> *"If the prospective bride has never been married but her pregnancy test results are positive, the couple can still get married according to the Madhab Shafi'i (a school of thought in Islam). However, in the future, if she has a daughter, the father cannot serve as her marriage guardian. Instead, a guardian judge must fulfil this role." (Hasan, 53, Head of the Religious Affairs Office)*

The legal considerations for women who have never been married but whose pregnancy test results are positive differ significantly. Pregnancy before marriage carries numerous consequences that affect not only the woman but also her future children. Although the marriage can proceed, the repercussions are long-lasting, particularly for any future daughters. If a daughter wishes to marry in the future, she will not have the right to be under her father's guardianship. According to the Madhhab Shafi'i, in such cases, the '*ijab qabul*'[2] can be conducted with the presence of a 'guardian judge' instead. In Islamic

[2] Ijab Qabul is the formal exchange of marriage vows in an Islamic ceremony, where

Marriage Law, one of the conditions for a valid marriage contract is that the prospective bride must be accompanied by a living paternal guardian. The 'Penghulu' will advise the couple and their families on the implications of having a daughter and the consequences for her future marriage. Notably, although the requirement for a pregnancy test has its roots in Islamic law, it is applied universally to all couples undergoing marriage.

In summary, this subtheme demonstrates that religious practices and beliefs significantly influence the delivery of PPCC services, as evidenced by the integration of Islamic values within the content and context of these services.

4.4.2.2 Theme 2: Model of PPCC Services

This theme explores the conceptualisation and implementation of the PPCC services at the provider level, specifically within Melati Puskesmas. It reveals that PPCC is conceptually designed to assist couples in improving their health before pregnancy. The service model involves couples and includes education, counselling, vaccinations, and simple health checks, though it still predominantly focuses on the physical aspects of health. The provision of PPCC services is carried out with careful consideration of local socio-cultural values, as demonstrated by the incorporation of religious topics, particularly Islam, in education and counselling programmes. Additionally, the timing and content of services are adapted to meet local needs.

4.4.2.2.1 Sub-theme 1: Concept of PPCC Services

The interview results revealed that the PPCC services comprised two distinct types: ‘Kelas Catin’ and premarital health check-ups. According to Tutik, the manager, the two services are defined as follows:

> *“We have a program called ‘Kelas Calon Pengantin’ or Kelas Catin, which is a service in the form of providing communication, information, and education to brides and grooms, which is carried out in groups”. (Tutik, 44, manager 1, Health Professional)*

> *“Premarital health check-up is health examination for the bride and groom which is done before marriage. The service includes assessment, physical examination, laboratory examination, counselling, TT vaccination, and handling of cases found”. (Tutik, 44, manager 1, Health Professional)*

From the quotations above, it is evident that both services are intended for the bride and groom before marriage. However, they differ in their approach and focus. The ‘Kelas Catin’ provides group-based education and information to couples, while the premarital health check-up involves individual health examinations, including counselling, for each

---

the bride's representative offers marriage (Ijab) and the groom accepts (Qabul).

couple.

Interviews with managers at Melati Puskesmas revealed the rationale behind the implementation of the PPCC services at this facility.

> *"Pre-pregnancy health services are one of the efforts to reduce MMR and IMR, as well as efforts to reduce stunting cases. So that services are needed for the bride and groom to be ready to get pregnant. If done after marriage, it will be difficult to prevent or follow up if there is any health problem. Because the habit of "healthy consultation" is still low. So, usually after marriage, the couple immediately wants to have a child, then give birth, then get pregnant again (laughing)." (Tutik, 44, manager 1, Health Professional)*

The main reason for offering PPCC services at Melati Puskesmas is to combat high maternal and infant mortality rates and to reduce stunting, which is defined as below-average height for age. Tutik emphasised the importance of providing these services before marriage due to traditional and social expectations for couples to start families immediately and the generally low uptake of pre-pregnancy consultations.

Another underlying factor is the analysis of health problems at Melati Puskesmas, which revealed a high incidence of sexually transmitted diseases among pregnant women, including HIV and syphilis, as well as a concerning rise in teenage pregnancies before marriage.

> *"Regarding premarital health services for the bride and groom, based on our analysis of health problems, we found many cases of HIV and other sexually transmitted diseases such as syphilis and hepatitis (on pregnant women). In addition, there is an increase in the incidence of pre-marital pregnancies and teenage pregnancies." (Siti, 48, Manager 3, Health Professional)*

To overcome the high maternal and infant mortality rates and health problems that arise at the local Melati Puskesmas, health professionals advocate for a preventative approach through PPCC services rather than managing complications during pregnancy.

> *"Because we want to go further upstream in efforts to handle it. Thus, providing information about health to the prospective bride and groom is more meaningful than dealing with high-risk pregnant women because it will be more difficult". (Tutik, 44, manager 1, Health Professional)*

The target of the PPCC services at Melati Puskesmas is prospective brides and grooms.

> *"The targeting strategy of this program is the prospective bride and groom. We believe that couple involvement can contribute to improving for couple and family health both physically and psychologically. For example, by conducting a health check on both partners, their health conditions will be known early on, if there is any health issue, for example, a sexually transmitted disease. We have to explain to the couple, an explanation of the transmission, and how to handle it. If both are healthy, the officer will provide education on when to plan a pregnancy and so on." (Siti, 48, Manager 3, Health Professional)*

Siti emphasised the significance of involving couples, asserting that their participation positively affects both their physical and psychological well-being. She illustrated the benefits of screening, such as identifying sexually transmitted diseases, and highlighted the advantages of acquiring knowledge about pregnancy preparation. Additionally, Tutik provided further insights into why involving couples is crucial for the effectiveness of the PPCC services.

> *"The consideration is that the reproductive health problems of each partner can affect the other. The solution to each other's health problems will affect both of them, so they must be involved, support each other, and find mutual solutions". (Tutik, 44, manager 1, Health Professional)*

According to Tutik, health practices, including those related to reproductive health, are influenced by the impact partners have on each other's behaviour. Consequently, involving couples in these practices can enhance their opportunities for mutual support, encouragement, and behavioural change, ultimately benefiting the family as a whole. Additionally, Fatma, a practitioner, expressed her belief that involving couples could improve the effectiveness and efficiency of the educational process through targeted counselling.

> *"When the couple come together, it means that our information and actions will be on target. For example, if the couple attends the counselling, it will be easier for us to convey information and help both understand better. If only the woman comes, for example, who would make sure that she tells her partner, or it may be that the information will be unclear. Additionally, they are still a prospective couple, so they probably don't know each other well, so it is unlikely for them to tell their partners. It may be that they think it is taboo to talk about matters related to reproductive health. All of these things can be avoided if the couple comes together". (Fatma, 46, Practitioner 3, Health Professional)*

4.4.2.2.2 Sub-theme 2: Service Delivery

The findings related to the delivery of PPCC services are presented sequentially, beginning with the 'Kelas Catin' service, followed by the premarital health examination service. The provision of PPCC services adhered to standard operating procedures (SOPs) and was contingent upon the resources and infrastructure available at the Puskesmas. The examinations conducted were relatively basic, predominantly focusing on physical health aspects, while mental health considerations received comparatively less attention.

'Kelas Catin' Services

Interviews with the managers of Melati Puskesmas revealed that the service delivery of

‘Kelas Catin’ involved cross-sectoral collaboration.

> *“In 2017, we established a sub-district ‘Kelas Catin’ committee to oversee the programme. Initially, we announced that ‘Kelas Catin’ would be held at the Puskesmas. By 2021, it was approved to conduct these sessions biannually. To implement this programme, we collaborate with Mr Mudin in each village and with the KUA (Religious Affairs Office). Prior to the COVID-19 pandemic, we often invited the Head of KUA as a speaker to address religious topics. We also coordinate with the village, particularly with Mr Mudin, to identify prospective brides and grooms. Additionally, the village midwife occasionally conveys information and invitations to couples.” (Siti, 48, Manager 3, Health Professional)*

Based on the above quotation, it is evident that while the Puskesmas was the organiser of the programme, its implementation involved a comprehensive process of cross-sectoral collaboration. Two main institutions played key roles: the Kelurahan (a government agency under the sub-district that coordinates several villages) and the Religious Affairs Office. The Kelurahan’s role was to provide data on the couples to be invited. The Puskesmas then sent out invitations to the couples through village officials or village midwives. The Religious Affairs Office typically provided a speaker for religious topics. However, during the COVID-19 pandemic, due to social restrictions, the ‘Kelas Catin’ sessions were conducted without a speaker from the Religious Affairs Office. In this instance, the Head of Melati Puskesmas took on this role.

The process for couples participating in the ‘Kelas Catin’ service was described by Tutik as follows:

> *“For the flow, the prospective bride and groom will initially process the marriage documents at the village office (Kelurahan). From the Kelurahan, they will be given the invitation to attend the ‘Kelas Catin’. Then, the bride and groom who have received an invitation can then go to the Puskesmas to get the ‘Kelas Catin’ service.” (Tutik, 44, manager 1, Health Professional)*

Couples manage their administrative requirements for marriage at the Kelurahan, where village officials select those who will be invited to the ‘Kelas Catin’ service. The couples who receive an invitation then attend the Puskesmas for the service.

However, due to limited funding, the ‘Kelas Catin’ service was only available to a small group of couples, making it inaccessible to everyone.

> *"The ‘Kelas Catin’ service has not been able to reach all prospective brides and grooms due to limited funds. In 2021, the ‘Kelas Catin’ service was approved to be held twice a year, targeting around 50 people per event". (Tutik, 44, manager 1, Health Professional)*

The ‘Kelas Catin’ services were typically scheduled during the months with the highest number of marriage applications, specifically *Shawwal* and *Dhulhijjah* (months in the Islamic calendar), as these months are considered religiously full of blessings.

> *"In determining the timing of the 'Kelas Catin', we look at the time when most weddings are held, which is usually the months of Shawwal, (and) the month of Hajj (Dhulhijjah). In 2021, we actually scheduled it in July and August. However, because coincidentally, at that time, the COVID-19 pandemic was rising high, we postponed it first, and it could only be carried out twice in November 2021" (Tutik, 44, manager 1, Health Professional)*

Health check-up Services

Interviews with health professionals revealed that not all of them were aware of the existence of national guidelines, as evidenced by Tutik's statement:

> *"Regulations from district governments or standardisation of models and delivery of services do not exist. The Puskesmas provides a service based on problem analysis, and the service is carried out according to the SOP made by the Puskesmas. So, perhaps because of that, every Puskesmas can be different in its implementation." (Tutik, 44, manager 1, Health Professional)*

This disparity in understanding among health professionals regarding the provision of PPCC services may contribute to the varying practices in service delivery between different Puskesmas.

The health professionals providing the service were midwives. According to Tutik, all the midwives were prepared to become counsellors, even though they had not received any specialised training.

> *"No training yet. Yes, we study independently in order to meet the expected competencies." (Mirna, 42, Female, Manager 2, Health Professional)*

For couples' counselling, topics were tailored to the needs of individuals and couples, usually based on the results of health and laboratory examinations. If no health problems were identified, the counselling would focus on preparing the couple's health before pregnancy.

> *"The midwife will provide an explanation regarding the results of laboratory tests, or if everything is normal, the midwife will usually provide education about preparing for pregnancy." (Tutik, 44, Practitioner 1, Health Professional)*

Regarding mental health assessments, interviews with health professionals confirmed previous observations that health examinations were conducted very simply and did not address mental health aspects. In the absence of evidence relating to mental health assessments in the field, the researcher took the initiative to explore information on this topic.

> *"They (mental health assessments) are necessary because the number of mental disorder cases is increasing due to high stress in work environments, homes, and communities. This form of assessment was only socialised by the Ministry of Health in August 2021. However, it has not yet been implemented optimally." (Tutik, 44, manager 1, Health Professional)*

According to Tutik, mental health assessments are considered important. However, their implementation has not been possible due to various factors. These include health professionals not having received the necessary training, the lack of socialisation of mental health assessment tools, and the Puskesmas being preoccupied with activities related to managing the COVID-19 pandemic.

4.4.2.3 Theme 3: Facilitators and Barriers

This theme highlights that the implementation of PPCC services in routine practice faced numerous challenges originating from various elements such as organisations, service providers, service users, and society. However, efforts to address these challenges have been localised and partial.

4.4.2.3.1 Sub-theme 1: Facilitators

There were resources and facilities that health professionals considered facilitators of the PPCC services, particularly in supporting 'Kelas Catin' services. Tutik, the coordinator of 'Kelas Catin', mentioned that Melati Puskesmas had excellent supporting facilities, such as a large hall equipped with appropriate equipment. Additionally, handouts, refreshments, and drinks were provided for couples.

> *"Facilities for 'Kelas Catin' are, in my opinion, quite good. We have a hall that can accommodate up to 50 people, equipped with air conditioning, loudspeakers, an LCD monitor, laptops, and comfortable tables and chairs. There are snacks and drinks as well as handouts that can be distributed to participants." (Tutik, 44, manager 1, Health Professional)*

Tutik also mentioned that the Ministry of Health issued an online learning resource called the "Kes Catin App." This mobile application was designed as a learning tool to help increase couples' knowledge about preconception health. However, the potential benefits of the 'Kes Catin App' were not accessible to all couples because its availability was still limited to those attending 'Kelas Catin', and not all health professionals were aware of its existence.

> *"The name of the application is 'Kes Catin,' which was recently launched by the Ministry of Health. This application can be downloaded from the Play Store and contains information about health preparations before getting pregnant. However, currently, we only inform couples who come to the Puskesmas about it, and not all health professionals at the Melati Puskesmas are aware of its existence because it is still new and there have been staff changes due to the COVID-19 pandemic." (Tutik, 44, manager 1, Health Professional)*

Health professionals considered the resources at the Puskesmas to be facilitators of the PPCC services. These include the willingness of health professionals to serve as

counsellors and the availability of laboratory facilities, despite the limited service capacity.

> *"All midwives can provide counselling, and there is a laboratory facility capable of carrying out examinations for twenty people every day." (Tutik, 44, manager 1, Health Professional)*

4.4.2.3.2 Sub-theme 2: Barriers

The primary barrier at the organisational level in providing the 'Kelas Catin' services was the limited funding allocated by the District Health Office. This constraint on funds affected the number of events that could be organised, thereby reducing the number of couples who could benefit from the service.

> *"The problem is a lack of funds. So, in one year, we can only hold 'Kelas Catin' twice. In terms of funds, it is still a bit difficult to find a solution because the budget submitted to the District Health Office and how much funds are approved also depends on the Health Office." (Siti, 48, Manager 3, Health Professional)*

Meanwhile, for the premarital health check-up services, couples are required to pay to access this service.

> *"For premarital health check-up services, fees are charged for registration, laboratory tests, and health certificates. This often becomes a point of contention among residents, as they question why these services require payment when those at the KUA (Religious Affairs Office) are free. Nevertheless, due to the existing guidelines, there is limited flexibility in altering this practice." (Tutik, 44, manager 1, Health Professional)*

Tutik's statement indicates that the requirement for pre-marital health check-ups imposes a financial burden on some couples, potentially discouraging them from accessing these services.

Additionally, some practitioners identified other barriers, such as a perceived lack of support and commitment from relevant parties. Despite efforts by health professionals to establish communication and collaboration with stakeholders, the outcomes have not met expectations. It appears that not all village officials are fully aware of their expected roles.

> *"Although we have made efforts to disseminate this information, for example through village officers, not all officers consistently pass on the details. When a couple applies for marriage at the village office (kelurahan), it is expected that the kelurahan officer will provide information on the health check-up process. However, it appears that this information is not always communicated to the couples." (Mirna, 44, Practitioner, Health Professional).*

Another underlying factor was the disparity in priorities between sub-district officials and

the Puskesmas, with not all Kelurahan offices prioritising the health sector. The lack of communication and coordination between these institutions led to misunderstandings regarding their respective roles and functions in supporting health programmes, particularly the PPCC services.

> *“It is due to the lack of cross-sectoral roles, particularly the absence of functioning officers in the Kelurahan. Every bride and groom must handle their marriage paperwork at the village office. If all village officers provided information and encouraged couples to have health checks together at the Puskesmas, the outcomes would likely be different. However, in reality, not all Kelurahan exhibit the same level of commitment as the Puskesmas, despite efforts at cross-sectoral communication and outreach. Each Kelurahan may have varying degrees of commitment.” (Mirna, 44, Practitioner, Health Professional).*

At the service provider level, barriers were primarily related to human resources, infrastructure, and facilities supporting the PPCC services. A key issue with human resources was the lack of programmes to support the development of competence and knowledge among PPCC service providers. The absence of adequate training and limited facilities for skill and knowledge development for these health providers highlighted this problem. Consequently, service providers were compelled to seek their own solutions to enhance their competencies through self-directed learning.

> *“There is no any (training)…. However, there are briefings in coordination meetings, a kind of refreshing, but no certificates. We read guidebooks and update knowledge on our own and learn from peers” (Tutik, 44, manager 1, Health Professional)*

In addition, the mixed service delivery system and limited staff numbers have made it challenging for health professionals to allocate sufficient counselling time for couples. This difficulty arises from having to manage services for pregnant women, who are more numerous than premarital couples.

> *"To be honest, the services for premarital couples are currently combined with those for pregnant women and family planning. The number of pregnant women is usually high, and our staff is limited, which leaves very little time for counselling with couples." (Sari, 42, Manager 2, Health Professional)*

Moreover, there is a shortage of infrastructure and facilities at the Puskesmas, including a lack of private rooms for counselling.

> *“We do not have a dedicated room for counselling. The service for prospective brides and grooms is combined with other services, such as those for pregnant women and family planning, within the same room. Consequently, counselling is conducted only when absolutely necessary due to the high volume of clients.” (Mirna, 44, Practitioner 4, Health Professional)*

Service providers recognised several barriers faced by individuals or couples, which

were related to their work commitments and travel distances. Couples reported difficulties such as not being able to obtain permission or time off from their employers, as well as challenges posed by long distances if they lived in different cities.

> *"When it comes to individual counselling services, the obstacles often include the inability of the prospective bride or groom to attend with their partner due to location constraints, such as the partner being from another city, or work-related issues, such as not being able to get leave from their job." (Tutik, 44, manager 1, Health Professional)*

Siti recognised that couples might face challenges if a pregnancy had already occurred, as they would need to access mainstream services to obtain the necessary documents for marriage. In this context, barriers to accessing counselling could arise from feelings of shame, social embarrassment, and subsequent social isolation.

> *"Then another obstacle, not all couples are willing to attend group counselling. One reason is the bride-to-be is already pregnant. So, they are ashamed." (Siti, 48, Manager 3, Health Professional)*

4.4.2.4 Theme 4: Roles and Values of being a Counsellor

This theme highlights that the role of a counsellor is regarded as more than a professional obligation; it is viewed as a profound calling. Counsellors perceive their work as an opportunity to assist others and believe that doing so aligns with their beliefs, constituting a good deed. This finding indicates that religious beliefs influence the attitudes and behaviours of healthcare professionals in performing their duties as PPCC service providers.

4.4.2.4.1 Sub-theme 1: Roles and Responsibility of Counsellor

For most participants, being a counsellor was viewed as a professional responsibility.

> *"Because I think it is our job. Yes, it is automatically integrated into patient care services. So, well, providing counselling has become part of the task we must do." (Fatma, 46, Practitioner 3, Health Professional)*

However, health professionals acknowledged that their roles as counsellors had become more challenging due to a lack of support for improving their competencies.

> *"No training yet. Yes, we study independently in order to meet the expected b es." (Sari, 42, Manager 2, Health Professional)*

They regarded their past experiences as counsellors as valuable learning opportunities, while knowledge gained from peers was seen as beneficial for broadening their understanding.

“I personally have never had special training. But friends who are program coordinators often receive training from the District Health Office or from workshops and then the references will be distributed to midwives, either through meetings or WhatsApp groups.” (Mirna, 44, Practitioner 4, Health Professional)

4.4.2.4.2 Sub-theme 2: Values of Being a Counsellor

The health professionals admitted that their role as counsellors was motivated not only by professional responsibilities but also by internal drive. They expressed that they genuinely enjoyed and were satisfied with their roles. They described their internal motivation as stemming from a heartfelt desire to do good.

“It comes from my heart. So, when I look at what the patient need, I want to help. We try to help patients understand. I just do it (counselling) happily (smiling facial expression and sparkling eyes).” (Fatma, 46, Practitioner 3, Health Professional)

Apart from that, some of the participants believed that being a counsellor constituted an act of worship to the Creator.

“If counselling can help patients, I will recite "Bismillah" (in the name of Allah), I believe that this is a part of worship. (Mirna, 44, Practitioner 4, Health Professional)

Caring and empathy were also motivations that encouraged the health professionals to carry out their duties as counsellors.

“So, in Javanese it is "Nepakke" (empathy). I view them as family. Thus, we do not only approach them by transferring knowledge, but also build the couple's attitude. Our care for couple is expected to encourage them to behave healthier.” (Fatma, 46, Practitioner 3, Health Professional)

Those who held dual roles as both managers and counsellors regarded this dual responsibility as a form of trust that must be embraced and respected. Mirna noted that having these dual roles enabled her to understand the challenges faced in routine practice, providing her with valuable insights for her managerial role.

“The task of providing health services to patients is my primary responsibility as a midwife, while the role of coordinator is an additional duty. Both roles must be performed to the best of my ability because they represent a trust, not a burden.” (Mirna, 44, Manager 2, Health Professional)

This sub-theme highlights the profound dedication of health professionals towards service users, including couples who are already pregnant. The commitment to serve and assist others is deeply ingrained among service providers, where it is viewed as both a professional responsibility and a virtuous act. Consequently, it appears that the

surrounding infrastructure of the PPCC services is the most significant limiting factor.

The following section presents the results of the documentary analysis.

4.5 Documentary Analysis

Five implementation documents were analysed. These documents, which were obtained from health professionals at Puskesmas Melati and service users (couples), include cover letters, laboratory examination referral letters, leaflets, health certificates, and standard operating procedures (SOPs). A summary of the selected documents is presented in the following table.

Table 4. 7 Implementation Documents Selected in Puskesmas Melati

No	Name of Document	Sources
1.	Cover letter	Couples
2.	Referral letter for laboratory check	Couples
3.	Leaflet	Couples
4.	Health certificate	Melati Puskesmas
5.	Standard Operational Procedure (SOP)	Melati Puskesmas

PPCC services at Melati Puskesmas are delivered based on standard operating procedures (SOPs) developed by health professionals to align with local policies and needs, while still adhering to national guidelines. For example, at Melati Puskesmas, both men and women are required to undergo a premarital health examination. Couples must present a letter of introduction from the village office when registering for this service. The policy of involving both partners in PPCC services is also evident in the cover letter document, which is required to obtain supporting examinations for both men and women. The documents further indicate that the types of supporting examinations are tailored to address the preconception health issues prevalent in the Melati sub-district. Specifically, the screenings focus on three infectious diseases: HIV, hepatitis, and syphilis. In addition, consistent with the findings from the interviews and observational data, after accessing the premarital health check service, couples are issued a health certificate. This certificate is one of the mandatory documents that must be submitted to the Office of Religious Affairs. Therefore, the format and content of the health certificate were designed to accommodate the specific interests of both Melati Puskesmas and the local Religious Affairs Office. Conceptually, the letter is issued by the Puskesmas and addressed to the Head of the Religious Affairs Office, containing

the results of health examinations and pregnancy tests.

In conclusion, the analysis of documents used in routine services at Melati Puskesmas reveals inconsistencies with national guidelines (MoH No. 21 in 2021), as the documents are based on local policies and the specific needs of the Puskesmas. This is evident in the use of locally adapted versions of documents, such as SOPs, cover letters, supporting examination referral letters, and health certificates. The reliance on these local versions of documents reinforces the findings from interviews and observational data, highlighting variations in PPCC services across different Puskesmas. The complete results of document analysis are presented in Appendix 25.

4.6 Summary of Findings from Case One

Key Messages:
✓ Initially, many service users had limited knowledge about PPCC services, but some exhibited an increase in knowledge after accessing the service.
✓ Although the majority of service users were satisfied with the 'Kelas Catin' service, many participants viewed the health check-up service less positively. This dissatisfaction was attributed to the uncomfortable setting and environment, the cost of the service, the unfriendly attitude of the health professionals, and perceived deficiencies in their communication skills.
✓ Despite the existence of national guidelines, their dissemination among health professionals appears to be inadequate.
✓ At the Melati Puskesmas, PPCC services were delivered by midwives and included a range of activities: health screening (including health history, physical examination, and supporting examinations), nutritional supplementation, immunisations, counselling, and medical treatment or referrals.
✓ The target for PPCC services at the Melati Puskesmas was couples, comprising both men and women.
✓ Although couple-focused approaches have the potential to provide health benefits and foster positive experiences in accessing PPCC, several factors have been identified that may undermine men's involvement. These include a lack of understanding about the importance of PPCC services, the cost of services, and pragmatic reasons such as work commitments and time constraints.
✓ The implementation of PPCC services faced numerous barriers originating from various levels, including organisational, provider, user, and community levels.

However, efforts to address these barriers were primarily local and not comprehensive.

- ✓ The benefits of PPCC services were evident not only for women but also for men, contributing to improvements in preconception health.
- ✓ The use of documents in routine services is adapted to the policies and needs of the Melati Puskesmas, thereby reinforcing the findings from interviews and observational data regarding variations in PPCC services across different Puskesmas.
- ✓ This chapter highlights the significant role of local social culture and religious values, particularly Islam, in shaping the provision of PPCC services.

4.7 Chapter Conclusion

This chapter has provided a detailed description of the implementation of PPCC services at the Melati Puskesmas. The thematic analysis of interviews and observational data from service users yielded five themes, while data from service providers identified four themes. The key findings from Chapter 4 will be used for further analysis. This subsequent analysis, known as cross-case analysis, will be presented in Chapter 6 (Cross-case Synthesis).

Chapter 5 Findings from Case Two: Kenanga Puskesmas

5.1 Introduction

This chapter presents the findings from the thematic and content analysis of Case Two. This chapter aims to provide a detailed description of the implementation of the PPCC services at the Kenanga Puskesmas, based on the perspectives of service users and providers. The chapter begins with a brief description of the research setting and participant characteristics. The themes that emerged from the interviews and observations were managed in the same way as in the first case. The themes in Case Two are the same as the themes in Case One (an explanation of this can be found in Chapter 3, 3.4.7.1 Stages of Analysis Process). These themes resulted from the thematic analysis of interviews and observations and were grouped into two categories: themes from service users and themes from service providers. Relevant evidence from interviews and observations is presented to strengthen the interpretation. The results of the descriptive analysis of the implementation documents used at the Kenanga Puskesmas are presented next. The conclusion of this chapter and the key messages from Case Two are provided at the end.

5.2 Research Setting: Kenanga Puskesmas

The description of the Kenanga Puskesmas is based on the 2021 Kenanga Puskesmas Profile document. The Kenanga Puskesmas is one of twelve Puskesmas in Makmur Regency, Central Java, Indonesia. It has a working area of 23 square kilometres, comprising 614.303 hectares of rice fields and 592.975 hectares of land. Geographically, the area of Kenanga Puskesmas is lowland and includes agricultural, industrial, and partly urban (residential) zones. Several villages are production centres for the handicraft and furniture industry (using rattan), and traditional snacks (made from a local fruit called ‘mlinjo’), and are the centre of guitar manufacturing in Indonesia. The Kenanga Puskesmas provides health services to fourteen villages, with a population of 71,138 people in 2021. The majority of the population is ethnic Javanese, although new arrivals continue to increase.

5.3 Characteristics of Participants

Previously, Chapter 4, Sections **Error! Reference source not found.** and 4.3.2

explained the number of potential participants from service users and providers who were given information, expressed interest, and were ultimately recruited. In Case Two, the total number of participants was 16, comprising eight service users and eight service providers. Detailed information about the participants from both service users and providers is presented sequentially below.

5.3.1 Participant Characteristics of Service Users in Case Two

A total of eight participants were interviewed and five women were observed during their health check-ups, consisting of three couples and two women. The participants' ages ranged from 21 to 34 years. Their educational backgrounds varied from elementary school to senior high school, with some holding a degree or equivalent qualification. Some participants worked as private employees, others as factory workers, and one was a student. All the participants were Muslim and belonged to the Javanese ethnic group. There were two types of PPCC services at the Kenanga Puskesmas: pre-marital health check-ups and 'Kelas Catin'. However, at the time of data collection, 'Kelas Catin' was temporarily unavailable due to restrictions imposed because of the COVID-19 pandemic. Table 5.1 below displays the characteristics of the service user participants who took part in the interviews.

Table 5.1 Profile of the Service Users Participants

Couples /Women	Pseudo-nym/Age	Gender	Education	Employment	Religion /ethnicity	Accessed Services
Couple 1	Azizah (21)	Female	Senior High School	Unemployed	Islam/ Javanese	Health Check-up
	Zidan (31)	Male	Senior High School	Private employee	Islam/ Javanese	Health Check-up
Women 1	Muti (34)	Female	Elementary School	Factory employee	Islam/ Javanese	Health Check-up
Women 2	Pinkan (25)	Female	Diploma	Private employee	Islam/ Javanese	Health Check-up
Couple 2	Fatma (22)	Female	Diploma	Private employee	Islam/ Javanese	Health Check-up
	Nurdin (28)	Male	Bachelor	Private employee	Islam/ Javanese	Health Check-up
Couple 3	Rini (22)	Female	Senior High School	Undergraduate Student	Islam/ Javanese	Health Check-up
	Fahmi (28)	Male	Diploma	Private employee	Islam/ Javanese	Health Check-up

The following are the characteristics of service provider participants.

5.3.2 Participants Characteristics of Service Provider in Case Two

A total of eight people was interviewed, three practitioners participated in the observation, with one participant having a dual role. The participants' ages ranged from 35 to 53 years old. They comprised two male and six female participants. The participants' educational backgrounds ranged from Diploma Level Three to Bachelor's degrees. The health professionals included six midwives and one doctor, with four participants serving as managers and four as practitioners of the PPCC service. Table 5.2 below summarises the characteristics of the service providers.

Table 5.2 Profile of the Service Provider Participants

No	Pseudonym/ Age	Gender	Education	Profession	Roles
1.	Andi (35)	Male	Bachelor	Nurse	Manager 1 and Practitioner 1
2.	Mawar (44)	Female	Diploma 3	Midwife	Manager 2
3.	Mirna (43)	Female	Diploma 3	Midwife	Practitioner 2
4.	Putri (49)	Female	Bachelor	Doctor	Manager 3
5.	Yuni (49)	Female	Diploma 3	Midwife	Manager 4
6.	Ningsih (46)	Female	Diploma 3	Midwife	Practitioner 3
7.	Ratih (44)	Female	Diploma 3	Midwife	Practitioner 4
8.	Salim (53)	Male	Bachelor	Religious scholar	Head of Religious Affairs in Kenanga

The next section is the findings from the second case which are presented sequentially theme by theme.

5.4 Themes from Case Two: Kenanga Puskesmas

In this study, the initial aim of using a two-case comparative design was to facilitate comparisons. Therefore, the themes generated from the first case were used as a framework for developing themes in the second case. Findings from Case Two evolved into the same themes and sub-themes as those in Case One. The results of the thematic analysis from the interviews and observations in Case Two were managed in the same way as those in Case One.

This section begins with a table of themes and subthemes to provide a general overview of the themes that emerged in Case Two before detailing the findings and interpretations. Themes are presented sequentially, starting with those that emerged from the service users (women and couples), followed by themes from the service providers (managers, practitioners, and Heads of Religious Affairs Offices).

5.4.1 Themes from the Service User Participants

Overall, five themes emerged from the thematic analysis of the service user data, with each theme comprising two subthemes. Table 5.3 presents the themes and subthemes from the service users in Case Two.

Table 5.3 Themes and Sub-themes from the Service Users

Themes	Sub-themes
1. Knowledge and understanding about PPCC services	1.1 Initial knowledge about PPCC services
	1.2 Knowledge gained after experiencing PPCC services
2 Response to PPCC services	2.1 Response to the physical setting of service
	2.2 Response to the service of delivery
3 Perceived benefits of PPCC services	3.1 Perceived benefits by women
	3.2 Perceived benefits by men
4 Couple's aspirational needs	4.1 Perceived facilitators
	4.2 Perceived barriers
5 Role of social-cultural and religious beliefs	5.1 Role of social-cultural beliefs
	5.2 Role of religious beliefs

Findings from each theme and subtheme are explained below to illustrate participants' perceptions, attitudes, and behaviours in both receiving and providing PPCC services.

5.4.1.1 Theme 1: Knowledge and Understanding about PPCC Services

This theme indicates that the PPCC services were not well known among service users due to their limited exposure to information. After receiving premarital health examination services, some participants increased their knowledge. However, this knowledge was primarily confined to health preparation before pregnancy, and even then, there were inconsistencies in the information provided.

5.4.1.1.1 Sub-theme 1: Initial Knowledge about PPCC Services

Most participants commented that they had never heard of the terms 'health check-up' or 'Kelas Catin' before attending these services, due to the limited information they had received. Azizah's comment illustrates that her decision to undergo a health check-up was not based on her understanding of the service, but rather due to pressure from a village official who required her to have the check-up at the Puskesmas.

> *"I have never received any information on the health check-up and Kelas Catin. I was only directed by the Village Official to get a health check-up at the Puskesmas, that is all." (Azizah, 21, Female, Couple 1)*

Statements about unfamiliarity with the PPCC services were also made by male participants. For instance, Zidan, lacking information about the PPCC services,

attempted to obtain information from online sources, but found the results to be disappointing.

> *"I have never heard of it either. We even looked for information on what couples need to do before marriage on the internet, but I found nothing." (Zidan, 31, Male, Couple 1)*

Pinkan also searched for information on the internet. She appeared frustrated because she was unable to find the information she needed, particularly concerning the PPCC services.

> *"I have just heard from people that if you want to get married, you have to get a TT injection. Well, I did not know at first what a TT injection was. So, I searched on the internet myself; what is a TT injection; and what are the benefits? For me, it's still confusing. For example, is there a scheduled time or not? When to do it before marriage? I'm still confused." (Pinkan, 25, Female, Women 2)*

5.4.1.1.2 Sub-theme 2: Knowledge Gained after Experiencing PPCC Services

After accessing the premarital health check-up service, some participants reported gaining new insights into preparation before pregnancy. Azizah, for instance, mentioned that she now understood the purpose of the health check and received advice to improve her health prior to becoming pregnant.

> *"I got a brief explanation while doing the health check-up. The midwife said that before getting pregnant, a physical examination and blood tests are necessary to be carried out. These examinations aim to determine the nutritional status and health of the mother before pregnancy. For example, if my Hb test result is low. The midwife explained the impact of anaemia on pregnancy and babies. So, to prevent health problems during pregnancy, I was given blood-boosting tablets. So, hopefully, my Hb will be normal before I get pregnant. In addition, I was also advised to consume nutritious foods and eat lots of vegetables and fruit" (Azizah, 21, Female, Couple 1)*

In terms of the information provided, there appeared to be inconsistencies regarding both the depth and breadth of the content. This was reflected in Pinkan's statements, where she felt that the information given was incomplete.

> *"I was told (about) the results of the examination, such as blood pressure and laboratory results, but was not told what they meant. To be honest, I am still confused about why this examination was carried out." (Pinkan, 25, Female, Women 2)*

However, it appears that not all participants were given the opportunity to receive information from health professionals through a counselling session. Rini, for instance, mentioned that no counselling session was provided and still had questions about the service. Despite this, she believed that the service would be beneficial for her.

"To be honest, I don't know exactly what its purpose was until now because I never got an explanation about it. But I'm sure it's definitely good and useful for brides-to-be. (Rini, 22, Female, Couple 3)

5.4.1.2 Theme 2: Response to PPCC services

This theme offers insight into how the service users responded to their health check-up services. The findings revealed that most participants felt both physically and psychologically uncomfortable in the room where they received their premarital health check-ups. Additionally, the majority were dissatisfied with the service delivery, as they had expected the premarital health check-up providers to be knowledgeable, skilled, and friendly.

5.4.1.2.1 Sub-theme 1: Response to the Physical Setting of Service

Regarding the room where the premarital health check-up service was conducted, nearly all participants reported that the room was inadequate to accommodate the number of health professionals on duty. This made the room feel cramped and uncomfortable. The situation was further exacerbated by the activities of the health professionals, which created excessive noise. For both Rini and Azizah, the excessive noise made it difficult for them to hear clear instructions and understand the information being explained to them.

"Uncomfortable because it was a small room, and there were several health professionals in the room; one made a phone call, another told me to close the door. The voices confused me." (Rini, 22, Female, Couple 3)

"They talked to each other while providing the services. So, sometimes I find it difficult to hear the information the midwife conveyed because of that noise. "(Azizah, 21, Female, Couple 1)

Moreover, the presence of multiple health professionals in the room raised concerns about confidentiality. Fatma felt uncomfortable asking personal questions because of the proximity of others and the lack of privacy.

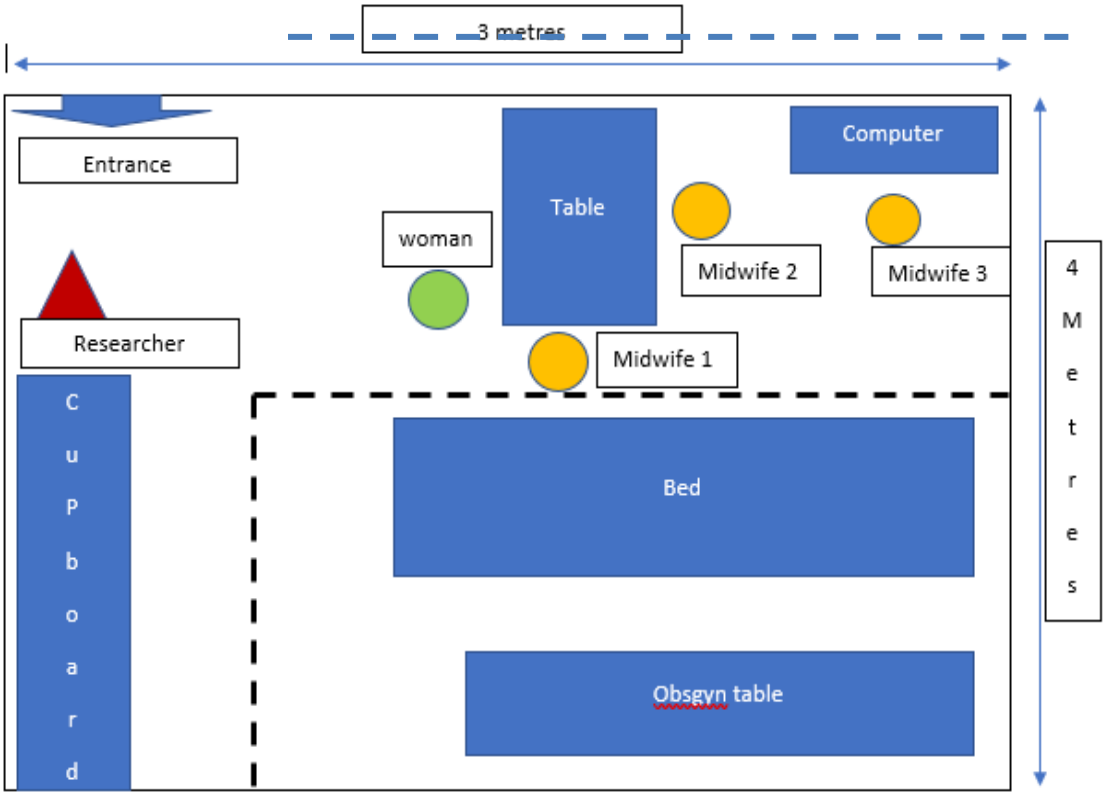
"There were some midwives in the room, I wanted to ask (about) something privately, but I did not feel comfortable to ask" (Fatma, 22, Female, Couple 2)

The findings from the interviews were supplemented by observational data of the room where the premarital health check-up was conducted.

Observation
Name of service: Premarital Health Check-up
Venue: Maternal and Family Planning Clinic
The premarital health check-up services were conducted at the Maternal and Family

Planning Clinic. The room measured 4 by 3 metres and was equipped with air conditioning (AC). It was used for assessments, physical examinations, and counselling, while TT vaccinations were carried out in the immunisation room adjacent to it. The room contained a table measuring 155 by 65 by 75 cm and a computer placed beside the table. There were also chairs for both women and midwives. Next to the table, there was a bed measuring 185 by 70 by 70 cm used for physical examinations. The room was equipped with a spotlight, measuring instruments for vital signs, and an anthropometry set. Adjacent to the examination bed was an obstetrics desk, separated by a dividing curtain. The layout of the room for premarital health check-up services can be seen in Figure 5.1.

Figure 5.1 The Examination Room at Kenanga Puskesmas



Based on the field notes and the sketch above, the room used for conducting the premarital health check-up was small and cluttered with equipment. The layout of the room limited the available space for additional people. It felt crowded because there were five individuals in the small room: three midwives, a woman, and the researcher.

5.4.1.2.2 Sub-theme 2: Response to the Service of Delivery

Most female participants felt that the knowledge and skills of the health professionals delivering the premarital health check-up service were insufficient. As illustrated by the quote below, it seemed that Azizah was concerned about the limited information provided

to her, as well as the health professionals' ability to answer her questions.

> *“The information provided was brief, so it was less in-depth and less focused. I was also confused about what I wanted to ask because she (the midwife) seemed incompetent.” (Azizah, 21, Female, Couple 1)*

Fatma shared a similar view. She reported that the time available for counselling was very limited. Additionally, the midwife's lack of attention to her psychological aspects made Fatma hesitant to ask questions.

> *“It was a rush and busy at that time. The information provided was less detailed. It did not feel clear. Then the attitude of the health professionals seemed less attentive. Actually, I want to ask but it feels uncomfortable.” (Fatma, 22, Female, Couple 2)*

Pinkan was distressed by the attitude of the midwives during her assessment, as their communication style came across as superior and judgemental. This experience left her with a negative impression, as she felt unappreciated and unwelcome by the midwives.

> *“I felt uncomfortable. So, the situation was not so welcome. The health professionals should have conducted the service with a good way of communication. The way of asking about vaccination history was not appropriate. I said I forgot. Then the midwife said, "Then you can't get a TT injection". Huh??? (with a disappointed face). I am so confused because of her response.” (Pinkan, 25, Female, Women 2)*

Fatma hoped for a dynamic counselling environment where there was two-way communication between the health professionals and herself, and where the topics discussed could be adapted to the couple's preferences.

> *“I’d like the atmosphere to be like a consultation, so, I can ask what I wanted to know and convey what made me concerned, for example, knowledge about the roles of men and women in health preparation before pregnancy.” (Azizah, 21, Female, Couple 1)*

Participants were asked about the financial aspect of the service. Some participants indicated that they did not mind paying the service fees, especially those who considered health to be important and found the cost to be affordable. As Muti stated:

> *“Not expensive, Ms, if it's for health; I don't have a problem. But that's what I think Ms.; I said that because I work, I have my own money, but I do not know about others.” (Muti, 34, Female, Women 1)*

However, not all participants agreed with Muti. It appears that the lack of information meant that some service users did not understand the personal financial cost of the service. As expressed by Pinkan, the lack of clarity regarding the service costs concerned her due to her financial constraints.

> *"Yes, if you don't have money, it's a burden. I initially also wondered, since I didn't have much money, it turned out there were lab tests that had to be paid for. I am afraid I did not have enough money as there was no clear information." (Pinkan, 25, Female, Women 2)*

Fahmi appears to be criticising the government's policy regarding the costs of premarital health check-ups, arguing that it should be the government's responsibility to cover the cost of these services.

> *"If it is a government regulation that the bride and groom must have their health checked, the government must be responsible. Yes, the cost must be covered by the government (laughing)." (Nurdin, 28, Male, Couple 2)*

The interview findings were supplemented by observational data. The following field notes were recorded during a routine premarital health check-up received by a woman.

Observation

Name of service: Premarital health check-up

Venue: Maternal and Family Planning Clinic

The woman registered at the registration counter without needing to present a cover letter from the Kelurahan (sub-district). The officer then entered her details into SIMPUS (the Puskesmas information system). After registration, the woman was asked to wait in the waiting room outside the Maternal and Family Planning Clinic. She was subsequently called by the midwife to enter the examination room. The midwife then conducted an assessment, asking questions such as the names of the woman and her partner, her history of TT vaccination during elementary school, her blood type, and the date of her last menstruation.

The woman then underwent a physical examination that included measuring her blood pressure, height, weight, and upper left arm circumference. Following the examination, the midwife provided a cover letter for laboratory tests, which included a pregnancy test, haemoglobin assessment, and a haematology panel. Once the lab results were available, the woman returned to the Maternal and Family Planning Clinic. The midwife then called her in for a counselling session to discuss the results of the examination.

During the counselling session, the woman sat in a chair facing the midwife counsellor at a distance of about an arm's length. The midwife provided counselling while standing, with two other midwives seated in chairs beside her. The midwife noted that the woman's BMI was below the normal range, although other lab results were normal. She said, "If you are married, you will definitely want to get pregnant, right? Well, before you get pregnant, you need to improve your BMI first!" The midwife then

explained the implications of having a low BMI, including potential problems with pregnancy and the baby. She advised, “You need to eat nutritious food, not just food that fills you up.” After the counselling session, the midwife wrote recommendations on a card titled "Healthy Bride and Groom" and gave it to the woman to read at home, as well as documented it in the medical record. The midwife also provided a certificate of examination results to the woman. She then accompanied the woman to the TT immunisation room. There, another midwife checked the woman’s identity, provided education on the benefits of the TT vaccination, informed her about the need for any future rescheduling, and gave advice on post-vaccination care at home. The midwife administered the TT injection and recorded the date of vaccination on a small card. Finally, the midwife prescribed an analgesic for the woman to be purchased at the pharmacy.

Note:
Regarding the administration of analgesic drugs after the TT vaccination, Yuni, who is in charge of the immunisation programme, explained that the current vaccine type might cause side effects such as discomfort, swelling, and pain for two to three days. Prescribing analgesics was intended to help alleviate these side effects.

Researcher's reflection (This reflection is based on five observations made by the researcher)

During the assessment, the midwives did not use specific assessment tools; it seemed as though the list of questions was memorised. The researcher did not observe or hear any discussion relating to the women's mental health assessment. During the counselling session, the midwives stood while the women sat in front of them. The researcher noticed that the health professionals tended to use a monotone voice and provided brief, repetitive information. Communication was primarily one-way from the counsellors to the women, with minimal opportunity for discussion and a lack of eye contact. There was limited dynamic interaction, as the women were generally passive and hesitant to ask questions, despite being encouraged to do so, while the counsellors appeared dominant. The counselling session was very brief, lasting only about 5 minutes. Both the health professionals and the women used a mix of Indonesian and Javanese.

Based on the observation notes, it can be concluded that the PPCC services were provided under the Maternal and Family Planning Clinic. The premarital health check-up service package, which includes several health services, consists of 1) health screening,

which includes assessment, physical examination (measuring blood pressure, height, weight, and upper left arm circumference), and laboratory tests (pregnancy test, haemoglobin level, and haematology); 2) TT vaccination; 3) education and counselling; 4) clinical medical services. The premarital health check-up service was administered by midwives to women who were prospective brides. The observation notes confirmed the physical aspects of the women's assessment. The midwives' attitude towards the women illustrated a power differential, evident from the room layout, the midwives' condescending demeanour, the minimal information provided, and their indifferent tone and lack of engagement. This approach contributed to an impression of superiority maintained by the midwives.

5.4.1.3 Theme 3: Perceived Benefits of PPCC Services

This theme highlights that the PPCC services offered a range of benefits directly experienced by women, particularly concerning preconception health. These benefits included enhanced knowledge and the identification and modification of health behaviours before pregnancy. Furthermore, the involvement of men demonstrated the potential to amplify these benefits, impacting not only the men themselves but also their partners and families.

5.4.1.3.1 Sub-theme 1: Perceived Benefits by Women

Women reported that the premarital health check-up allowed them to be screened and treated for diseases and disorders that could affect both themselves and their babies before becoming pregnant. Azizah noted that the information provided helped her understand that maternal nutritional status impacts pregnancy outcomes. This knowledge made her realise the importance of maintaining good nutritional habits before the preconception period.

> *"The benefit is that I know my health condition. I am anaemic. The officer also told me about the impact of anaemia on pregnancy and on the child, and about what I need to do to prevent health problems in the future, so that now I am aware of how to take care of my health before I get pregnant." (Azizah, 21, Female, Couple 1)*

Similarly, Pinkan mentioned that the premarital health check-up enabled her to enhance her nutritional status through iron supplementation. Her improved nutritional status encouraged her to make changes to her diet, which she believed would benefit both her health and that of her baby.

> *"The laboratory test results showed that my Hb (haemoglobin) was low. Then I was prescribed iron tablets. So, from now on I have to pay more attention to the food I eat, so that my health is good; thus, when I get pregnant, I and my baby*

are healthy." (Pinkan, 25, Female, Women 2)

Concerns about the health and safety of the unborn child heightened awareness of the need to adopt a healthy preconception lifestyle. For Fatma, the premarital health check-up was beneficial as it provided her with advice on choosing a healthy lifestyle, including eating nutritious food to reduce the risks and complications associated with pregnancy.

> *"The midwife said I was anaemic; she said this condition could have an impact on my pregnancy and my baby. I was worried, but she advised me to consume nutritious foods, such as green vegetables, fruits and milk. I will take into account these suggestions, so that health problems do not occur in the future when I get pregnant." (Fatma, 22, Female, Couple 2)*

The results of the health examination made Muti aware of the health risks that could potentially affect her pregnancy. This awareness motivated her to adopt healthier behaviours, such as consuming nutritious food.

> *"The benefit is that I know my current health condition. I know that my Hb is a bit low, so I have to pay more attention to my eating. Then, my blood pressure is high, you know I am 34 now. So, I have to be more careful about what I eat, especially cholesterol." (Muti, 34, Female, Woman 1)*

5.4.1.3.2 Sub-theme 2: Perceived Benefits by Men

The male participants at Puskesmas Kenanga did not undergo health check-ups themselves. However, those who accompanied their female partners during the health check-up recognised some potential benefits. Zidane mentioned that the shared experience with his partner fostered openness and a sense of care, which provided him with insight into his future role as a father.

> *"But, by accompanying my future wife, I knew about her condition because she told me that she was anaemic and needed to take iron tablets. This openness is good; it makes me aware of her health. When we get married, I would take my role as a husband." (Zidan, 31, Male, Couple 1)*

Nurdin felt he had received valuable information about his partner's health, which inspired him on how to enhance their married life. For instance, it motivated him to pay closer attention to his wife's health.

> *"Yes, I know my partner's health condition, so I can play a role (as husband) to at least pay attention and remind her, for example, what to eat, and what medicine to take. I am sure she will be happy to be cared for." (Nurdin, 28, Male, Couple 2)*

Fahmi had his own perspective. He viewed the opportunity to accompany his partner during the health check-up as a demonstration of his sincerity in building their relationship, hoping it would mark the beginning of a successful marriage.

"I experienced failure in my first marriage. I want to be successful in my second marriage, so whenever my role is needed, for example accompanying a health check, I am ready." (Fahmi, 24, Male, Couple 3)

5.4.1.4 Theme 4: Couple's Aspirational Needs

Theme four highlights the factors that service users perceived as facilitators and barriers in accessing the PPCC services. This theme suggests that at Kenanga Puskesmas, where the service model focuses on women, most female participants expected men to be involved in PPCC services. They believed that men's involvement is crucial for raising awareness of their essential role in family health, and that their participation could promote a sense of equality in accessing PPCC services. However, not all male participants were keen to engage in PPCC services. Some of the reasons for men's negative attitudes include perceptions of the services' ineffectiveness, concerns about the costs involved, fears that examination results might affect relationships, and certain personality traits, such as selfishness. These findings highlight the need for further efforts to increase motivation and address the barriers preventing men from participating in PPCC services.

5.4.1.4.1 Sub-theme 1: Perceived Facilitators

Although the premarital health check-ups at Kenanga Puskesmas were intended solely for women, female participants expected men to be involved and undergo health checks as well, to encourage active participation in family health. For Azizah, the presence and involvement of men were deemed important as they could help couples understand their roles and foster a new mindset regarding the significance of men in family health.

"It is hoped that the male partner is also checked for his health and be involved in the counselling session. So, we will together understand the preparation for pregnancy, and how to take care of the pregnancy. So, we understand our role. I am sure it will influence the way men think." (Azizah, 21, Female, Couple 1)

Other women recognised the need for men to be involved, believing it could foster a sense of equality between men and women. Pinkan expressed that this sense of equality would arise if both men and women were given equal access to preconception health check-ups.

"Yes, it is necessary (to involve couples). If women have to take care of their health, why not men? Marriage is a matter of both (laughs). For example, if there is an examination such as an HIV check, that's good. I think it's a good idea to get screened before marriage. So, for example, a health check like this is mandatory, that's okay." (Pinkan, 25, Female, Women 2)

Regarding male involvement, the male participant Zidan expressed his willingness to be included in the premarital health check-ups. He believed that if both partners were

involved, it could promote better communication between them.

> *"I am happy to be involved. This way, there will be no miscommunication between (us as) a couple." (Zidan, 31, Male, Couple 1)*

In relation to the lack of information about the PPCC services, women emphasised the importance of providing comprehensive information and disseminating it to the community. This would help couples understand the significance of PPCC services and encourage them to participate in preconception health programmes.

> *"Puskesmas must promote premarital health services to the community to motivate couples. Important information needs to be provided, for example, what the purpose and benefits are, should men be involved? Why? the procedures, and costs." (Rini, 22, Female, Couple 3)*

5.4.1.4.2 Sub-theme 2: Perceived Barriers

It appeared that men with negative attitudes towards preconception health services were most likely to refuse involvement. For instance, Nurdin found the process too lengthy and objected to the service fees. This indicated that men were not always willing to invest time and money in something they were uncertain about in terms of the benefits gained.

> *"I personally disagree (laughing) (with men's premarital health checks). Yes, it takes time. It also costs twice as much (laughing)." (Nurdin, 28, Male, Couple 2)*

Concerns about the presence of disease were another reason why men were reluctant to undergo health checks. This fear stemmed from the possibility of a negative impact on their relationship with their future wife.

> *"I am worried that the results (health examination) will show the presence of a disease. I'm afraid it could impact our relationship." (Fahmi, 28, Male, Couple 3)*

Certain male personality traits, such as selfishness, were also seen as barriers to engaging men.

> *"For me, I learned from my previous marriage. Based on my experience, basically, if a man is selfish and does not care, he definitely doesn't want to know about women's affairs. In the past, when I was pregnant and my son was sick, he did not care at all. It is very painful. So, it depends on the nature of the man's personality." (Muti, 34, Female, Women 1)*

5.4.1.5 Theme 5: Role of Social-cultural and Religious Beliefs

This theme illustrates that social norms and religious values shape life in society, including matters related to marriage, the relationship between husband and wife, and views on children. In this context, marriage and having children are considered sacred and must align with both social and religious norms. Men are seen as having an important role as protectors and providers. These findings suggest that, although the relationship

between men and women may be unequal, there is an idealisation of men's role in improving maternal health. This is exemplified by the expectation that men should provide healthy and halal food. Furthermore, given the high value placed on children and their position within the family, the health of the mother is considered crucial, as it directly impacts the child's well-being. This highlights the potential for empowering men to improve preconception health, given their strategic role within the family.

5.4.1.5.1 Sub-theme 1: Role of Social-cultural Beliefs

Most participants noted that their family traditions and practices had taught them that marital relationships require cooperation between men and women to ensure family health.

> *"In my family. The husband and the wife should be involved in the family's health because marriage is a matter for both." (Azizah, 21, Female, Couple 1)*

In this context, family practices, passed down through generations and embedded in their culture, dictated that relationships between men and women should adhere to traditional gender role beliefs.

> *"Yes, both must be involved (a tradition in the family). If the wife and husband know and care about the importance of health in the family then both of them can make good decisions. They may have their own roles, but they complement each other." (Pinkan, 25, Female, Women 2)*

Regarding sources of information, most participants noted that, in addition to what they learned from their families, they often sought information about the roles of men and women in family health from online platforms.

> *"My parents were old. They tend to use outdated principles regarding the role of men in the family. I often look for information about family's health from social media." (Nurdin, 28, Male, Couple 2)*

Most participants preferred and chose online sources because they saved time and allowed them to select information from a broad range of topics at their convenience.

> *"From Instagram, social media, Google. But I got more from social media because (they are) easy, fast and convenient, as learning from parents feels awkward. I feel reluctant to ask personal questions." (Rini, 22, Female, Couple 3)*

5.4.1.5.2 Sub-theme 2: Role of Religious Beliefs

Many participants held religious beliefs related to marriage and having children. Fahmi, who is Muslim, believed that his soulmate had been ordained by God (Allah in Islam) and that marriage was an expression of his obedience to the Creator. He viewed marriage as a blessing that could bring happiness to his family in both this world and the

hereafter.

> *“Marriage is (an act) of worship, (meant) to obey Allah's commands and follow the Sunnah of the Prophet. It’s not merely a union between two individuals. Hopefully, she (his female partner) is my soulmate given by Allah. I aspire to have a family, one that is blessed in this world and the hereafter.” (Fahmi, 28, Male, Couple 3)*

Zidan, also a Muslim, elaborated on the role of men within Muslim families. He explained that husbands have various roles and duties according to Islamic teachings, with their primary role being that of a leader. Consequently, men bear greater responsibilities than women. Regarding maternal health, men are tasked with ensuring the availability of healthy and halal food and providing increased attention to their wives during pregnancy.

> *“So, in Islam, a husband is the head of the family. His duties include providing a decent living for the family, in terms of food, clothing and shelter. For example, related to health, food must be halal and 'tayyib' (good). The husband is obliged to maintain the health of their family by paying attention to what all family members eat. The food eaten must be healthy (good) and halal so that the mother and children are healthy and full of grace. The husband should understand his wife and take care of her when his wife is pregnant and encourage her to breastfeed for two years.” (Zidan, 31, Male, Couple 1)*

In Muslim families, having children is considered important in addition to marriage. Pinkan, for instance, viewed children as successors to the family. She also believed that raising and educating children was a process of personal growth and a way to become a better person.

> *“For me, the significance of having children is that children are (my) successors. Having children is a way to learn to be patient.” (Pinkan, 25, Female, Women2)*

Zidan further elaborated on the role of children in Islam, explaining that Muslims view their children as supporters both in this world and the hereafter. Consequently, it is essential for parents to educate their children to become virtuous and moral individuals.

> *“Children are the biggest investment in this world and the hereafter, meaning that if parents educate their children well, the children will be able to become good human beings, able to maintain the reputation of their parents and make both parents proud. Meanwhile, what is meant by investment in the afterlife is that children's continuous prayers for their parents will reduce their parents' sins, so that Allah will be willing to send their parents to heaven. (Zidan, 31, Male, Couple 1)*

Meanwhile, Muti deliberately chose to remarry with the intention of having more children. She hoped that her children would be able to care for her in her old age.

> *“I want to have more children because children for me are hope. We take good care of our children so that they become a dutiful child to their parents. Later, when I am old, I want my children to take care of me.” (Muti, 34, Female, Women*

1)

The following section presents the findings of the thematic analysis from the service providers.

5.4.2 Themes from the Service Provider Participants

Four main themes, along with several subthemes, emerged from the analysis of the service providers' findings (see Table 5.4).

Table 5.4 Themes and Sub-themes from the Service Providers

Themes	Sub-themes
1. Context of PPCC services	1.1 Policy and regulation 1.2 Roles of Religious Affairs Office
5 Model of PPCC services	2.1 Concept of PPCC services 2.2 Service of Delivery
6 Facilitators and barriers	3.1 Facilitators 3.2 Barriers
7 Roles and values of being counsellors	7.4 Roles and responsibilities of a counsellor 7.5 Values of being a counsellor

5.4.2.1. **Theme 1: Context of PPCC Services**

This theme indicates that the Minister of Health's regulation was perceived differently by health professionals. It became evident that they believed there was no obligation to involve men in PPCC services and that the monitoring and supervision system was also weak. Additionally, the historical and pragmatic delivery of PPCC services was strongly influenced by Islamic values.

5.4.2.1.1 Sub-theme1: Policy and Regulation

The provision regarding PPCC services was understood by participants to be regulated by the Regulation of the Minister of Health of the Republic of Indonesia, which concerns health services for mothers and children. The ultimate goal of this regulation is to address maternal and infant mortality rates.

> *"Central government policies related to maternal and child health services, the priority is to reduce maternal and infant mortality. Government policies, especially those related to premarital health services, are regulated in the Regulation of the Minister of Health on pre-pregnancy health services." (Andi, 35, Male, Manager 1)*

Regarding PPCC services, it appears that the central government initially released a policy that allowed flexibility in the availability and implementation of these services at the provider level.

> *"All Puskesmas in Makmur Regency have implemented premarital health services but there is no national guideline of services and delivery. Each of them organises activities and services according to the prioritised problems in their working area and according to their respective abilities. Thus, the implementation in each health centre can vary." (Andi, 35, Male, Manager 1)*

However, not all health professionals were aware of the PPCC implementation guidelines, which appears to have led to differing understandings among professionals at the service provider level, including varied opinions on the necessity of involving men in PPCC services. Putri argued that the decision regarding the target of the service (whether for couples or only women) at Puskesmas Kenanga was based on the Minister of Health's Decree, which did not explicitly require both partners to undergo a health examination.

> *"For now, the target of the PPCC services is women because the focus is on women. To the best of my knowledge, the Minister of Health's Regulations do not state that men must be involved." (Putri, 49, Female, Manager 3)*

Interestingly, there appeared to be conflicting perspectives among the health professionals at Kenanga Puskesmas regarding the need to involve men. Andi, one of the managers, expressed the view that involving men was very important. However, he acknowledged that this could have financial implications, which is why the current examination process remained sub-optimal.

> *"Yeah, it's better to involve couples. At Kenanga Puskesmas, the PPCC services are still not optimal. The type of services only adapts to what is required by the KUA (Religious Office), namely TT injections and pregnancy tests. We cannot force couples to be checked for laboratory tests except for HB (haemoglobin), and blood type testing because it will increase the cost of the service." (Andi, 35, Male, Manager 1)*

Regarding the financing of PPCC services, the health professionals at Kenanga Puskesmas believed that the funds available from the local government were inadequate, as they did not cover all types of services. At that time, the government only subsidised the cost of TT vaccination for premarital health check-up services. When calculated, the total cost for this service amounted to approximately 5% of the Regional Minimum Wage.

> *"Funds from the local government are only for the 'Kelas Catin' service but it's limited, while the cost of the premarital health check-up service is paid by women. The government only covers the cost of the TT vaccination. The cost of this service is in accordance with the PERDA No.55 of Makmur Regency. The cost is for registration, laboratory check fees, and medication after the TT examination. The total amount is around Rp. 120,000.00." (Mawar, 44, Female, Manager 2)*

The lack of supervision from both central and regional governments highlighted a weak

monitoring system for the implementation of PPCC services, as evidenced by the absence of an evaluation mechanism for the programme.

> *"The evaluation of the PPCC services has not been carried out in a structured manner. Usually, evaluations are only carried out occasionally and informally. We (just) discuss it in a meeting." (Putri, 49, Female, Manager 3)*

5.4.2.1.2 Sub-theme 2: Role of the Religious Affair Office

The managers at Kenanga Puskesmas stated that outreach regarding the PPCC services has been conducted regularly in collaboration with relevant parties, including village officials and district and local Religious Affairs officials.

> *"We carried out dissemination through cross-sector coordination every three months. At the beginning of the year, we disseminated our programs. including the PPCC services, to Village Officials, sub-district, and KUA officials." (Putri, 49, Female, Manager 3)*

However, despite the dissemination programme being conducted, the quality of information and ongoing communication still required improvement to prevent misunderstandings.

> *Yes, I have (received information about PPCC), but I do not really understand exactly what the health check is for, and what the specific purpose is, which I believe is for the health of the prospective bride and groom. What we both know is that the Puskesmas conducts pregnancy tests and provides TT injections to brides. We need that information for marriage purposes." (Salim, 53, Male, Head of Religious Affairs Office)*

The inclusion of pregnancy tests in premarital health checks was influenced by both religious considerations and social phenomena specific to the Kenanga area.

> *"The pregnancy test is not a mandatory requirement for marriage, but it is very important for us, especially for the "Penghulu" to determine the marriage guardian and to make a decision on a widow's marriage proposal (Penghulu is a government representative responsible for leading the marriage ceremony and representing the guardian from the female side.). However, not all KUA offices in Indonesia inquire about this test. In the Kenanga area, we ask for pregnancy tests because the prevalence of pregnancy before marriage increases every year." (Salim, 53, Male, Head of Religious Affairs Office)*

Regarding the organisation of pre-marital guidance seminars, the Office of Religious Affairs was able to invite fewer than 50% of the total couples applying for marriage, due to limited funds.

> *"For marriage guidance seminars, not all prospective brides and grooms are invited due to limited funds. The couples we can invite are only around 60 people in one seminar, (and) in a year we can only do 4 times at most. In fact, in Kenanga District, approximately 500 couples apply for marriage in a year." (Salim, 53, Male, Head of Religious Affairs Office).*

In conclusion, the inclusion of pregnancy tests in PPCC services, initially rooted in Islamic values, demonstrates that these services were conceptualised and developed with consideration for local socio-cultural and religious values.

5.4.2.2. **Theme 2: Model of PPCC Services**

This theme indicates that, although health professionals conceptually recognise the importance of preconception health and understand the value of male involvement, the current priority for services is centred on pregnant women which mainly focuses on the physical aspect. The PPCC services are exclusively focused on women due to limitations at the service provider level, such as restricted laboratory examination capacity. The idea of providing preconception care before marriage arises from local cultural expectations that couples should conceive shortly after marriage. Furthermore, sociocultural factors are reflected in the practices of PPCC services through the inclusion of religious content, particularly Islamic teachings, within the educational and counselling programmes.

5.4.2.2.1 Sub-theme 1: Concept of PPCC Services

Interviews with managers at the Kenanga Puskesmas revealed that the primary goal of providing PPCC services was to address maternal mortality rates (MMR) and infant mortality rates (IMR) by improving women's overall health and pregnancy outcomes. Additionally, PPCC services were also expected to tackle local health issues, particularly stunting (a growth and development disorder in children caused by poor nutrition, recurrent infections, and inadequate psychosocial stimulation during pregnancy).

> *"The goal (of providing the PPCC services) is to reduce MMR and IMR. We continue to improve health services for pregnant women, but the health of women before pregnancy must also be considered. If all mothers are healthy, this will of course reduce the occurrence of complications in the pregnancy and for the baby. In addition, it is also expected that the PPCC services can reduce stunting rates in Kenanga region." (Andi, 35, Male, Manager 1)*

Despite recognising the importance of maternal health before pregnancy, health professionals at the Kenanga Puskesmas believed that services for pregnant women took precedence over preconception services. This emphasis on the central role of women in reproductive tasks appeared to lead to the decision to focus exclusively on women for PPCC services, resulting in the absence of preconception health check-ups for men at this Puskesmas.

> *"We provide PPCC services, but currently the priority is health services for pregnant women. At this time, we do not require health checks on both partners." (Mawar, 44, Female, Manager 2)*

The timing of providing preconception services was heavily influenced by local socio-

cultural and spiritual factors. The societal expectation to marry and the perceived importance of having children for family, religious, and community reasons were significant factors in determining the appropriate timing for these services.

> *"Most married couples plan for pregnancy, (and) usually after marriage they will get pregnant soon. This is something that is considered important in having a family, not only for the family itself and the extended family but also for society. Thus, the most appropriate time for preconception of health services is before marriage." (Putri, 49, Female, Manager 3)*

5.4.2.2.2 Sub-theme 2: Service Delivery

This sub-theme describes the process of providing PPCC services, beginning with the 'Kelas Catin' service, followed by the premarital health check-up service. During the data collection at the Kenanga Puskesmas, the 'Kelas Catin' service was temporarily unavailable due to restrictions imposed as a result of the Covid-19 pandemic, which prevented any observations from being conducted.

Kelas Catin

Although the Puskesmas was the primary provider of 'Kelas Catin' services, effective communication and support from stakeholders, such as the Religious Affairs Office and the Sub-district, were essential. For instance, Village Officials played a crucial role in identifying couples who would be invited to participate in the 'Kelas Catin' service.

> *"For 'Kelas Catin', before carrying out the activity, one week in advance we coordinated with cross-sectors, in this case, the KUA and the local Subdistrict office. To determine which couples to invite, we worked closely with village officials and village midwives. Village officials usually have data on prospective brides who have applied for marriage." (Andi, 35, Male, Manager 1)*

The health professionals recognised a lack of male participation in the 'Kelas Catin' service, despite the service being free of charge. Additionally, financial constraints created a gap between supply and demand, leading to unequal access to the 'Kelas Catin' service for everyone.

> *"We invite both male and female couples but it is usually the women who mostly like to come. Because of limited funds, we can only invite around 50 couples in one year, which is usually planned at two different times. It is small compared to the number of couples who applied for marriage" (Mawar, 44, Female, Manager 2)*

The content delivered in the 'Kelas Catin' service covered two main topics: health and religion. The health-related sessions involved a team of multi-professionals, including doctors, dentists, midwives, and nurses, although their numbers appeared to be limited. Interestingly, for the religious topics, there was only one speaker, who was exclusively from the Islamic faith.

"For health topics, the material includes preparation for pregnancy, reproductive health, sexually transmitted diseases, family planning, nutrition for pregnant women and vaccinations. The speakers are usually personnel who are available, those in charge of the programme such as doctors, dentists, midwives, and nurses. Meanwhile, the religious topic is usually about the concept of family in Islam, where the speaker is usually the Head of the Office of Religious Affairs." (Andi, 35, Male, Practitioner 1)

Premarital Health Check-up

The manager at the Kenanga Puskesmas stated that the implementation of premarital health check-up services needed improvement due to the limited capacity for laboratory tests and examinations for women.

"The premarital health check-up services are not yet optimal as we have not yet checked out all the necessary examinations, for example, to check for sexually transmitted diseases. Although in our region cases of hepatitis, syphilis and HIV are still often found in pregnant women, the health examination also does not involve couples." (Andi, 35, Male, Manager 1)

The sub-optimal capacity for laboratory tests was attributed to a shortage of chemical agents required to complete the processes.

"Triple Elimination (screening for hepatitis, HIV, and syphilis) at this Puskesmas has not yet been carried out. The consideration is that due to the limited availability of reagents (a substance used to cause a chemical reaction) for laboratory examinations." (Putri, 49, Female, Manager 3)

Regarding service user's mental health assessment, although health professionals understood the importance of assessing mental health, in practice, the assessments primarily focused on women's physical health.

"At Puskesmas Kenanga, a mental health assessment in the premarital health check-up has not been carried out. However, in my opinion, mental health checks on couples are important to determine the readiness of the bride and groom before marriage." (Andi, 35, Male, Manager 1)

Several factors contributed to the lack of mental health assessments for couples, including insufficient training and education among service providers, the absence of technical instructions, and the lack of mental health assessment tools.

"In my opinion, it is good to assess the mental aspect, but at this time we have not been able to do it because there is no clear instruction from the government about it. In addition, we are not ready because, of course, the health professionals involved should receive special training with clear assessment tools and, of course, a clear path to follow up if there are findings." (Mawar, 44, Female, Manager 2)

Putri explained that cases of mental disorders among prospective brides and grooms had never been identified. This was due to the local cultural belief that household

matters, including mental health issues, are private and should not be shared with others. According to Putri, the cultural context makes it challenging to disclose psychological problems.

> *"So far, we have never had such a case (mental disorder). Women also hardly convey their psychological problems to health professionals. It's because, in our culture, talking about personal problems to other people is considered not good because it is like revealing disgrace." (Putri, 49, Female, Manager 3)*

5.4.2.3. **Theme 3: Facilitators and Barriers**

This theme highlights that there were more barriers than facilitators in the implementation of PPCC services at the Kenanga Puskesmas. Facilitators included the willingness of health professionals to provide PPCC services, the availability of laboratory facilities for testing and screening, the Puskesmas hall, and the potential involvement of parents. Barriers included issues from both service providers and service users. For service providers, barriers included differing perceptions and understandings of PPCC services, limited staff, restricted laboratory capacity for testing and screening, and time constraints. For service users, barriers are generally related to access issues, such as distance, work commitments, and negative attitudes towards PPCC services.

5.4.2.3.1 Facilitators

From the health professionals' perspective, their willingness to provide PPCC services can be seen as a facilitator.

> *"We have human resources including doctors, midwives who are ready to provide the PPCC services." (Putri, 49, Female, Manager 3)*

Furthermore, the availability of facilities and infrastructure at the Puskesmas, such as the hall, laboratory, and land, were considered valuable assets in supporting the PPCC services.

> *"We have supporting facilities such as well-equipped halls and laboratories, as well as, a land to expand the building." (Mawar, 44, Female, Practitioner 2)*

Regarding the involvement of men in preconception health services, the role of parents was deemed crucial. In local culture, marriage is viewed as a family affair, and parents hold significant responsibility towards their children, even at the stage of marriage. Consequently, parents are expected to guide and advise their children, particularly if the results of health check-ups do not meet expectations. The presence of parents was considered potentially beneficial in reducing the likelihood of conflicts between couples.

> *"To involve men, of course, further analysis is needed, especially in terms of health checks. I think it is necessary to involve (couple's) parents because, in our*

culture, parents are responsible and obliged to marry off their children. So, whatever happens in the marriage process, parents must definitely be involved. This is necessary, so that couples can undergo a health examination. Thus, later whatever the results of the examination they can accept them." (Putri, 49, Female, Manager 3)

5.4.2.3.2 Barriers

Among the health professionals at Puskesmas Kenanga, there were differing views regarding the priorities of PPCC services. The decision not to prioritise PPCC services has affected the level of support from related parties for the programme.

"We still have differences in understanding and attitudes between managers and implementers. This happens because the PPCC has not been included in the priority programme of the Puskesmas yet. Consequently, its implementation is not integrated, which means that all related parties do not have the same vision and commitment. Unlike the service for pregnant women, the Regent, the Head of the Health Office, the Head of KUA, and the Head of the Sub-district, all know (about it). So, support is available from various parties, including from the village fund." (Andi, 35, Male, Manager 1)

For the 'Kelas Catin' service, two common barriers identified were the limited number of expert speakers and the lack of learning support facilities.

"The speakers were inconsistent, depending on who was available, and there were no materials to support the educational process, such as guide book, videos or flipcharts." (Mawar, 44, Female, Manager 2)

As for the premarital health check-up, time limitations were a common barrier to providing counselling, as it had to compete with other services, such as those for pregnant women. Additionally, a shortage of healthcare professionals was another frequently reported barrier among most PPCC service providers.

"The problem is that the time for counselling is limited because of the large number of patients, most of whom are pregnant women, and the health service providers are limited too." (Mawar, 44, Female, Practitioner 2)

Service providers acknowledged that service users might face external barriers to attending the services, such as work commitments and the distance to the Puskesmas. Additionally, attendance was influenced by couples' perceptions of their own health status. For example, Fahmi strongly believed he was healthy and thus saw no need to undergo a health check.

"It is very difficult for men because of various reasons, such as work and place of residence. They sometimes also feel they do not need to be checked. They said "wong aku sehat-sehat, wae" (Javanese, "I am just feeling healthy")." (Putri, 49, Female, Manager 3)

Requiring men to undergo examinations also raised concerns about the potential

increase in service costs, which would be borne by the couples. This issue was considered a significant barrier that could deter couples from pursuing premarital health check-ups.

> *"We cannot force couples to do a laboratory check because it has something to do with costs as it will not be covered by BPJS (national insurance). The problem is that not everyone is willing to spend money to pay for their own health check." (Andi, 35, Male, Manager 1)*

5.4.2.4 Theme 4: Role and Value of Being a Counsellor

This theme reveals that being a counsellor in the PPCC service was viewed as a professional responsibility and, for some health professionals, offered intrinsic rewards. However, several inherent challenges need to be addressed to enhance the competence of professional counsellors.

5.4.2.4.1 Role and Responsibilities of a Counsellor

For most health professionals, serving as a counsellor in the PPCC service was regarded as a professional responsibility associated with their role as midwives.

> *"I have been sworn in as a midwife. One of my professional responsibilities as a midwife is to educate mothers, which includes education for couples before marriage." (Mirna, 43, Female, Practitioner 2)*

Nevertheless, health professionals recognised that being a midwife did not inherently make them experts on every topic, including preconception health, which was relatively new to some. The lack of training and knowledge in this area had led to a deficiency in self-confidence among them.

> *"Becoming a counsellor is my professional responsibility as a midwife. However, frankly, I lack confidence (in providing counselling) because the topic of preconception is something new for me and I have never been given any special training on it." (Ningsih, 46, Female, Practitioner 3)*

The majority of participants recognised the importance of specialised training but noted that support for competency development was lacking. They reported that most of their education on preconception care came from their own efforts, such as searching online sources. However, the limited availability of relevant information made it challenging for them to find materials that met their needs.

> *"Training is important because becoming a counsellor in the PPCC services requires special knowledge and skills. But since there was no training, I tried to find study materials myself, for example, from Google but it was also difficult haha (laughing)." (Andi, 35, 44, Male, Practitioner 1)*

In addition to didactic methods, they also learned from their peers.

"We learn on our own. Usually, new info and training materials from colleagues are shared in the WhatsApp group." (Ratih, 44, Female, Practitioner 4)

5.4.2.4.2 Value of Being a Counsellor

For some health professionals, the desire to help others was felt to be a strong motivation.

"For me, to be honest, this comes from the heart. I want them (women) to be healthy so they can have a healthy pregnancy. Even though they are not my family, when I found out that a mother who used to be severely anaemic, I educated her, I took care of her, (and) it turns out she is now pregnant and the baby is healthy. It gives satisfaction in itself." (Mawar, 44, Female, Practitioner 2)

Personal characteristics such as caring and empathy motivated health professionals to become counsellors. However, it cannot be denied that exhaustion and limited time sometimes diminished their motivation to provide compassionate counselling.

"What drives me is that personally feel sad when I see mothers with health problems that could actually be prevented. So, I want to give education to mothers to avoid health issues. What demotivates me is usually business or numerous activities that leave me feeling tired." (Ratih, 44, Female, Practitioner 4)

Meanwhile, those who held dual roles as both managers and practitioners acknowledged that these roles mutually benefited each other.

"Honestly, I enjoyed having dual roles. So, when I play my role as a manager, I use findings in the field when providing services to make analyses and prepare activity plans. When I provide services, I can interact directly with women and observe the barriers in the field first-hand." (Andi, 35, Male, Practitioner 1)

The next section presents the results of the analysis of documents used at Kenanga Puskesmas.

5.5 Document Analysis

The document analysis process is detailed in Chapter 3, Methods, under sub-topic 3.3.7.2.1.1 Document Analysis. Five documents used at the Kenanga Puskesmas were analysed. The institutional documents were obtained from health professionals with the approval of the Head of the Kenanga Puskesmas. Meanwhile, personal documents were sourced from the couples or women. The documents analysed include the cover letter, laboratory examination referral letter, leaflet, health certificate, and standard operating procedures (SOP). A summary of these implementation documents is presented in Table 5.5.

Table 5.5 Summary the Implementation Documents Used in Kenanga Puskesmas

No	Name of Document	Sources
1.	Cover letter	Couples
2.	Referral letter for laboratory check	Couples
3.	Leaflet	Couples
4.	Health certificate	Kenanga Puskesmas
5.	Standard Operational Procedure (SOP)	Kenanga Puskesmas

PPCC services are provided based on local standard operating procedures (SOP). Administratively, at the Kenanga Puskesmas, couples are not required to submit a letter requesting registration for PPCC services. Since the services at the Kenanga Puskesmas focus solely on women, laboratory examinations are only conducted for women. These examinations include tests for haemoglobin levels, haematology, and pregnancy. The health certificate is designed to provide information about pregnancy test results, which is addressed to the Religious Office. The format and content of this certificate differ from the model outlined in national guidelines and are not the same as the health certificate issued by the Melati Puskesmas. Notably, if the pregnancy test result is positive, the certificate includes additional information regarding the gestational age and estimated date of birth. This information is particularly useful for officials at the Islamic Religious Affairs Office when determining marriage laws, especially within the Islamic religion.

In conclusion, the document analysis reveals that Kenanga Puskesmas uses its own version of the document, with differences in concept, format, content, and usage compared to the examples provided in the national guidelines and the documents used at Melati Puskesmas. These variations are specifically designed to align with local policies, available resources, and address religious needs. This finding reinforces the results of the interviews and observations, highlighting that the implementation of PPCC services is managed individually by each Puskesmas, with the integration of religious values, particularly Islam, being evident in the design and use of routine documents.

5.6 Summary of Findings from Case Two

Key Messages:

- ✓ The PPCC services were poorly publicised and inadequately understood by the service users. After receiving the premarital health check-up services, some

women demonstrated increased knowledge, but this was limited to health preparation before pregnancy.

- ✓ Most service users were dissatisfied with the services provided due to various issues, such as a lack of privacy and confidentiality due to narrow and overcrowded rooms, financial burdens, and the unfriendly attitude and perceived incompetence of the health professionals.
- ✓ Although both service users and service providers recognised the importance of involving men in PPCC services, the current focus at Kenanga Puskesmas remains exclusively on women.
- ✓ Men responded differently regarding their involvement in PPCC services; some believed it was necessary, while others underestimated its importance due to negative perceptions about the service, such as doubts about its effectiveness, the burden of costs, and concerns about the results of the health examination.
- ✓ Despite the implementation of PPCC services, more barriers were encountered than facilitators. Nevertheless, the service has shown potential to improve preconception health, especially for women.
- ✓ The engagement of faith organisation and integration of sociocultural and religious values in PPCC may facilitate the provision of more acceptable and effective services in society.
- ✓ The implementation documents used at Kenanga Puskesmas were conceptualised and adapted to align with local goals, models, and interests, including fulfilling marriage requirements, particularly for Muslims. This indicates a lack of clarity in the implementation of national guidelines, resulting in varying service practices.

5.7 Chapter Conclusion

Chapter 5 has provided a detailed description of the findings from case two: the implementation of PPCC services at the Kenanga Puskesmas. It is important to note that participants in case two received only the premarital health check-up services, as the 'Kelas Catin' service was suspended due to the COVID-19 pandemic. The next chapter will present the synthesis of all findings.

Chapter 6 Overall Synthesis of the Findings

6.1 Introduction

Chapters 4 and 5 presented the findings from Melati Puskesmas (case one) and Kenanga Puskesmas (case two). These findings provided a deeper understanding of the implementation of PPCC services at the individual case study sites. This chapter focuses on the process and results of the cross-case synthesis. This chapter aims to synthesise all the findings, including interviews, observational data, and documentary analysis, to produce new knowledge and understanding. The cross-case synthesis employs a narrative synthesis technique, using an analytical framework informed by Yin (2018). The rationale for choosing narrative synthesis as a method for cross-case synthesis is detailed in Chapter 3. This chapter concludes with a summary and the key messages from the .

6.2 Process of Cross-case Synthesis

The synthesis method was selected based on the interpretivist paradigm adopted in this PhD study, which posits that reality can be understood subjectively from diverse perspectives (Junjie and Yingxin, 2022). According to Alharahsheh and Pius (2020), the ontological position of interpretivism is grounded in constructivist ontology. This perspective emphasises the importance of cognitive orientation and asserts that social processes are shaped by human interactions and actions, assuming that social structures are not naturally formed. Based on these philosophical assumptions, data interpretation was required to derive meaning from the collected data. To achieve this, an interpretive synthesis approach, conducted inductively, was deemed most suitable for this PhD study. This cross-case synthesis focuses on transforming synthesis findings into knowledge products. Consequently, the output of this synthesis is a conceptual framework or new insights into PPCC services.

The cross-case synthesis process commenced upon the completion of the within-case analysis for each setting. The analysis then proceeded with a cross-case synthesis using a case-based approach, aggregating cross-case findings as suggested by Yin (2018). This process is crucial for capturing the comprehensive narrative of the case under study (Yin, 2018). The technique employed for cross-case synthesis is the narrative synthesis approach, detailed in the following section.

6.3 Phases of Cross-case Synthesis

Initially, the researcher did not specify the cross-case synthesis technique to be used. However, as the thesis progressed and knowledge about the data's characteristics and suitable synthesis approaches from the literature was gained, this information formed the basis for selecting the appropriate method. Consequently, the narrative approach was adopted as the researcher's understanding evolved throughout the PhD journey.

The analytical framework used for the cross-case synthesis was informed by Yin (2018), which consists of three phases:

1. Mobilising knowledge from individual cases
2. Exploring relationships in the data and developing an initial synthesis
3. Synthesising findings

Phase 1: Mobilising Knowledge from Individual Cases

The cross-case synthesis process was conducted inductively, beginning with the mobilisation of knowledge from cases one and two. Key messages for each theme from the two cases were grouped using tables for further analysis (see Appendix 26: Summary of Findings of Two Cases). This technique enabled the researcher to develop conceptual thinking by identifying trends and unique features in the themes of the individual cases. Once all the key messages were displayed in the table, similarities and differences between the data were identified to discern patterns and explore relationships in the next stage.

Phase 2: Exploring Relationships in the Data and Developing an Initial Synthesis

In this phase, the identification of patterns and trends was carried out by selecting, focusing, and abstracting data. An illustration of the process used to identify these patterns is provided in Appendix 27 Example of Selecting, Focusing, and Simplifying Process.

Summary results of Phase 2

The relationship exploration process was conducted to assess whether a consensus had been reached based on the two cases. This was achieved by identifying the key messages from the two cases and focusing on the same dimensions. This process produced four classification dimensions: 1) Experience of receiving PPCC services; 2) Management and organisation of PPCC services; 3) Provision of PPCC services; and 4) Access to PPCC services.

After identifying and focusing, the abstraction process continued by exploring relationships within and across cases. This involved comparing similarities and

differences in processes, events, and practices between cases to identify patterns unique to each case. Analysing relationships within and between the cases facilitated an assessment of the overall strength of the evidence available for drawing conclusions. The comparison process was instrumental in illuminating, critiquing, or challenging the emerging findings or interpretations, thus ensuring robust analytical results. Through this systematic comparison process, an initial synthesis was developed. The process of identifying patterns between the two cases is detailed in Appendix 28 The Patterns Emerging from Cases One and Two.

Initial synthesis based on four dimensions

Synthesis 1. Experience in receiving PPCC services

Across both cases, service users were generally unfamiliar with PPCC and reported less favourable experiences with the services, often attributing this to unstructured service delivery, inadequate facilities, and unequal access. Many users highlighted that inconsistent attitudes and behaviours among health professionals negatively impacted service quality. However, users who participated as couples reported more positive experiences, noting that the involvement of both partners fostered stronger relational and health benefits. Despite social norms that limit men's involvement in maternal health, the cultural and religious context—where men are positioned as central figures in the family—presents an opportunity to expand men's roles in supporting couples' pre-pregnancy health and strengthening relationships.

Synthesis 2. Management and organisation

The organisation and management of PPCC services in both cases revealed substantial gaps, including poor coordination among providers, limited oversight and monitoring, insufficient funding, and differing interpretations of PPCC services among health professionals. Moreover, the integration of sociocultural practices deeply rooted in Islamic values highlights the influence of religious organisations. These values shape both the approach to and expectations for service delivery, suggesting that effective management of PPCC in this context necessitates a nuanced understanding of these cultural dynamics.

Synthesis 3: Provision of PPCC services

While PPCC service provision generally aligns with national guidelines, it is locally adapted to address specific needs through multisectoral collaboration involving education, counselling, and basic health checks. However, these services often lack a consistent structure and comprehensive scope, particularly in terms of men's involvement, the content of health examinations, and the standardisation of

documentation. These inconsistencies may arise from differing perspectives among health professionals regarding the role and scope of PPCC, as well as the transitional phase of national policy implementation. Furthermore, the delivery of PPCC services is tailored to local cultural and religious contexts, incorporating religiously aligned counselling and premarital health checks, illustrating the cultural and religious significance embedded within preconception services in this setting.

Synthesis 4: Access to Service

Access to PPCC services remains constrained by several barriers, including insufficient funding, financial burdens on users, uneven service availability, geographic challenges, and cultural factors. These limitations contribute to significant inequalities in service access, underscoring the need for more structured, accessible, and equitable delivery models that account for the socio-economic and cultural context.

After developing an initial synthesis, the process proceeded to synthesise all findings, which was conducted in the subsequent phase.

Phase 3: Synthesis of Findings

This final stage involves the development of the overall synthesis.

Overall synthesis:

The PPCC service programme offers great potential to improve couples pre-pregnancy health and strengthen relationships by involving both partners, particularly when tailored to align with local religious and socio-cultural values. Findings from the case studies suggest that while the current services are valued, the limited involvement of male partners diminishes their overall impact. Integrating culturally relevant practices, such as incorporating Islamic teachings and collaborating with religious institutions, has contributed to increased acceptance and engagement. However, further improvements in managerial and organisational practices are essential to ensure that service delivery is consistent, equitable, and accessible. Addressing these challenges—by expanding service coverage, standardising structures, enhancing access, and fostering positive user experiences—will be critical to meeting the diverse needs of couples and maximising the programme's benefits for maternal and family health.

6.4 Summary of Cross-synthesis

Key Summary
✓ The cross-case synthesis, using narrative synthesis, produced four initial syntheses. ✓ The overall synthesis highlights the value and potential of implementing PPCC services to enhance couple's pre-pregnancy health and relationships in Indonesia. However, this chapter also highlights the identified challenges that must be addressed to improve management and organisation, provision of service delivery, equitable access to the service, and to promote positive experiences for couples. ✓ The uniqueness of PPCC services lies in the integration of cultural and religious beliefs, predominantly rooted in Islamic values, which are widely accepted by society.

6.5 Chapter Conclusion

This chapter details the process and findings of the cross-case synthesis, employing narrative synthesis and an analytical framework based on Yin (2018). The synthesis process yielded four initial syntheses, which were subsequently integrated to aggregate a comprehensive overall synthesis. This combined synthesis offers new insights into the implementation of PPCC services and their broader applications.

The following chapter will present a comprehensive discussion of the integrated findings from this chapter, including interpretations of the main results, their relation to existing theories, the implications, and conclusions.

Chapter 7 Discussion

7.1 Introduction

This study aimed to explore the concept and nature of premarital preconception care services in Indonesia from the perspectives of service providers and users. A scoping review was conducted to provide insights into the provision and models of preconception services in lower- and middle-upper-income countries (LMUICs), identify gaps in the existing literature, and refine the research questions. A qualitative comparative case study was the primary research design employed to achieve the overall aim. This study utilised three data collection methods: interviews, observations, and documentary analysis. Thematic analysis was applied to the data from interviews and observations, while manifest content analysis was used for the documentary data. The analysis proceeded in three stages: 1) within-case analysis, 2) cross-case analysis, and 3) overall synthesis. The key findings from interviews, observations and documents from the two cases were then cross-synthesised to obtain an overall synthesis. Narrative synthesis was used as a specific technique to assist the cross-case comparative process.

Chapter 7 aims to present an overall discussion and draw conclusions from this study. It begins with an overview of the study's aim and research questions, followed by a highlight of the new knowledge contributed by this PhD study. The discussion section interprets the findings and connects them to the context and background presented in Chapters 1 (background and study context) and 2 (scoping review), as well as broader theory and literature. The theoretical model 'Quality of care for maternal and new-born health: A monitoring framework for network countries' introduced by WHO (2019) is utilised to explain the findings of this study. The strengths and limitations of this PhD study are identified, followed by implications and recommendations for practice, policy, education, and further research. The chapter ends with a brief reflection by the researcher on her learning experiences during the PhD journey and the positionality statement before presenting the study's conclusions.

7.2 Overview of the Study Aim, Research Questions, and Contribution to Knowledge

The aim of this study was to explore the concept and nature of premarital preconception care (PPCC) as a means of improving couple’s pre-pregnancy health.

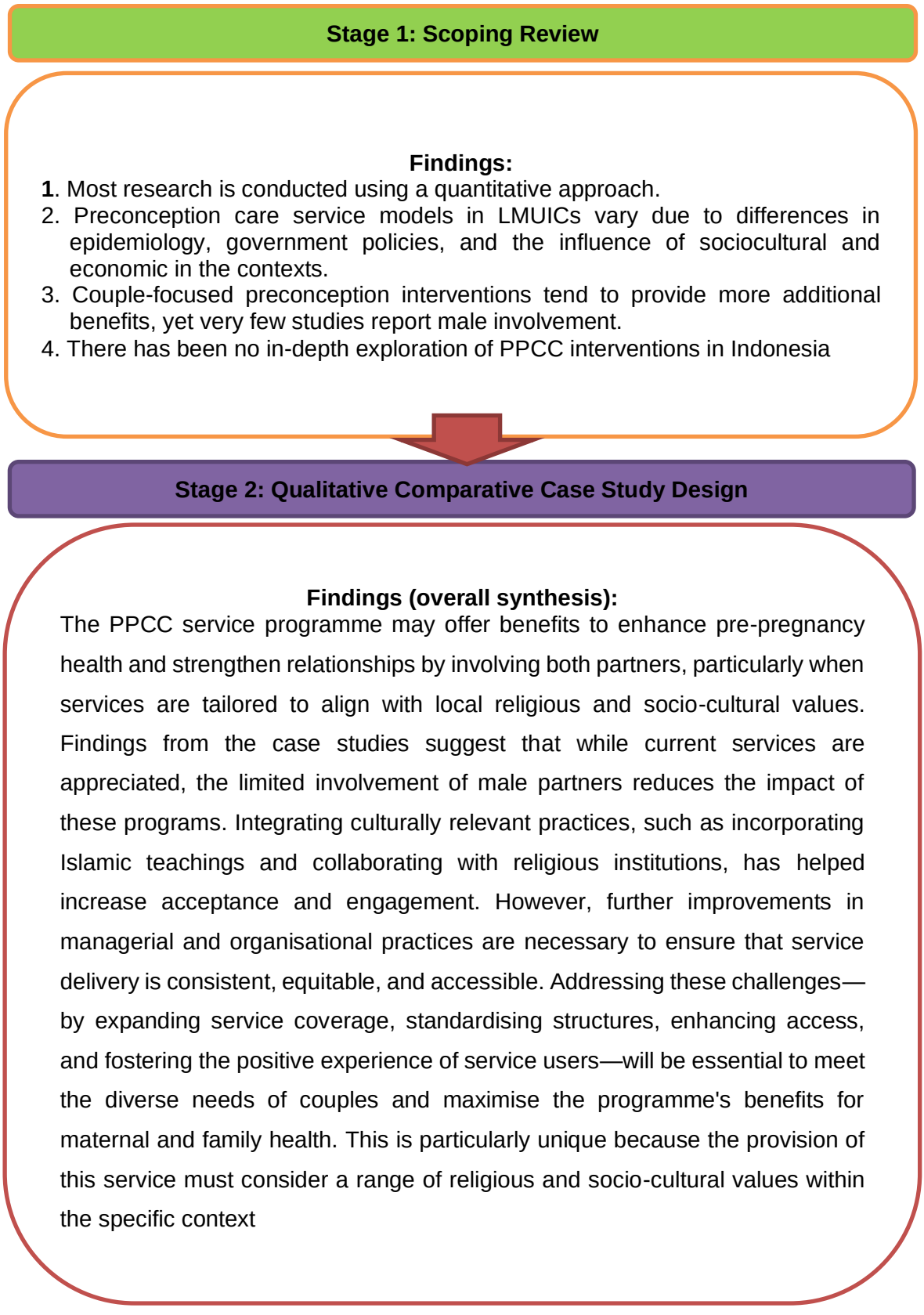
This study proposed four research questions:

1. How did service users perceive and respond to the PPCC services they receive?
2. How did service providers manage PPCC services?
3. How were PPCC services provided?
4. How were PPCC services accessed?

To address the research questions, the study was conducted in two stages. The first stage involved a scoping review, which informed the design of the second stage. The second stage employed a qualitative approach using a comparative case study design, with the analysis process consisting of three stages: within-case analysis, cross-case analysis, and overall synthesis.

The findings of the first stage revealed that the provision and models of preconception care services involving couples in LMUICs varied due to several factors, including epidemiology, government involvement, and local socio-cultural and economic conditions. Another significant finding was that although the service model was designed to involve couples, the focus of this service intervention was predominantly on women, with most studies employing a quantitative approach. In addition, little is known about PPCC intervention in Indonesia. The second stage of the study produced an overall synthesis, providing valuable insights into premarital preconception care services in Makmur Regency, Indonesia. Figure 7.1 presents an overview of the main findings from both stages.

Figure 7.1 Overview of the Main Findings of Studies 1 and 2



The findings of this PhD study support the study proposition, with sociocultural and religious beliefs prominently influencing almost all aspects of the service:

1. Service users' perceptions of PPCC services are shaped by several aspects, including effective communication and information, respect and dignity, emotional support, service effectiveness, structure and facilities, access to services, and continuity of care (Nuri et al., 2019; WHO, 2019a; Bellio and Buccoliero, 2021).
2. The management and organisation of PPCC are influenced by several factors such as leadership, the effectiveness of managerial functions (communication, coordination, monitoring, and supervision), education and training, resource management, collaboration and cooperation among providers, and the roles of (Mosadeghrad, 2014; Valaitis et al., 2018; WHO, 2019a).
3. The delivery of PPCC services is influenced by provider behaviour and systems related to knowledge and guidelines, opinions about the scope of practice, work culture, clinical site structure and safety, and the functioning of referral systems system (WHO, 2019a; Nacev et al., 2023).
4. Access to PPCC services is influenced by factors such as cost, the structure and availability of services, service needs, fairness in receiving services, geography, and culture (WHO, 2019a; Admiraal et al., 2022).

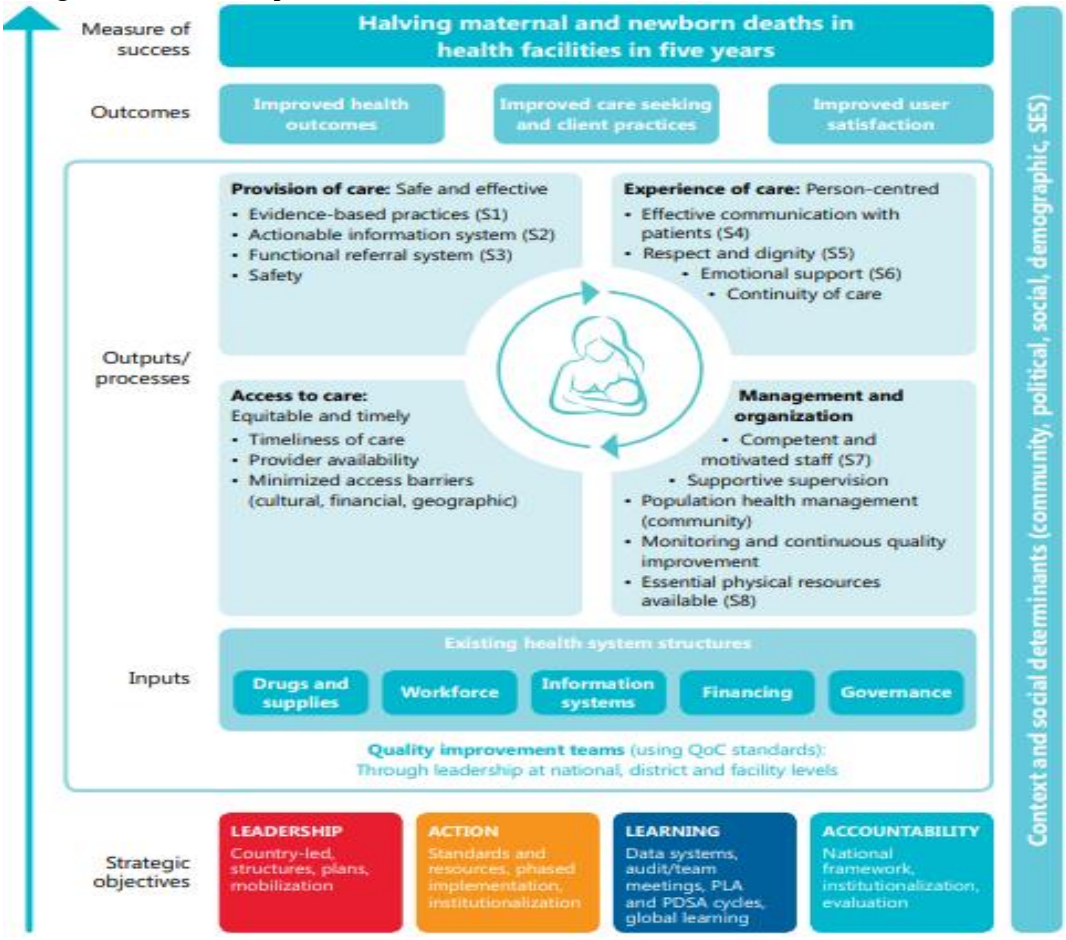
7.3 Interpretations of Findings

Research paradigms influence researchers' epistemological perspectives, shaping how they frame research questions, choose methodologies, and interpret results, ultimately impacting the understanding and contribution to knowledge (Tong, 2014). The interpretive paradigm used in this PhD study allows for in-depth understanding of social reality and focusing on subjective experiences.

This section discusses the overarching main findings of this PhD thesis using the conceptual framework “Quality of care for maternal and new-born health: A monitoring framework for network countries” adopted from WHO (2019). According to WHO, quality of care is defined as the extent to which health services provided can improve desired health outcomes for individuals and populations (WHO, 2018). This framework offers conceptual guidance applicable across the health care continuum, such as preconception care interventions, which are highly relevant to ending preventable maternal mortality (EPMM) and new-born deaths (WHO, 2015). The EPMM's targets and strategies serve as a strategic framework for developing evidence-informed, context-specific intervention programs by focusing on eliminating disparities in access, quality, and service outcomes within and between countries (WHO, 2015). This framework is

used to explain the context and connections between strategic objectives, inputs (existing health system structures: information systems, government, workforce, and financing), processes (management and organisation, service provision, access to services, and the experience of receiving services), and outcomes (improved health, improved care-seeking and client practices, and enhanced user satisfaction). While this study primarily focuses on processes and socio-cultural and religious beliefs factors, it also touches on inputs such as the role of government, health service financing, and information systems, although findings in these areas are limited. Therefore, the study's background, analysis of the study context, findings from the scoping review, and broader theoretical and literature studies are used to support and interpret the findings. WHO recognises that each country has unique characteristics essential for building a robust maternal and new-born monitoring service system. Within these processes, all countries should aim to capture four central elements: management and organisation, provision of care, access to care, and experience of care. The "Quality of Care for Maternal and New-born Health" framework is illustrated in Figure 7.2.

Figure 7.2 "Quality of Care for Maternal and New-born Health" Framework



Source: WHO (2019a)

This discussion begins by examining the management and organisation of PPCC and

how they shape individual experiences. It then addresses aspects of service delivery and access to services, followed by the experience of receiving services. Throughout the discussion, the strong influence of socio-cultural and religious beliefs in the study context is interwoven.

7.3.1 Management and Organisation of PPCC services

Management of PPCC services

This PhD study demonstrated that, based on national regulations (Ministry of Health No. 97 in 2014 and No. 21 in 2021), the management and organisation of PPCC services were a shared responsibility of central, regional, and district/city governments. However, coordination and cooperation for both the PPCC implementation seem inadequate, which can lead to the gaps in service, resulting in sub-optimal service delivery and uptake. This finding is in line with previous research by M'Hamdi et al. (2017), who also identified poor coordination and organisation of preconception care as barriers affecting the uptake and delivery of services.

The success of the PCC program requires collaboration and partnership from various sectors. Collaboration can involve sharing resources, expertise and best practices; these could also improve the effectiveness of coordination and communication (Khekade et al., 2023). However, this PhD study found that communication and collaboration between sectors still need to improve, and commitment to stakeholders is still low because PPCC is not a priority program. Partnerships with stakeholders and community organisations will be very useful in addressing social determinants of health that impact PPCC access, for example socio-cultural factors. Additionally, policymakers need to be involved in advocating for policies that support and prioritise PPCC services and allocate resources accordingly (Verbiest et al., 2016).

In a broader context related to the health service systems per se, the implementation of a decentralised health system can have both positive and negative effects on health services. An evaluation in 2001 showed that Indonesia experienced improvements in health service infrastructure, increased life expectancy, and reduced infant mortality as a result of decentralisation (Agustina et al., 2018). However, this fragmented healthcare system also presents challenges, including disparities in resources, services, and health outcomes between provinces (Mahendradhata et al., 2017). A systematic review by Rintani and Wibowo (2019) found that decentralisation led to fragmentation of health services, resulting in unequal access and exacerbating health disparities between districts/cities and provinces. These findings are supported by the Directorate of Population and Labor Statistics (2020), which highlights a significant gap in maternal

health indicators: mortality and morbidity rates (MMR) across provinces. While the MMR in the Java-Bali region is consistent with the national average, it remains unacceptably high in the Papua and Maluku regions (Directorate of Population and Labor Statistics, 2020). This disparity reflects a gap in local governments' capacity to manage maternal and child health effectively. The most frequently reported issue since the decentralisation of health services has been the inadequate capability and capacity of local governments in planning, managing, and utilising health resources (Rintani and Wibowo, 2019). Because of this fragmentation, people may receive disparate and non-standard services, making it more difficult to provide equal and quality care.

Regarding health financing, even though Indonesia's health spending budget has increased gradually (3.41% of Gross Domestic Product/GDP in 2020, and 3.71% of GDP in 2021), the percentage remains below the WHO target. WHO mandates that every country's government should spend at least 5% of GDP on health financing (Anonim, 2019; Ciptadana Sekuritas Asia, 2024). Indonesia's health budget is also lower than that of Rwanda, a lower-income country that allocated 7.2% of GDP to health in 2021 (The World Bank, 2024a). Despite the Indonesian Government's commitment to scaling up reproductive, maternal, neonatal, and child health (RMNCH) services to significantly reduce maternal and infant mortality, the allocated budget is relatively modest. For instance, in 2020, only 17.8% of the total health budget was allocated to RMNCH services (Soewondo et al., 2022). Of this amount, 37% was designated for antenatal care, 38% for family planning, 20% for delivery at health facilities, and 5% for child health interventions, with no specific allocation for pre-pregnancy services (Ali et al., 2020). Regarding PPCC services, this PhD study found that the funding comes from the regional income of Makmur Regency and is limited. The limited funds result in minimal facilities and low competency of health professionals due to lack of training, and these funds can only be allocated for 'Kelas Catin' services. Meanwhile, the costs of premarital health examinations are borne by the individual/couple; this cost burden may cause barriers to access to services. This finding indicates that inadequate financing has posed a significant challenge in improving the quality and accessibility of PPCC services. These insufficient financial resources can limit the development and implementation of a comprehensive PCC program due to limited funds for developing the competency of service providers and providing infrastructure (Khekade et al., 2023). This finding aligns with previous studies in Sub-Saharan Africa (SSA), which have noted that a lack of resources, especially funding, hinders the prioritisation of preconception services, leading to poor structuring and irregular opportunistic delivery (Shawe et al., 2015; Ukoha et al., 2022; Ndou et al., 2023).

Related to national health insurance (JKN), Indonesia has had a social security

administering body since 2011, however, despite rapid development and significant increases in coverage, the JKN scheme has not been able to ensure equitable health protection and access to quality health services for all Indonesians. According to Minister of Health Regulation No. 43 of 2019, Puskesmas should prioritise promotive and preventive health services. However, data indicates that funding is predominantly allocated to curative services, which receive 60% of the total health expenditure, while prevention and health promotion receive relatively low funding (21.8%) (Soewondo et al., 2022). Even though PPCC services are included in the promotive and preventive service categories, BPJS does not cover the costs for these services, which may pose a significant barrier for some couples.

Another underlying factor contributing to the challenges in managing the PPCC programme may be related to the health information system (WHO, 2019a). Indonesia has developed a national information system (SIKNAS) which is connected to the district-level health information system (SIKDA) (Mahendradhata et al., 2017). However, this PhD study reveals that there is no established system for recording and reporting preconception services. This gap is partly due to a lack of healthcare workers with administrative responsibilities and insufficient awareness among staff of the need to monitor the quality of care, indicating a weak information system. Many countries with weak information systems also suffer from a lack of primary data necessary for routine measurements (WHO, 2019a). Without an integrated national information system and appropriately trained staff, effective supervision and monitoring across Indonesia's large and diverse territory will be challenging. Therefore, an adequate reporting and documentation system is essential because it will facilitate the assessment of the impact and effectiveness of interventions (Khekade et al., 2023).

This PhD study highlights the crucial role of government in establishing preconception services that are comprehensive, quality, and accessible to all. Achieving this requires a paradigm shift to set clear goals and strategic directions for improving preconception health, alongside the provision of clear policy guidelines and financial support (WHO, 2019b). The government must strategically finance programmes, involve the entire health system, and enable a whole-system approach (Khekade et al., 2023). High-quality preconception health management requires a broad ecological framework that encompasses institutional influences, interpersonal networks, and environmental factors (Boyle et al., 2022). In this case, government institutions are essential in providing policy support and facilitating stakeholder involvement (Boyle et al., 2022). The government’s responsibilities include creating a supportive environment, fostering relevant policies, and securing financial commitments from state leaders, development partners, and funders (WHO, 2015). In healthcare financing, political leaders and financial decision-

makers must ensure adequate resource allocation through transparent budgeting, accountability, non-discrimination, and active participation (WHO, 2018).

Roles of Socio-cultural and Religious in the Context

Regardless of the structure of the existing health system in the context, social determinants such as socio-cultural and religious beliefs are crucial factors in healthcare and service provision (WHO, 2019a). In the broader context, religion and culture significantly influence healthcare practices within different societies (Alsharif et al., 2023). A scoping review highlights that Islamic principles and concepts have been intermittently integrated into healthcare practices worldwide (Mahmood et al., 2023). For instance, in Malaysia, where the Muslim population is slightly smaller than in Indonesia (67% in 2020), the integration of Islamic values into the healthcare system is notably more pronounced (Embbasy Malaysia, 2023). This integration is embodied in the Sharia hospital model, where Islamic values permeate all aspects of healthcare, including management, finance, medical practices, and even clinical procedures (Mahmood, 2023).

However, it is important to recognise the stark differences in governance between countries such as Malaysia and Indonesia. While the Malaysian Government has the authority to enforce Islamic doctrine for Muslims, as demonstrated by its strict regulation of Islamic practices within healthcare (Embbasy Malaysia, 2023), Indonesia—despite its Muslim majority—cannot impose Islamic law in an absolute manner due to its pluralistic religious, cultural, and ethnic landscape. Instead, Islamic organisations exert significant influence, particularly in health services such as Preconception Care and Counselling (PPCC). This unique approach in Indonesia is arguably more effective and acceptable in a society characterised by its cultural diversity.

When compared to other Islamic countries, such as Saudi Arabia, the application of Islamic values in healthcare practices exhibits notable differences. For instance, in Saudi Arabia, healthcare services are strictly gender-segregated, with only same-gender service providers allowed (Alsharif et al., 2023). In contrast, Indonesia demonstrates greater flexibility, with no significant opposition to being served by practitioners of the opposite gender. This contrast suggests that despite adhering to similar religious beliefs, interpretations of Islamic teachings can vary considerably, leading to diverse practices in different socio-cultural contexts. The variability in interpreting and applying religious principles can be understood through the lens of religious conservatism, which, as O’Brien and Abdelhadi (2020) observes, it reflects the extent to which individuals and societies strictly adhere to fundamental religious values, rules, and practices. Saudi

Arabia's strict gender-segregation policies in healthcare can be linked to its adherence to conservative Islamic teachings (Meijer et al., 2012), whereas Indonesia's more flexible approach aligns with its tradition of moderate and inclusive Islam (Ronaldi et al., 2023) This distinction underscores the necessity of considering local socio-cultural dynamics when integrating religious values into healthcare policies and practices, especially in contexts where religious values influence public policy.

In the Indonesian context, both culture and religion play a significant role in shaping societal norms and behaviours. This influence is particularly evident in marriage practices. All official religions in Indonesia, including Islam, Christianity, Catholicism, Hinduism, Buddhism, and Confucianism, place an emphasis on the necessity of marriage. Within Islam, however, marriage is subject to strict requirements to ensure its validity. One key criterion is the purity of descent and the clarity of lineage. In this study, it was found that pregnancy tests, which are rooted in Islamic principles, are mandated as part of the premarital health check. This requirement seems to function not only as a medical procedure but also as a means of regulating behaviour, ensuring that couples adhere to religious teachings, particularly the prohibition of premarital sexual relations.

The inclusion of pregnancy tests in premarital health checks stands in stark contrast to practices in other contexts, such as in England, Scotland, and Wales. According to the Equality and Human Rights Commission, marriage is regarded as a personal choice, with individuals' rights, including sexual orientation, being respected. Furthermore, relationships are expected to be founded on respect for human rights, which includes privacy and autonomy (Anonim, 2021). Regarding pregnancy tests, the Equality and Human Rights Commission emphasises that such tests should not be administered unless explicitly requested by the individuals involved, as this is considered a matter of personal privacy. This difference highlights the role of cultural and religious values in shaping healthcare practices, with Indonesia's religiously-informed approach prioritising societal and moral considerations, while secular frameworks in Western contexts tend to emphasise individual autonomy and privacy.

The complex relationship between state and religion in Indonesia significantly impacts various aspects of public life (Haryanto, 2019). This PhD study highlights how the concept and practice of PPCC services are deeply shaped by local socio-cultural and religious beliefs, which gives these services a distinct character. In Indonesia's decentralised system, local governments have the authority to establish policies, many of which are influenced by religious teachings, particularly Islam. With Islam being the predominant religion, its teachings and values exert a considerable influence on Indonesian politics (Mukrimin, 2023). However, Indonesia's diversity, encapsulated in its

national motto ‘Bhinneka Tunggal Ika’—'unity in diversity’—also underscores the importance of fostering tolerance and mutual respect across different religious, cultural, and ethnic communities (Haryanto, 2019). The integration of PPCC services into the marriage application process reflects a policy shaped by these religious influences. This observation aligns with a systematic review by Sule (2023), which notes a dynamic interaction between religious beliefs, institutions, and ideologies in shaping public policy and governance. Consequently, understanding the nuanced interplay between religion and governance is crucial for developing effective strategies to improve the delivery of PPCC services in Indonesia, particularly within its multi-ethnic and multi-religious context.

Based on the discussion above, it is evident that the management of PPCC services requires significant improvement. Key issues include ineffective communication and coordination, weak supervision and monitoring systems, and insufficient support from stakeholders. Furthermore, funding limitations exert a profound impact on structural development, accessibility, and the availability of necessary resources. While the integration of religious and cultural values into PPCC services offers potential as a strategy to enhance the acceptability and effectiveness of these services, it is crucial that this approach is carefully managed. Given the distinctive nature of PPCC, this model may offer opportunities for adaptation in contexts with similar socio-cultural characteristics to Indonesia. However, any such adaptation would require a nuanced approach that takes into account local specificities to ensure its relevance and effectiveness in different settings.

7.3.2 Provision and Access to PPCC services

According to WHO (2013), PCC interventions can be tailored to local epidemiology, integrated with existing services, and adapted to available mechanisms and resources. PCC can be provided by both health professionals and non-health professionals across various settings, including private consultations, community-based public health programmes, hospitals, clinics, and local primary health services (Hristova-Atanasova et al., 2024). This PhD study demonstrates that PPCC services are delivered in clinical settings, specifically at primary health centres, known locally as Puskesmas. These services are integrated into existing health services, particularly Maternal and Child Health Services. However, this PhD study found that PPCC services were not widely known among service users due to insufficient information availability. This finding corroborates previous research, which indicated that women's lack of awareness adversely affected their attitudes towards and uptake of these services (Okemo et al., 2021). Similar results were reported in Japan, where women of childbearing age also

had limited knowledge about preconception care and restricted access to preconception services (Shibata et al., 2023).

Regarding service providers, this PhD study reveals that PPCC services are delivered by health professionals, primarily midwives. This service combines education and counselling with a simple clinical examination. However, both are carried out separately with an unstructured schedule and because of this, it is often difficult for couples to access them. This PhD study highlights that the structure and availability of these services can influence access and contribute to inequities in service provision. These findings align with previous research in Indonesia by Kurniawati and Afiyanti (2019), which reported that inconsistent scheduling and frequency of education and counselling programmes lead to disparities in service access. Despite the importance of PCC service programs, challenges often arise, especially in busy clinics, resulting in a lack of structured and delivery the services (M'Hamdi et al., 2017).

For optimal efficiency and synergy, PCC interventions can be delivered as integrated packages, with each component tailored to fit local contexts, priorities, and the feasibility of delivery within the healthcare system (WHO, 2019b). This PhD study found that while the Ministry of Health's 2021 regulations mandate a comprehensive package of interventions. However, specifically, health check-ups were delivered inconsistently with national guidelines and primarily focused on physical health, with mental health often receiving insufficient attention. Furthermore, follow-up procedures for case findings are often unclear due to an unestablished recording and reporting system. Similar challenges have been reported in other countries such as South Africa, Zambia, Kenya, India, and Nepal, where healthcare services frequently struggle with inadequate infrastructure, lack of competent and motivated staff, absence of guidelines, poor documentation and information use, and ineffective referral systems (WHO, 2018).

Regarding mental health assessment, the WHO highly recommends incorporating mental health evaluations into routine PCC services (WHO, 2013). Research conducted in Australia and published in The Lancet Regional Health by Dadi et al. (2024) reported that maternal mental health problems before and during pregnancy negatively influence birth outcomes, affecting both mother and child. Thus, preconception mental health interventions are essential as they can improve physical and mental health, thereby reducing the risk of adverse pregnancy outcomes (Steegers, 2023). In Indonesia, mental health services face numerous challenges, including the low availability of professional staff, insufficient funding, and significant disparities in treatment (Cipta et al., 2022). In 2022, 26.9% of the Indonesian population experienced mental health disorders, yet only about 9% received treatment (Cipta et al., 2022; Directorate of People's Welfare

Statistics, 2023). Additional barriers include lack of knowledge, difficulty accessing mental health services, and societal stigma that attributes mental health disorders to a lack of religious faith, deterring individuals from seeking necessary treatment (Cipta et al., 2022). Minister of Health Regulation 21 of 2021 mandates that mental health examinations be part of routine PPCC services. However, this PhD study found that implementing mental health screenings is challenging due to obstacles such as insufficient training for health providers, the unavailability of assessment tools, and pervasive stigma related to mental health. For instance, societal beliefs that mental health issues are personal and inappropriate to discuss publicly lead to mental health problems receiving relatively little attention in Indonesian health services. Previous research on psychological health examinations during pregnancy at Puskesmas found that health professionals' mental health literacy skills require significant improvement (Pratiwi, 2019).

Another finding from this PhD study is that PPCC services are primarily focused on preparing couples for pregnancy upon marriage. This emphasis appears to be influenced by local socio-cultural and religious beliefs, which often expect couples to start having children immediately after marriage. This idealisation of prompt childbearing is also observed in other contexts, such as India and Nepal (Daniel et al., 2008; Samanta et al., 2018; Diamond-Smith et al., 2021). Traditionally, PCC services target couples planning a pregnancy; however, WHO recommends extending these services to couples not yet contemplating pregnancy, those with previous adverse reproductive outcomes, and individuals with pre-existing genetic risks, such as thalassemia, diabetes, or epilepsy (WHO, 2013; Frayne, 2017). In Indonesia, where most families aim to have at least two children (Hasanah, 2023), there is a need for interpregnancy PCC services. Additionally, 18.25% of Indonesian mothers still experience short intervals between births (Ningrum et al., 2022). Preconception health aims to enhance reproductive health throughout the life course, necessitating a clear pathway from early years to the first and subsequent pregnancies (Public Health England, 2018). Therefore, the availability of interpregnancy preconception services will allow for counselling to optimise pregnancy intervals, enabling women to recover and prepare for future pregnancies (Lassi et al., 2020). PCC interpregnancy counselling can help couples plan the use of postnatal contraceptive methods to space subsequent pregnancies (Shaw, 2017). This is important because short interpregnancy intervals have been associated with negative effects on pregnancy and outcomes for mothers and newborns, including small for gestational age, premature birth, maternal bleeding and death (Conde-Agudelo et al., 2012). In addition, planned pregnancy spacing helps to avoid unwanted pregnancies, leading to better outcomes for both mother and child (ACOG, 2019).

In terms of service provision, Indonesia has distinct features compared to other countries within LMUICs. The scoping review highlighted both similarities and differences with other LMUIC nations. Compared with PCC models in other LMUICs, the Indonesian PPCC approach is somewhat similar to the PCC interventions used in Sub-Saharan Africa (SSA). The main differences are that PPCC focuses on preparing couples for pregnancy, features a shorter educational programme, and involves simpler clinical examinations. In contrast, SSA educational programme target high-risk couples with more intensive educational programmes spanning 6, 8, or 12 weeks. These programmes are delivered by a combination of trained facilitators (non-health professionals) and health professionals (Daniel et al., 2008; Wall et al., 2013; Gitahi et al., 2020) and include comprehensive clinical examinations for vaccinations, testing, and treatment of HIV and sexually transmitted diseases (Daniel et al., 2008; Wall et al., 2013; Gitahi et al., 2020). In comparison to PCC interventions in India and Nepal, Indonesian PPCC services are similarly shaped by socio-cultural and religious beliefs. However, in India and Nepal, PCC services target young married couples and their families and are delivered by trained facilitators within community groups (Daniel et al., 2008; Samanta et al., 2018; Diamond-Smith et al., 2021). In this particular context, it seems that the role of the stakeholder is an important factor in the success of preconception services. For example, the success of PCC interventions in Nepal is attributed to active community participation (Diamond-Smith et al., 2021).

Although there were differences in PCC practices among the above LMUICs, they share common issues, such as all have knowledge and attitude components, inconsistent models due to a lack of guidelines, limited funding, and resource availability. Good practice of PCC is observed in countries where the government demonstrates a strong commitment to PCC services through robust policies and adequate financial and resource support. For instance, in China, the PCC intervention employs a comprehensive clinical approach, including medical history assessments, physical and mental examinations, extensive laboratory tests, and state-guaranteed service provision to ensure broad coverage (Xu et al., 2022). The uniqueness of PPCC lies in integrating Islamic values into PPCC services that can be widely accepted by a society consisting of multicultural, religious and ethnic groups, reflecting the high level of tolerance between religious communities.

In addition, the transition period between regulations and the COVID-19 pandemic has notably impacted PPCC service delivery practices. Document analysis revealed that although the new Minister of Health Regulation No. 21 of 2021 provides a more detailed and clearer framework compared to the previous regulation, the full implementation of these new regulations has been delayed. This delay was possibly due to a lack of clarity

regarding the deadline for the transition period, coupled with the disruption to services caused by the COVID-19 pandemic.

In conclusion, despite the existence of national policy, the promotion of PPCC services at the user level remains insufficient. The current provision of PPCC services is characterised by a lack of structure and comprehensiveness, with the model requiring greater consistency. Furthermore, access to these services is limited, primarily targeting premarital couples. When compared to other PCCs in LMUICs, PPCC is distinctive in its integration of socio-cultural values into service delivery.

7.3.3 Experience in receiving PPCC services

To improve the quality of care for maternal and neonatal services, WHO (2018) encourages all health care services to shift the focus of health services from health systems designed based on disease and health institutions to health systems designed for people. This client-centred approach is grounded in the principle that healthcare services should facilitate a dynamic interaction between users and providers (Kwame and Petrucka, 2021a). As service users become more educated and informed, they increasingly seek involvement in decision-making, desire to be understood and accepted both physically and emotionally, and expect their dignity and confidentiality to be respected (Anonim, 2022). These principles are particularly relevant to PCC, which addresses the needs of both the individual and their future offspring. This approach ensures that PCC services cater to individual needs, concerns, and desired health outcomes. By respecting and addressing the needs of service users and providers, a positive experience and perception of care can be (Kwame and Petrucka, 2021b). According to WHO, there are four important aspects of client-centred care: effective communication with patients, respect and dignity, emotional support, and continuity of care (WHO, 2019a).

7.3.3.1. Communication with patients

Effective communication between patients and health professionals can enhance the quality of their relationship, facilitate the decision-making process, increase trust and satisfaction with health services, and improve self-management (Alder, 2023). However, the implementation of communication in service practices is often counterproductive. For example, this PhD study found that the majority of participants expressed dissatisfaction with the services they received, which was attributed to the lack of communication skills of health professionals as indicated by a communication style that tended to be one way, the language used was instructional, and a lack of depth and breadth of information provided. Women and couples in this study expected the health professionals provide

clear information when delivering messages. This finding echoes previous work conducted in China, indicating that poor communication styles of health professionals might impact women's and couples' satisfaction with the services provided (Gao et al., 2024). Similarly, Amoah et al. (2019) reported that nurse-patient communication is a crucial factor in determining service quality, with nurse-related characteristics such as lack of knowledge, unfriendly attitude, and excessive workload identified as barriers to effective therapeutic communication. The low communication skills of health professionals can be influenced by several factors such as ineffective policies and procedures, language difficulties, workload pressure, and lack of training (Alder, 2023). To increase the effectiveness of communication, information about treatment programmes must be provided to women and couples accurately and clearly through effective interaction (WHO, 2018).

7.3.3.2. Respect and Dignity

The second aspect of client-centred care is treating patients with respect and maintaining their dignity. Health professionals can achieve this by ensuring that privacy and confidentiality are respected during service; avoiding mistreatment such as discrimination, neglect, and physical, sexual, or verbal violence; and ensuring that women and couples have informed choices about the services they receive and the reasons for interventions or outcomes (WHO, 2018). However, disrespectful behaviour towards patients is a widespread problem in healthcare, despite a strong commitment to respectful service delivery (Grissinger, 2017; Entwistle et al., 2023). Disrespectful behaviour can take various forms, such as non-consent care, non-confidential care, and non-identified care (The White Ribbon Alliance, 2015). In this study it was noted that, the majority of women and couples felt that their existence was underappreciated by health providers. This was shown by their superiority and the use of unclear language, such as the use of medical terms, along with the minimal information provided, which may have created feelings of disappointment and uncertainty among service users. A lack of dynamic interaction between health professionals and women and couples may have also created an ambience where service users appeared uninterested in asking questions or were not actively involved in the discussion. Grissinger (2017) noted that disrespectful behaviour towards patients made them less likely to ask questions and undermined their trust. Healthcare providers who exhibit disrespectful behaviour may do so because they are treated poorly, underpaid, or face harassment and difficult working conditions such as overcrowding and understaffing (The White Ribbon Alliance, 2015). For example, in this study, the health professionals might feel physically and psychologically stressed due to high workloads, room constraints, and insecurity and

lack of self-confidence due to lack of training. This is exacerbated by the COVID-19 pandemic, which causes feelings of insecurity and fear of being infected with the virus.

In addition, women and couples in this study also experienced non-confidential care due to inappropriate arrangements and unconducive environments, raising concerns about privacy and confidentiality. Almost all women and couples self-reported environmental-related issues such as narrow, crowded, and noisy rooms. These disturbances were felt to interfere with their concentration and communication with health professionals. This finding confirms previous research that overcrowding due to poor physical design (layout), time and privacy issues, and ineffective communication contribute to negative care experiences (Rowe and Knox, 2023). Macallister et al. (2016) also found that certain characteristics of the spatial layout and environmental design in hospitals or health services influence perceptions of service satisfaction. Another study conducted by Joyce (2021) reported that room settings shape women's experiences. Efforts to address disrespectful behaviour need to involve integration within the system and social accountability tools to monitor respectful services. These tools include community monitoring, public hearings, client feedback mechanisms, and mechanisms for policy change and legal redress (Public Health England, 2018).

7.3.3.3. Emotional support

Emotional support is crucial in PCC services, especially during counselling sessions, as pregnant women and couples are transitioning into parenthood. This period can cause feelings of insecurity about their new roles or worries about their pregnancy and future offspring. For instance, existing health risk factors may cause anxiety among couples. For this reason, male involvement in PCC is vital because men play a central role during the conception period, influencing pregnancy outcomes and the long-term health of future generations (The Lancet, 2018). In client-centred care, patients are partners, and healthcare providers consider multiple perspectives, including clinical, emotional, mental, spiritual, social, and financial (NEJM Catalyst, 2017). To provide emotional support, health professionals must develop a sense of empathy encompassing three dimensions: emotional, cognitive, and social (Moudatsou et al., 2020). However, many health professionals struggle to implement empathetic communication with patients (Steel et al., 2015). An example of this study noted that the men who were involved in counselling sessions often felt they did not receive enough emotional support from health professionals, as the focus of services was primarily on women. Being excluded might have led to negative feelings among men, including isolation, or emotional drain due to a lack of encouragement, empathy, or understanding. This situation may also be influenced by the room setting, which is narrow and less friendly to the presence of men.

This finding aligns with a systematic review by Steel et al. (2015), which found that almost half of PCC interventions focused solely on women. This finding is relevant to previous qualitative research conducted by Pinto et al. (2021), which showed that emotional distress can be exacerbated by feeling unsupported by health professionals. The difference is that the participants in this study were patients with motor neuron disease (MND). Similarly, quantitative research has reported a significant relationship between insufficient support and levels of distress on patient cancer (Taylor et al., 2023). In doing so, health professionals must position themselves as sources of support systems or help identify other sources of support. For example, women should be given the choice of whether they want to be accompanied by their partner during health checks (WHO, 2018).

7.3.3.4. Continuity of Care

In this context, continuity of care is defined as the ongoing management of health services where patients and care teams, led by doctors, work cooperatively towards the common goal of high-quality and cost-effective medical services (AAFP, 2020). In a client-centred approach, continuity of care is linked to core patient values such as a sense of safety, trust, and greater patient satisfaction (Murphy and Salisbury, 2020). However, the health service system is often fragmented, and ongoing care is not well implemented (Prior et al., 2023). For example, in this PhD study, most women and couples did not understand how the referral system works. If a disease or health problem is discovered, it is very rare for patients to receive clear follow-up due to an unclear referral system pathway. Fragmentation of care can endanger patient safety due to management errors resulting from incomplete and unclear information between health service providers, leading to inappropriate treatment or even mishandling (Djukanovic et al., 2024). Building sustainable PCC services requires a commitment to collaborative work towards a person-centred approach, establishing clear communication, and agreeing on referral pathways (Public Health England, 2018).

7.3.3.5. Perceived Benefits of PPCC

Substantial evidence highlights the potential benefits of involving couples in maternal health programs within LMICs, as men's strategic position within the family can enhance the effectiveness of such initiatives and lead to improved health outcomes (Ladur et al., 2021). A couple-focused approach can promote a more equitable distribution of reproductive responsibilities and decision-making, contributing to improved family planning, healthier pregnancies, and better maternal and family health outcomes (Abed Alah, 2024). This PhD study corroborates these findings, revealing that service models engaging both partners were perceived to offer greater benefits compared to those

targeting women alone. Beyond clinical outcomes, men's involvement was seen to enhance communication, emotional support, shared responsibility, and joint decision-making, thereby improving relationship quality. These dimensions underline the broader social and relational advantages of couple-oriented preconception care.

However, male involvement in PPCC services in Indonesia remains limited, hindered by several factors, including a lack of awareness regarding the importance of such services, financial constraints, and barriers related to time, work commitments, and geographical distance. These challenges align with findings by Nurdin et al. (2023), who identified residence, financial instability, lower education levels, and insufficient information as critical barriers to men's participation in maternal health services in Indonesia. Although evidence on men's involvement during the preconception period in Indonesia is scarce, their active participation in maternal health services during pregnancy, childbirth, and postpartum has been documented. For instance, research in Central Java by Shaluhiyah et al. (2023) indicates that men exhibit adequate knowledge, positive attitudes, and high levels of involvement during these stages. This contrast suggests untapped potential for engaging men earlier in the reproductive health continuum, which could significantly enhance the effectiveness of PPCC services.

7.3.3.6. Social cultural and religious belief Influences

Indonesia is renowned globally for its socio-cultural diversity (Fatmawati, 2021). In the theory of pluralism, Indonesia exemplifies the harmonisation of life among people based on tolerance (Mayasari and Thesa, 2023). Regarding PCC services, it is important to consider the couple's religious beliefs and socio-cultural values (Lang et al., 2020). For instance, in this PhD study, marriage and having children are two significant concepts in Indonesian society. For Muslims, the obligation to marry is based on the Quran, Surah An-Nur verse 32: "*Marry those who are still single among you and also those who are worthy (to marry) of your servants, both men and women. If they are poor, Allah will give them abilities with His grace. Allah is All-Encompassing (His gifts) and All-Knowing."* The findings revealed that the way women and couples view marriage, family dynamics, and having children is influenced by religious teachings, particularly the motivation to marry. For Muslims, marriage is sacred as it is a form of obedience to the commands of Allah, aiming to create a family characterised by *'sakinah, mawaddah, wa rahmah'* (tranquillity, love, and mercy) (Fauzan and Amroni, 2020). To achieve this, both men and women have important roles (Jafar and Fahimah, 2022).

A literature review by Jafar and Fahimah (2022) reported that, within Muslim families, men often bear greater responsibilities than women. This aligns with socially prescribed gender roles, as evidenced by research on family planning in Indonesia, which points to

the limited involvement of men in such programmes (Rahayu et al., 2023). However, there is growing potential for increased male participation in PPCC services, supported by a gradual decline in Indonesia's Gender Inequality Index from 0.499 in 2018 to 0.459 in 2022 (Directorate of People's Welfare Statistics, 2023). This trend reflects notable advancements in reproductive health and empowerment indicators. Improvements in health outcomes underscore progress in reproductive health dimensions, while greater educational parity is evident in increasing equality between boys and girls in higher education. Notably, the percentage of female students surpassed that of males, with women increasing from 34.87% in 2021 to 36.95% in 2022, while the percentage of male students rose more modestly from 41.30% to 42.06% during the same period (Directorate of People's Welfare Statistics, 2023). These shifts suggest an evolving societal landscape where men may become more cognisant of their critical role in maternal health, thereby enabling their greater involvement in PPCC services. Such participation could significantly enhance maternal and neonatal outcomes.

In addition to religious influences, marriage in Indonesia is deeply intertwined with the traditional system known as *adat*. *Adat* comprises a set of rules that function as local laws and play a significant role in Indonesia's social structure and norms (Buttenheim and Nobles, 2009). Regarding marriage, the *adat* system governs aspects such as the socially accepted age for marriage and the central role of women in reproductive tasks (Puri et al., 2023). However, this system often imposes a greater burden on women compared to men. For instance, women who remain unmarried past a certain age (typically over 25 years) are labelled *"perawan tua"* (old maids) and are often deemed less desirable (Puri et al., 2023).

Another important concept in Indonesian society is having children. Similar to the institution of marriage, the perspective of women and couples on having children is also influenced by religious values. For many participants in this study, the desire to have children is a major motivation for marriage, largely driven by religious teachings. In Islam, bearing and educating children are regarded as valuable responsibilities, aiming to raise children who are intelligent, resilient, and devoted to their parents (Palinge et al., 2022). Children hold an important place in Muslim families (Fitrianto, 2024). Virtuous children, or those who show devotion to their parents, are believed to be potential supporters in the afterlife, as their prayers can help atone for their parents' sins (Fitrianto, 2024).

In summary, fostering positive experiences for women and couples in PPCC services requires significant improvements in several key areas. These include enhancing the communication and counselling skills of health professionals, expanding and refining the delivery of services, increasing male involvement, and ensuring greater sensitivity to

cultural and religious values.

7.4 Strengths and Limitations

This PhD study has both inherent strengths and limitations, with the most significant aspects highlighted in this section.

This study aimed to gain an in-depth understanding of PPCC services. The results reflect the perspectives of women/couples as service users and health professionals providing PPCC services at specific locations and times. Consequently, these findings may not represent the overall perspective on PPCC services in Indonesia. The qualitative approach used in this study is not intended to generalise findings (Carminati, 2018).

From the perspective of access, and despite the context, there was a willingness of service providers to facilitate access to research locations and all requested data amid the COVID-19 pandemic, allowing the data collection process to be carried out within the planned time frame. This is considered a strength because, during the COVID-19 pandemic, clinical research has been significantly impacted and made more challenging due to quarantine, social distancing, travel restrictions, and participant concerns. Consequently, adaptations and improvements to research structures were often necessary (Nomali et al., 2023).

The application of a qualitative comparative case study design was, at the outset, novel. To the best of the researcher's knowledge, this is the first study employing this approach to investigate PPCC in Indonesia. This design allows the researcher to explore deeply the lived experiences of health services provided, capturing the nuances of how socio-cultural and religious factors influenced the delivery and perception of PPCC services, enabling the generation of unique and comprehensive insights into PPCC services within the Indonesian context.

From a methodological perspective, employing multiple data sources – such as interviews, observations, and documentary analysis – facilitated the integration of different types of data, leading to a thorough and comprehensive understanding of the implementation of PPCC services. These techniques strengthened the validity of the research by triangulating information from various sources (Yin, 2018).

The researcher was directly involved in the processes of data collection, transcription, translation, and analysis. This involvement has provided several benefits: it has given the researcher a profound understanding of the characteristics of the collected data, ensured data accuracy through meticulous data management, and offered valuable experience in managing data (Chen and Boore, 2010; Braun and Clarke, 2022). As a learning opportunity, this depth of experience has been particularly significant for the

researcher, as it has provided a window into the practical world of academic research and enhanced their expertise, especially in qualitative research.

All applied health research has inherent limitations due to uncontrollable real-world variables (Ross and Zaidi, 2019). While some limitations, such as case study selection, the number of cases, and the recruitment process, have minimal impact on the overall quality of this study, this section highlights areas where, with hindsight, the study might have been operationalised differently, particularly due to COVID-19 pandemic. For example, the empirical results reported in this study must be considered with respect to aspects such as case study selection, the number of cases, and the recruitment process. The small number of cases in this study could lead to issues related to complexity and diversity not being fully revealed (Ragin and Schneider, 2011). However, the number of cases and participants met the requirements set by methodologists in the field. In this PhD study, two comparable Puskesmas were selected from a total of twelve. While the limited number of cases might not adequately reflect the full complexity and diversity of the processes and mechanisms underlying the phenomenon under study (Crowe et al., 2011), the case-oriented approach adopted by this study supports a manageable number of cases (typically two to four). Given the PhD context as a training opportunity for an individual, a larger number of cases could have presented significant challenges in managing such a vast data set, especially for a single researcher. This could have led to potential issues with attention to detail, which might have affected accuracy (Yin, 2018). Therefore, although the number of cases in this study was small, the data collected were rich and considered sufficient to address the research questions effectively.

Regarding the case selection method, it might introduce to biased selection due to its pragmatic nature (Wa-Mbaleka, 2020), yet this method was considered the most appropriate at that time because data collection was carried out during the COVID-19 pandemic. Another concern pertains to the sampling method, which did not rely solely on purposive sampling. The Head of the Puskesmas played a role in recruiting participants from service providers, while health professionals recruited participants from service users. Although their involvement was restricted to assisting with identification, it may have influenced the attitudes and decisions of potential participants which introduce to sampling bias (Wa-Mbaleka, 2020).

7.5 Recommendations

Overall, despite its potential, PPCC requires further improvement. This is crucial because inadequate implementation of preconception care can adversely affect the safety of

pregnancy and childbirth for both mother and baby, potentially leading to long-term health consequences for the child (Public Health England, 2018). The recommendations provided by the researcher are based on the findings of this PhD study, focusing on the practice of PPCC services, education, and future research, as well as actions that can be taken at the local level. Specifically, this involves the Puskesmas, which serve as a means to engage, inspire, and empower women and couples in relation to preconception care.

Recommendations for Practice

To improve management and organisation of PPCC services

Given the importance of PPCC services, the role of local governments is crucial in encouraging and facilitating the implementation of these services at each Puskesmas to ensure their availability and quality. To enhance the quality and access to PPCC services, it is vital to increase the funds allocated for 'Kelas Catin' services from BOK (Health Operational Assistance) and to increase subsidies for the cost of premarital health check-up services. This funding supports well-structured services, ensures the availability and adequacy of supporting facilities such as to improve the laboratory capacity for testing, and provide private room for counselling, and facilitates the improvement of health providers' quality through appropriate training particularly communication skills and providing counselling, and mental health assessments. The use of integrated information systems and the availability of trained staff to operate them at Puskesmas need to be emphasised. This will enhance the effectiveness of reporting and documentation systems, thereby strengthening monitoring and supervision mechanisms as well as decision-making processes. Additionally, cross-sectoral collaboration and involvement are essential. Legal mechanisms should be established to support PPCC services by implementing policies or formally requesting support from stakeholders such as religious offices, sub-district governments, and village officials. This support can take the form of funding or policy initiatives to prioritise and enhance PPCC services.

To improve provision and PPCC services delivery at the Puskesmas

To increase awareness of PPCC services, efforts to publicise the programme must be carried out intensively and broadly through various channels, such as the Puskesmas website, social media (e.g., Instagram or Facebook), mass campaigns, posters, and community organisations, including youth and religious mass organisations. To ensure comprehensive and adequate PPCC services, the provision of service should attempt to follow the minimum service standards set by the central government, then there can be flexibility to adapt to the needs of each Puskesmas, for example, Puskesmas can add

screening for sexually transmitted diseases due to the high incidence of these health problems. Regarding ‘Kelas Catin’, the use of online-based learning modules will potentially overcome time, place and space constraints and optimise the use of the "Kelas Catin" application. Furthermore, expanding PPCC services beyond couples preparing for marriage to include childbearing-age couples planning pregnancies could significantly broaden the programme’s impact. Involving the private sector could further extend the reach and accessibility of these services.

To enhance the positive experience of service users

To promote positive care experiences, all PPCC healthcare providers need to be equipped with the knowledge and skills to provide services that are sensitive to the needs and desires of the woman/couple (client-centred care). A couple-oriented service model is particularly recommended, as it not only optimises health outcomes but also enhances the overall care experience. This study highlights that women and couples prefer personalised services, clear and effective communication, an expanded scope of care, and consistent involvement of men that acknowledges their concerns and needs. To support this, creating a male-friendly environment within PPCC services is essential. To create a more male-friendly environment, the unit specifically providing PPCC services could adopt a name that reflects a couple-oriented approach, such as 'Couples Health Clinic,' with room settings designed to meet the needs of couples. Regarding the referral system, effective communication and collaboration between health professionals are essential for agreeing on a clear referral pathway. Given the strong influence of sociocultural and religious beliefs in this context, PPCC health service providers should also be equipped with the knowledge and skills necessary for delivering culturally sensitive care. Additionally, the significant influence of socio-cultural and religious factors underscores the necessity of involving religious leaders, key community figures, and the broader society in supporting the success of preconception programmes. Their active participation can help ensure that these programmes align with local values and beliefs, fostering greater acceptance and engagement among the target population.

Recommendations for Education

For educational purposes, incorporating knowledge about the importance of preconceptions into the school curriculum (for high school or equivalent levels) can raise awareness of preconceptions from an early age. Additionally, to improve awareness of future health professionals, it is crucial to include training in sociocultural and religiously sensitive services as a core competency in the education of healthcare providers, including doctors, nurses, midwives, nutritionists, physiotherapists, and pharmacists.

Recommendations for Future Research

Future research is needed to build on the findings of this PhD study. The researcher has developed a multi-year research plan, which includes: a case-control research design to develop and evaluate the PPCC model based on the recommendations from this PhD study. Following this, another study could implement the new model PPCC and examine the pilot project using a cohort research design. Finally, a cluster randomised controlled trial or similar approriate design, such as mixed method, should be conducted to implement and measure the outcomes of the new PPCC model, including maternal, paternal, and child health outcomes, for example: pregnancy, childbirth, fatherhood, and the health of the children born.

7.6 Reflection: Learning Experience on the PhD Journey

During the first year of my PhD, the journey was relatively smooth; I participated in all required training, had regular meetings with my supervisors, and enjoyed university life, which was a novel experience for me as it was my first time studying abroad. However, the onset of the pandemic significantly impacted both my PhD project and my studies. The most significant effects were felt during data collection. Despite having developed research protocols and obtained ethical clearance from the ethics committee, field practice remained challenging. Initially, I experienced considerable anxiety and concern due to the pandemic's impact on access to research locations and potential participants, coupled with the limited timeframe for data collection. The pandemic also profoundly affected my personal life. Social distancing measures disrupted my support network, as access to learning resources was restricted. This situation forced me to work from home with a poor internet connection, leading to frustration and helplessness, given my reliance on the internet for my PhD work. Nevertheless, contrary to my expectations, the data collection process ultimately proceeded smoothly. I secured all necessary permissions to conduct research at two different locations, and the recruitment of potential participants from both service users and providers was successful. Although adjustments were made in case selection and participant recruitment, the overall research design remained unchanged, allowing me to complete data collection within the planned timeframe.

The experiences gained during data collection have provided me with a solid understanding of the principles of research ethics. Although obtaining ethical clearance took a considerable amount of time, this process has deepened my understanding of how ethical principles are applied throughout data collection. Conducting interviews, observations, and document retrieval on my own has given me valuable experience in managing various data sources. The use of different types of data – interviews,

observations, and documents – has been instrumental in handling large volumes of diverse data effectively. Transcribing all the data and participating in the translation process, while tiring and time-consuming, was highly beneficial for engaging with the data and facilitating the analysis process. These experiences have significantly enhanced my creativity, innovation, intuitive skills, critical thinking, and analytical abilities. Additionally, they have improved my attention to detail and time management, all of which are crucial qualities for a successful researcher.

From the perspective of an international student like myself, the success of a PhD journey is not determined solely by academic achievements. International students often face cultural shocks, language barriers, financial difficulties, or health issues that can affect their mental well-being and academic performance. For example, in the third year of my PhD studies, I encountered a major health challenge. I was diagnosed with serious illnesses, requiring intensive treatments. This was particularly shocking and distressing, as it coincided with a critical period when I needed to focus on my thesis writing. After consulting with my supervisory team, I decided to request a six-month suspension from the University to concentrate on my treatment. Undergoing the treatment was an incredibly difficult time both physically and mentally. I even began to doubt whether I could complete my PhD journey. However, once my treatment programme was completed and my health started to improve, I regained the confidence to continue and complete my PhD journey.

I would like to express my gratitude to all those who supported me throughout my PhD journey, particularly my supervisory team, whose unwavering support and encouragement were invaluable. Their support was crucial in helping me navigate through difficult times, ultimately enabling me to complete and submit my thesis. This experience has highlighted the importance of students' mental well-being for academic success. I have personally experienced how the University of Leeds effectively supports and addresses the mental health of its students. I deeply appreciate all the assistance provided, as it significantly contributed to my PhD journey and academic progress. Despite the challenges, I have gained invaluable learning experiences and had a very wonderful PhD journey.

7.7 Dissemination of the Study

Initially, the researcher had developed a plan for disseminating the research findings during the PhD study, which was approved by the supervisory team. This plan included presentations at international conferences and university conferences. However, due to

the COVID-19 pandemic and associated social restriction policies, the plan could not be executed as intended, yet three dissemination has been done. The detail of the dissemination done is presented in Appendix 29.

Effective dissemination of research is a critical component of translating knowledge into practice and driving transformative change (Edwards, 2015). The primary objectives of dissemination include increasing end-users' awareness and understanding of evidence, influencing their intention to implement it, and enhancing the likelihood of its adoption (Turon et al., 2023). Achieving these goals requires a comprehensive and well-structured dissemination plan. Brownson et al. (2018) identified four key elements integral to effective dissemination models: the source of the information, the message conveyed, the channels utilised, and the target audience. Additionally, there is increasing recognition of the significant role social media and online platforms play in extending the reach and impact of research. These platforms offer the advantage of assessing dissemination outcomes beyond traditional measures such as citation counts and journal impact factors, providing insights into the influence of research within broader social networks (Tripathy et al., 2017). Given their potential, social media and digital platforms will be strategically employed to engage a wider audience and amplify the reach of the research findings. Detailed dissemination strategies and publication plans are outlined in Appendix 29.

7.8 Final Conclusion

In conclusion, this PhD study set out to investigate the concept and unique nature of premarital preconception care in Indonesia, employing a qualitative comparative case study design as as its methodological framework.

This PhD study demonstrates that PPCC service programme have the potential to enhance pre-pregnancy health and strengthen relationships by involving both partners, particularly when services are tailored to align with local religious and socio-cultural values. Case study findings reveal that, although existing services are appreciated, their overall impact is undermined by the limited participation of male partners. The integration of culturally sensitive strategies, such as collaboration with religious organisations and the incorporation of Islamic principles, has shown promise in enhancing both participation rates and programme acceptance. However, these measures require further refinement to achieve sustained and widespread engagement. To ensure consistent, equitable, and accessible service delivery, significant improvements in managerial and organisational practices are required. Such advancements are essential not only to enhance service quality but also to foster positive care experiences for all

participants. Addressing these challenges will necessitate the expansion of service coverage, standardisation of structures, and better accessibility. By meeting the diverse needs of couples, these enhancements could optimise the programme's benefits for maternal and family health, thereby realising the full potential of PPCC initiatives in the Indonesian context.

These findings offer valuable insights into PPCC services that can inform practice, support future policy development, guide education, and provide a basis for designing research aimed at developing targeted interventions. To ensure that PPCC services are of high quality, and accessible to everyone, the roles of central, provincial, and district/city governments are crucial. The regulatory bodies must provide supporting legal, regulatory, and financial mechanisms to ensure that PPCC services can be implemented effectively. Additionally, community empowerment and collaboration with relevant parties, such as religious organisations and non-governmental organisations, are essential. Given the complexity of PPCC ideology and service practices, the program's success will depend on the active involvement of all relevant stakeholders, and program implementation must pay attention to socio-cultural and religious factors to increase program uptake and acceptance.

Total word count: 67,261

References

AAFP. 2020. Continuity of care, definition of. [Online]. Available from: https://www.aafp.org/about/policies/all/continuity-of-care-definition.html

Abed Alah, M. 2024. Unlocking the path to healthier families: The untapped potential of men's preconception health. *Journal of Prevention.* **45**(1), pp.1-8.

ACOG. 2019. ACOG committee opinion no. 762: Prepregnancy counseling. *Obstet Gynecol.* **2019 Jan;133(1)**, pp.e78-e89.

Adeniran, A.S., Ocheke, A.N., Nwachukwu, D., Adewole, N., Ageda, B., Onile, T., Umezulike, A.C., Aboyeji, A.P. and Oladapo, O.T. 2019. Non-obstetric causes of severe maternal complications: A secondary analysis of the Nigeria near-miss and maternal death survey. *BJOG.* **2019 Jun**(Nigeria Near-miss and Maternal Death Surveillance Network), pp.41-48.

Admiraal, L.A.C., Rosman, A.N., Dolhain, R., West, R.L. and Mulders, A. 2022. Facilitators and barriers of preconception care in women with inflammatory bowel disease and rheumatic diseases: An explorative survey study in a secondary and tertiary hospital. *BMC Pregnancy Childbirth.* **2022 Mar 23;22(1):238**(1471-2393 (Electronic)).

Agustina, R., Dartanto, T., Sitompul, R., Susiloretni, K.A., Suparmi, Achadi, E.L., Taher, A., Wirawan, F., Sungkar, S., Sudarmono, P., Shankar, A.H. and Thabrany, H. 2018. Universal health coverage in Indonesia: Concept, progress, and challenges. *Lancet.* **2019 Jan 5;393(10166)**(1474-547X (Electronic)), pp.75-102.

Ahmed, S.K. 2024. The pillars of trustworthiness in qualitative research. *Journal of Medicine, Surgery, and Public Health.* **2**, p100051.

Al Riyami, T. 2015. Main approaches to educational research. *International Journal of Innovation and Research in Educational Sciences.* **2**(5), pp.412-416.

Alder, S. 2023. Effects of poor communication in healthcare. *The HIPAA Journal.*

Alharahsheh, H.H. and Pius, A. 2020. A review of key paradigms: Positivism vs interpretivism. *Global Academic Journal of Humanities and Social Sciences.* **2**(3), pp.39-43.

Ali, P.B., Solikha, D.A., Setiawan, E., Nadjib, M., Hafidz, F., Thalagala, N., Lang, E., Dutta, A., Silva, R., Cantelmo, C. and Stein, D. 2020. *Costs to achieve Indonesia's mid-term development plan (RPJMN) 2020–2024 targets: A primary healthcare costing approach using the onehealth tool.* [Online]. Jakarta: Ministry of National Development Planning/National Development Planning Agency. Available from: http://www.healthpolicyplus.com/ns/pubs/18471-18876_RPJMNCostingReport.pdf

Alsharif, B.A., Althomali, A.O., Alnefaie, T.M., Alnefaie, A.A., Alghamdi, A.M., Alotaibi, M.I., Alzaedi, H.M. and Althobaiti, S.A. 2023. The impact of cultural and religious beliefs on healthcare
practices in Saudi Arabia. *Migration Letters.* **20, No: S12 (2023)**, pp.1552-1557.

Amoah, V.M.K., Anokye, R., Boakye, D.S., Acheampong, E., Budu-Ainooson, A., Okyere, E., Kumi-Boateng, G., Yeboah, C. and Afriyie, J.O. 2019. A qualitative assessment of perceived barriers to effective therapeutic communication among nurses and patients. *BMC Nursing.* **18**(1), p4.

Anonim. 2019. Why the 2019 UN high-level meeting on universal health coverage should encourage all countries to achieve this target. [Online]. Available from: https://csemonline.net/wp-content/uploads/2019/07/WHY-5-of-GDP-1.pdf

Anonim. 2020. Critical appraisal tools: Centre for evidence-based medicine. [Online].

Anonim. 2021. Equality and Human Rights Commission. *Article 12: Right to marry* [Online]. Available from: https://www.equalityhumanrights.com/human-rights/human-rights-act/article-12-right-marry

Anonim. 2022. Why patient-centered care is so important. *HEALTH.* [Online]. **October 2022**. Available from: https://www.wolterskluwer.com/en/expert-insights

Anonim. 2023. Searching strategies for literature review in web of science: Guides. [Online]. Available from: https://libguides.eduhk.hk/searchingstrategies_wos

Arksey, H. and O'Malley, L. 2005. Scoping studies: Towards a methodological framework. *International Journal of Social Research Methodology.* **8(1)**, pp.19-32.

Arnez, M. and Nisa, E. 2024. Advocating for change: Cultural and institutional factors of sexual violence in Indonesia. In: Arnez, M. and Budianta, M. eds. *Gender, Islam and Sexuality in Contemporary Indonesia.* Singapore: Springer Nature Singapore, pp.21-44.

Aryastami, N.K. and Mubasyiroh, R. 2023. Optimal utilization of maternal health service in Indonesia: a cross-sectional study of Riskesdas 2018. *BMJ Open.* **2023 Sep 4;13(9)**(2044-6055 (Electronic)).

Balawender, K. and Orkisz, S. 2020. The impact of selected modifiable lifestyle factors on male fertility in the modern world. *Cent European J Urol.* **2020;73(4)**(2080-4806 (Print)), pp.563-568.

Barker, M., Dombrowski, S.U., Colbourn, T., Fall, C.H.D., Kriznik, N.M., Lawrence, W.T., Norris, S.A., Ngaiza, G., Patel, D., Skordis-Worrall, J., Sniehotta, F.F., Steegers-Theunissen, R., Vogel, C., Woods-Townsend, K. and Stephenson, J. 2018. Intervention strategies to improve nutrition and health behaviours before conception. *The Lancet.* **391(10132)**, pp.1853-1864.

Barton, A., Lavner, J.A. and Beach, S.R.H. 2021. Can interventions that strengthen couples' relationships confer additional benefits for their health? A randomized controlled trial with African American couples. *Prev Sci.* **2021 Apr;22(3)**(1573-6695 (Electronic)), pp.386-396.

Bellio, E. and Buccoliero, L. 2021. Main factors affecting perceived quality in healthcare: A patient perspective approach. *The TQM Journal.* **33**(7), pp.176-192.

Bengtsson, M. 2016. How to plan and perform a qualitative study using content analysis. *NursingPlus open.* **2**, pp.8-14.

Berkovic, D. 2023. Ethical principles and consent. *Qualitative Research–a practical guide for health and social care researchers and practitioners.* [Online].

Black, R.E., Liu, L., Hartwig, F.P., Villavicencio, F., Rodriguez-Martinez, A., Vidaletti, L.P., Perin, J., Black, M.M., Blencowe, H. and You, D. 2022. Health and development from preconception to 20 years of age and human capital. *The Lancet.* **399**(10336), pp.1730-1740.

Borght, M.V. and Wyns, C. 2018. Fertility and infertility: Definition and epidemiology. *Clinical Biochemistry.* (1873-2933 (Electronic)).

Bowen, G.A. 2009. Document analysis as a qualitative research method. *Qualitative research journal.* **9**(2), pp.27-40.

Bowling, A. 2014. *Research methods in health: Investigating health and health services.* McGraw-hill education (UK).

Boyle, J., Dodd, J., Gordon, A., Jack, B. and Skouteris, H. 2022. Policies and healthcare to support preconception planning and weight management: Optimising long-term health for women and children. *Public Health Research & Practice.* **32**(3 DOI - http://dx.doi.org/10.17061/phrp3232227), pe3232227.

BPS-Statistics Indonesia. 2023. *Statistical yearbook of Indonesia 2023.* [Online]. BPS-Statistics Indonesia. [Accessed 12 February 2024].

Braun, V. and Clarke, V. 2022. *Thematic analysis: A practical guide.* SAGE Publication.

Brien, S.E., Lorenzetti, D.L., Lewis, S., Kennedy, J. and Ghali, W.A. 2010. Overview of a formal scoping review on health system report cards. *Implementation science.* **5**, pp.1-12.

Brownson, R.C., Eyler, A.A., Harris, J.K., Moore, J.B. and Tabak, R.G. 2018. New approaches for disseminating public health science. *J Public Health Manag Pract.* **24(2):102–11**.

Bryman, A. 2016. *Social research methods.* Oxford university press.

Buttenheim, A.M. and Nobles, J. 2009. Ethnic diversity, traditional norms, and marriage behaviour in Indonesia. *Popul. Studi.* **Vol.63, no. 3**, pp.277–294.

Carminati, L. 2018. Generalizability in qualitative research: A tale of two traditions. *Qualitative Health Research.* **28**(13), pp.2094-2101.

Chen, H. and Boore, J.R.P. 2010. Translation and back-translation in qualitative nursing research: Methodological review. *Journal of clinical nursing.* **19**(1-2), pp.234-239.

Cipta, D.A., Saputra, A. and 2022. 2022. Changing landscape of mental health from early career psychiatrists' perspective in indonesia. *JoGHNP.* **August 5, 2022:e2022011**.

Ciptadana Sekuritas Asia. 2024. Market outlook 2024 healthcare sector, healthcare overweight. [Online]. Office of Assistant to Deputy Cabinet Secretary for State Documents & translation
Available from: https://ciptadana.com/news/1243

Conde-Agudelo, A., Rosas- Bermúdez, A., Castaño, F. and Norton, M.H. 2012. Effects of birth spacing on maternal, perinatal, infant, and child health: A systematic review of causal mechanisms. *Stud Fam Plann.* **2012;43(2)**, pp.93-114.

Creswell and Poth, C.N. 2016. *Qualitative inquiry and research design: Choosing among five approaches.* Sage publications.

Critical appraisal checklist. 2018. [Online]. Available from: https://casp-uk.net/

Crowe, S., Cresswell, K., Robertson, A., Huby, G., Avery, A. and Sheikh, A. 2011. The case study approach. *BMC Medical Research Methodology.* **11**(1), p100.

Cruzes, D.S., Dybå, T., Runeson, P. and Höst, M. 2015. Case studies synthesis: A thematic, cross-case, and narrative synthesis worked example. *Empirical Software Engineering.* **20**, pp.1634-1665.

Dadi, A.F., He, V., Brown, K., Hazell-Raine, K., Reilly, N., Giallo, R., Rae, K.M., Hazell, P. and Guthridge, S. 2024. Association between maternal mental health-related hospitalisation in the 5 years prior to or during pregnancy and adverse birth outcomes: A population-based retrospective cohort data linkage study in the Northern Territory of Australia. *The Lancet Regional Health–Western Pacific.* **46**.

Dalglish, S.L., Khalid, H. and McMahon, S.A. 2020. Document analysis in health policy research: the READ approach. *Health Policy and Planning.* **35, 2020**(1460-2237 (Electronic)), pp.1424–1431.

Daniel, E.E., Masilamani, R. and Rahman, M. 2008. Communication interventions on contraceptive use among young married couples in Bihar, India. *International Family Planning Perspectives.* **34(4)**, pp.189–197.

Daulay, H., Widyarti, E.S., Ismail, R. and Saladin, T.I. 2023. Psychology of newly married couples in Indonesia: Is it possible to choose childfree by choice or face the gossip of society and family? *International Journal of Innovative Research and Scientific Studies.* **6**(4), pp.1023-1031.

DeJonckheere, M. and Vaughn, L.M. 2019. Semistructured interviewing in primary care research: A balance of relationship and rigour. *Family Medicine and Community Health.* **7**(2), pe000057.

Diamond-Smith, N.G., Mitchell, A., Cornell, A., Dahal, M., Gopalakrishnan, L., Johnson, M., Weiser, S. and Puri, M. 2021. Development and feasibility of a group, household level intervention to improve preconception health in rural Nepal. *BMC Public Health.* **2022 Apr 6;22(1)**.

Ding, Y., Li, X.T., Xie, F. and Yang, Y.L. 2015. Survey on the implementation of preconception care in Shanghai, China. *Paediatr Perinat Epidemiol.* **2015 Nov;29(6)**(1365-3016 (Electronic)), pp.492-500.

Directorate of People's Welfare Statistics. 2023. *Indonesian health statistics profile 2023.* [Online]. Central Bureau of Statistics. [Accessed 15 January 2024]. Available from: https://webapi.bps.go.id

Directorate of Population and Labor Statistics. 2020. *Population of Indonesia: The result of long form population census 2020.* [Online]. BPS-Statistics Indonesia.

Djukanovic, I., Hellström, A., Wolke, A. and Schildmeijer, K. 2024. The meaning of continuity of care from the perspective of older people with complex care needs–a scoping review. *Geriatric Nursing.* **55**, pp.354-361.

Draucker, C.B., Martsolf, D.F. and Poole, C. 2009. Developing distress protocols for research on sensitive topics. *Arch Psychiatr Nurs.* **2009 Oct;23(5)**(1532-8228 (Electronic)).

Du, L., La, X., Zhu, L., Jiang, H., Xu, B., Chen, A. and Li, M. 2021. Utilization of preconception care and its impacts on health behavior changes among expectant couples in Shanghai, China. *BMC Pregnancy and Childbirth.* **21**(1), p491.

Dunwoodie, K., Macaulay, L. and Newman, A. 2023. Qualitative interviewing in the field

of work and organisational psychology: Benefits, challenges and guidelines for researchers and reviewers. *Applied Psychology.* **72**(2), pp.863-889.

Edwards, D.J. 2015. Dissemination of research results: on the path to practice change. *The Canadian journal of hospital pharmacy.* **68**(6), p465.

Ekwuazi, E.K., Chigbu, C.O. and Ngene, N.C. 2023. *Reducing maternal mortality in low- and middle-income countries.* Elsevier B.V.

Embbasy Malaysia. 2023. 2023 Report on international religious freedom: Malaysia. [Online]. Available from: https://my.usembassy.gov/2023-report-on-international-religious-freedom-malaysia/

Entwistle, V.A., Cribb, A. and Mitchell, P. 2023. Tackling disrespect in health care: The relevance of socio-relational equality. *Journal of Health Services Research & Policy.* **29**(1), pp.42-50.

Ewald, H., Klerings, I., Wagner, G., Heise, T.L., Stratil, J.M., Lhachimi, S.K., Hemkens, L.G., Gartlehner, G., Armijo-Olivo, S. and Nussbaumer-Streit, B. 2022. Searching two or more databases decreased the risk of missing relevant studies: A metaresearch study. *Journal of Clinical Epidemiology.* **149**, pp.154-164.

Fatmawati, E. 2021. Strategies to grow a proud attitude towards Indonesian cultural diversity. *Linguistics and Culture Review.* **5(S1)**, pp.810-820.

Fauzan, A. and Amroni, H. 2020. The concept of sakīnah family in the contemporary Muslim generation. *Al-'adalah.* **vol.17, No 1, 2020**.

Filippi, V., Chou, D., Barreix, M. and Say, L. 2018. A new conceptual framework for maternal morbidity. *International Journal of Gynecology & Obstetrics.* **141**, pp.4-9.

Fitrianto, A. 2024. The importance of praying for pious children for parents who have died. [Online].

Fleming, T.P., Watkins, A.J., Velazquez, M.A., Mathers, J.C., Prentice, A.M., Stephenson, J., Barker, M., Saffery, R., Yajnik, C.S., Eckert, J.J., Hanson, M.A., Forrester, T., Gluckman, P.D. and Godfrey, K.M. 2018. Origins of lifetime health around the time of conception: Causes and consequences. *Lancet.* **2018 May 5;391(10132)**(1474-547X (Electronic)), pp.1842-1852.

Frayne, D.J. 2017. Preconception care is primary care: A call to action. *American Family Physician.* **96**(8), pp.492-494.

Frey, K.A., Navarro, S.M., Kotelchuck, M. and Lu, M.C. 2008. The clinical content of preconception care: Preconception care for men. *American journal of obstetrics and gynecology.* **199**(6), pp.S389-S395.

Gao, Q., Zhang, B., Zhou, Q., Lei, C., Wei, X. and Shi, Y. 2024. The impact of provider-patient communication skills on primary healthcare quality and patient satisfaction in rural China: Insights from a standardized patient study. *BMC Health Services Research.* **24**(1), p579.

Gitahi, N., Eshiwani, S.J., Mutai, K., Mecha, J.O. and Kiarie, J.N. 2020. Preconception care uptake and immediate outcomes among discordant couples accessing routine hiv care in Kenya. *Obstetrics and Gynecology International.* **2020; 2020: 1675987**.

Goodrick, D. 2020. *Comparative case studies.* SAGE Publications Limited Thousand Oaks, CA, USA.

Grissinger, M. 2017. Disrespectful behavior in health care: Its impact, why it arises and persists, and how to address it-part 2. *P T.* **2017 Feb;42(2)**(1052-1372 (Print)), pp.74-77.

Hamilton, A.B. and Finley, E.P. 2019. Qualitative methods in implementation research: An introduction. *Psychiatry Res.* **2019 Oct;280:112516.**(1872-7123 (Electronic)).

Haq, Z.U., Rasheed, R., Rashid, A. and Akhter, S. 2023. Criteria for assessing and ensuring the trustworthiness in qualitative research. *International Journal of Business Reflections.* **4**(2).

Harper, T., Kuohung, W., Sayres, L., Willis, M.D. and Wise, L.A. 2023. Optimizing preconception care and interventions for improved population health. *Fertility and Sterility.* **120**(3, Part 1), pp.438-448.

Haryanto, S. 2019. The sociological context of religion in Indonesia. *Research in the Social Scientific Study of Religion.* [Online]. pp.67-102.

Hasanah, E. 2023. Java community philosophy: More children, many fortunes. *Genealogy.* **7**(1), p3.

Hong, Pluye, P., Fabregues, S., Bartlett, G., Boardman, F., Margaret, C.M., Dagenais, P., Gagnon, M., Griffiths, F., Nicolau, B., O'cathain, A., Rousseauh, M. and Isabelle Vedel, I. 2018. Mixed methods appraisal tool (MMAT) version 2018: User guide. [Online]. Available from: http://mixedmethodsappraisaltoolpublic.pbworks.com/w/file/fetch/127916259/MMAT_2018_criteria-manual_2018-08-01_ENG.pdf

Hong, X., Zhao, J., Huang, K., Dai, Q., Zhang, H., Xuan, Y., Wu, J., Fang, S., Wang, Q. and Shen, H. 2019. Preconception blood pressure and time to pregnancy among couples attempting to conceive their first pregnancy. *American journal of obstetrics and gynecology.* **221**(5), pp.470. e471-470. e410.

Hossain, N. and Shaikh, Z.F. 2022. Maternal deaths due to indirect causes: Report from a tertiary care center of a developing country. *Obstetric Medicine.* **15**(3), pp.176-179.

Hristova-Atanasova, E., Iskrov, G. and Stefanov, R. 2024. Family planning and preconception care service management: The key role of Bulgarian GPs. *Healthcare.* **12**(11), p1096.

Hyre, A., Caiola, N., Amelia, D., Gandawidjaja, T., Markus, S. and Baharuddin, M. 2019. Expanding maternal and neonatal survival in Indonesia: A program overview. *Int J Gynaecol Obstet.* **2019 Feb;144**(1879-3479 (Electronic)).

Ide, Y. and Beddoe, L. 2024. Challenging perspectives: Reflexivity as a critical approach to qualitative social work research. *Qualitative Social Work.* **23**(4), pp.725-740.

Law number 17 of 2023 concerning on health. 2023. [Online database].

Law (UU) number 32 of 2004 concerning regional government. 2004. [Online database]. Database Regulations.

Government regulation number 38 of 2007 concerning the division of government affairs

between the government, provincial regional governments and regency/city regional governments. 2007. [Online database]. Jakarta.

Minister of health regulation number 43 of 2019 concerning community health centers (Puskesmas). 2019. [Online database]. Database Regulations.

Jafar, W.A. and Fahimah, I. 2022. The concept of munakahat fiqh; role of husband and wife in forming a samara family (sakinah, mawadah, waromah) version of dhau al-mishbah fi bayani ahkam an-nikah by kh. hasyim asy'ari. *International Journal of Educational Research and Social Sciences (IJERSC).* **3**(2), pp.832-843.

Jewkes, R., Nduna, M., Levin, J., Jama, N., Dunkle, K., Puren, A. and Duvvury, N. 2008. Impact of stepping stones on incidence of HIV and HSV-2 and sexual behaviour in rural South Africa: Cluster randomised controlled trial. *Bmj.* **337**.

Johnson, J.L., Adkins, D. and Chauvin, S. 2020. A review of the quality indicators of rigor in qualitative research. *Am J Pharm Educ* **2020 January; 84(1): 7120**(1553-6467 (Electronic)).

Jourabchi, Z., Sharif, S., Lye, M.S., Saeed, A., Khor, G.L. and Tajuddin, S.H.S. 2019. Association between preconception care and birth outcomes. *Am J Health Promot.* **2019 Mar;33(3)**(2168-6602 (Electronic)), pp.363-371.

Joyce, S. 2021. Wait and transfer, curate and prosume: Women's social experiences of birth spaces architecture. *Women and Birth.* **34**(6), pp.540-553.

Junjie, M. and Yingxin, M. 2022. The discussions of positivism and iInterpretivism. *Glob Acad J Humanit Soc Sci.* **4**(1), pp.10-14.

Kassaw, B., Abera, N., Legesse, T., Workineh, A. and Ambaw, G. 2022. Sero-prevalence and associated factors of hepatitis B virus among pregnant women in Hawassa city public hospitals, southern Ethiopia: Cross-sectional study design. *SAGE Open Med.* **2022 Dec 6;10:20503121221140778**.

Khekade, H., Potdukhe, A., Taksande, A.B., Wanjari, M.B. and Yelne, S. 2023. Preconception care: A strategic intervention for the prevention of neonatal and birth disorders. *Cureus.* **2023 Jun 29;15(6):e41141**.

Khun, T.S. 2015. *The structure of scientific revolutions.* The University of Chicago Press.

Kiernan, M.D. and Hill, M. 2018. Framework analysis: A whole paradigm approach. *Qualitative Research Journal.* **18**(3), pp.248-261.

Kleinheksel, A.J., Rockich-Winston, N., Tawfik, H. and Wyatt, T.R. 2020. Qualitative research in pharmacy education. *American Journal of Phamaceutical Education.* **84**(1).

Korri, R., Bakuli, A., Owolabi, O.A., Lalashowi, J., Azize, C., Rassool, M., Sathar, F., Rachow, A. and Ivanova, O. 2022. Tuberculosis and sexual and reproductive health of women in four African countries. *International Journal of Environmental Research and Public Health.* **19**(22), p15103.

Kurniawati, W. and Afiyanti, Y. 2019. Establishing healthy family and offspring on prospective bridegroom": A qualitative analysis. *Enfermería Clínica.* **29**, pp.855-861.

Kwame and Petrucka. 2021a. A literature-based study of patient-centered care and communication in nurse-patient interactions: barriers, facilitators, and the way forward.

BMC Nursing. **20**(1), p158.

Kwame and Petrucka. 2021b. A literature-based study of patient-centered care and communication in nurse-patient interactions: Barriers, facilitators, and the way forward. *BMC Nurs.* **2021 Sep 3;20(1):158**(1472-6955 (Print)).

Labra, O., Castro, C., Wright, R. and Chamblas, I. 2019. Thematic analysis in social work: A case study. In: Raju, N.B. ed. *Global Social Work.* Rijeka: IntechOpen, p.Ch. 12.

Ladur, A.N., van Teijlingen, E. and Hundley, V. 2021. Male involvement in promotion of safe motherhood in low-and middle-income countries: A scoping review. *Midwifery.* **103**, p103089.

Lang, A.Y., Bartlett, R., Robinson, T. and Boyle, J.A. 2020. Perspectives on preconception health among migrant women in Australia: A qualitative study. *Women and Birth.* **33**(4), pp.334-342.

Lassi, Kedzior, S.G., Tariq, W., Jadoon, Y., Das, J.K. and Bhutta, Z.A. 2020. Effects of preconception care and periconception interventions on maternal nutritional status and birth outcomes in low- and middle-income countries: A systematic review. *Nutrients.* **2020 Feb 26;12(3)**(2072-6643 (Electronic)).

Levac, D., Colquhoun, H. and O'Brien, K.K. 2010. Scoping studies: Advancing the methodology. *Implementation Science.* **5**(1), p69.

Li, C., Zhao, K., Li, H., Farah, O.I., Wang, J., Sun, R. and Zhang, H. 2014. Free preconceptual screening examination service in rural areas of Hubei Province, China in 2012. *Plos one.* **9**(11), pe111918.

Long, H.A., French, D.P. and Brooks, J.M. 2020. Optimising the value of the critical appraisal skills programme (CASP) tool for quality appraisal in qualitative evidence synthesis. *Research Methods in Medicine & Health Sciences.* **1**(1), pp.31-42.

M'Hamdi, H., I., van Voorst, S.F., Pinxten, W., Hilhorst, M.T. and Steegers, E.A. 2017. Barriers in the uptake and delivery of preconception care: Exploring the views of care providers. *Matern Child Health J.* **21(1)**(1573-6628 (Electronic)), pp.21–28.

Macallister, L., Zimring, C. and Ryherd, E. 2016. Environmental variables that influence patient satisfaction: A review of the literature. *HERD: Health Environments Research & Design Journal.* **2016 Oct;10(1)**.

Mahendradhata, Y., Trisnantoro, L., Listyadewi, S., Soewondo, P., Marthias, T., Harimurti, P. and Prawira, J. 2017. *The republic of Indonesia health system review.* [Online]. New Delhi: World Health Organization, Regional Office for South-East Asia. The Republic of Indonesia health system review. [Accessed 14 January 2024]. Available from: https://iris.who.int/bitstream/handle/10665/254716/9789290225164-eng.pdf%3Fsequence%3D1&ved=2ahUKEwjBqJrNoNaGAxXFzDgGHYmyBU4QFnoECCIQAQ&usg=AOvVaw1eQxRLH_b_xibYGDIxUVge

Mahmood, Mufidah, I., Scroggs, S., Siddiqui, A.R., Raheel, H., Wibdarminto, K., Dirgantoro, B., Vercruyssen, J. and Wahabi, H.A. 2018. Root-cause analysis of persistently high maternal mortality in a rural district of Indonesia: Role of clinical care quality and health services organizational factors. *BioMed Research International.* **2018**, p3673265.

Mahmood, Yusof, N.M., Saidi, S. and Ahmad, A.C. 2023. The integration of islamic values in daily clinical practice among healthcare professionals: A scoping review. *IIUM Medical Journal Malaysia.* **22(3)**.

Mak, S. and Thomas, A. 2022. Steps for conducting a scoping review. *J Grad Med Educ.* **2022 Oct; 14(5)**(1949-8357 (Electronic)), pp.565–567.

Mandimba, J., Thant, W.P., Wangou, M.M., Bataliack, S.M., Mingiedi, C.M., Lule, F.J., Karamagi, H.C. and Makubalo, L.E. 2023. Hepatitis can't wait. *Analytical Fact Sheet.* [Online]. Available from: https://aho.afro.who.int/country-profiles/af

Manik, H., Triyoga, R.S., Siregar, M.F.G., Rochadi, R.K. and Poddar, S. 2021. Sustainability in transformation of maternal mortality by interaction based approach in Dairi, Indonesia. *J Public Health Res.* **2021 Dec 28**(2279-9028 (Print)).

Mason, J. 2017. *Qualitative researching.* Sage Publication.

Mayasari, T. and Thesa, A. 2023. Socio-cultural diversity in Indonesia knitting harmony in difference. *International Journal of Students Education.* **1(2)**, pp.250–252. .

Meijer, R., Aarts, P., Wagemakers, J., Kanie, M. and Geel, A. 2012. *Saudi Arabia between conservatism, accomodation and reform.* The Hague: Netherlands Institute of International Relations 'Clingendael'.

Miles, M.B., Huberman, A.M. and Saldaña, J.A. 2014. *Qualitative data analysis a methods sourcebook.* Thousand Oaks, Califorinia SAGE Publications, Inc.

Ministry of Health Republic Indonesia. 2008. *Decree of the Minister of Health of the Republic of Indonesia No. 1051/Menkes/SK/XI/2008 concerning guidelines for the implementation of 24-hour comprehensive emergency neonatal obstetrics (PONEK) services in hospitals.*

Ministry of State Secretariat of the RI. 2015. *Journey to national health insurance.* [Online]. Jakarta: National Team for the Acceleration of Poverty Reduction. [Accessed 11 January 2024]. Available from: www.tnp2k.go.id

Mogashoa, T. 2014. Understanding critical discourse analysis in qualitative research. *International Journal of Humanities Social Sciences and Education.* **1**(7), pp.104-113.

Mosadeghrad, A.M. 2014. Factors influencing healthcare service quality. *International Journal of Health Policy and Management.* **3**(2), pp.77-89.

Moss, J.L. and Harris, K.M. 2015. Impact of maternal and paternal preconception health on birth outcomes using prospective couples' data in Add Health. *Archives of gynecology and obstetrics.* **291**, pp.287-298.

Moudatsou, M., Stavropoulou, A., Philalithis, A. and Koukouli, S. 2020. The role of empathy in health and social care professionals. *Healthcare (Basel).* **2020 Jan 30;8(1):26**(2227-9032 (Print)).

Moyo-Chilufya, M., Maluleke, K., Kgarosi, K., Muyoyeta, M., Hongoro, C. and Musekiwa, A. 2023. The burden of non-communicable diseases among people living with HIV in Sub-Saharan Africa: A systematic review and meta-analysis. *EClinicalMedicine.* **2023 Oct 5;65:102255.**

Msomi, N., Naidoo, K., Yende-Zuma, N., Padayatchi, N., Govender, K., Singh, J.A.,

Abdool-Karim, S., Abdool-Karim, Q. and Mlisana, K. 2020. High incidence and persistence of hepatitis B virus infection in individuals receiving HIV care in KwaZulu-Natal, South Africa. *BMC infectious diseases.* **20**, pp.1-9.

Mukrimin. 2023. The intersection of islam and politics in indonesia's local autonomy era *AL-IJTIMA`I: International Journal of Government and Social Science.* **9, No. 1, October 2023**.

Munn, Z., Peters, M.D.J., Stern, C., Tufanaru, C., McArthur, A. and Aromataris, E. 2018. Systematic review or scoping review? Guidance for authors when choosing between a systematic or scoping review approach. *BMC Medical Research Methodology.* **18**(1), p143.

Murphy, M. and Salisbury, C. 2020. Relational continuity and patients' perception of GP trust and respect: A qualitative study. *Br J Gen Pract.* **2020;70(698)**, pp.e676–e683.

Maternal mortality: The urgency of a systematic and multisectoral approach in mitigating maternal deaths in Africa. 2023. [Online database]. WHO: Integrated African Health Observatory.

Nacev, E., Greene, M.Z., Taboada, M.P. and Ehrenthal, D.B. 2023. Factors influencing provider behavior around delivery of preconception care. *Matern Child Health J.* **2022 Jul;26(7)**(1573-6628 (Electronic)), pp.1567-1575.

Narendra, A.R., Kowlgi, A., Patil, G.H., N, S. and Kar, A. 2023. The why, what and how of preconception care: An exploratory descriptive qualitative study in Karnataka, India. *Arch Public Health.* **81, 177 (2023)**(0778-7367 (Print)).

Naviandi, U., Wahyuni, S., Ikawati, D., Handiyatmo, D., Parwoto, Trisnani, D., Aswarawati, A.N.D., Zoraya, E., Purbowati, A., Synthesa, P., Fahmi, I., Sitorus, U.R., Padini, P.R.A. and Pratama, A. 2023. Mortality in Indonesia long-term results of the 2020 population census. [Online]. 0410024002. [Accessed 5 January 2024]. Available from: https://sensus.bps.go.id

Ndou, N.P., Malwela, T., Maputle, M.S., Raliphaswa, N.S., Mabasa, L., Samie, A. and Netshikweta, M.L. 2023. Factors related to the implementation of preconception care recommendations in selected districts of limpopo province: A qualitative study. In: *Healthcare*: MDPI, p.2586.

NEJM Catalyst. 2017. What is patient-centered care? *Catalyst Carryover.* **3**(1).

Ningrum, A.R., Fahmiyah, I., Levi, A. and Syahputra, M. 2022. Short birth intervals classification for Indonesia's women. *Bulletin of Electrical Engineering and Informatics.* **11**, pp.1535-1542.

Nomali, M., Mehrdad, N., Heidari, M., Ayati, A., Yadegar, A., Payab, M., Olyaeemanesh, A. and Larijani, B. 2023. Challenges and solutions in clinical research during the COVID-19 pandemic: A narrative review. *Health Sci Rep.* **2023 Aug 6;6(8)**(2398-8835 (Electronic)).

Nugraheni, S.A., Martini, M., Kartasurya, M.I., Johan, I., Ambari, R.P., Sulistiawati, E. and Nurchumaida, N. 2018. The change of knowledge and attitude of bride and groom candidate after reproductive health pre-marital course by KUA officer. *Jurnal Kesehatan Masyarakat.* **14**(1), pp.126-132.

Nurdin, A., Amaruddin, A.I., Tahir, A.M., Jusuf, E.C. and Sari, M. 2023. Men's

determinant factors on antenatal care involvement and childbirth place preference in Indonesia: An analysis of the 2012 Indonesia Demographic and Health Survey (IDHS). *Journal of Public Health Research.* **12**(4), p22799036231204318.

Nuri, N.N., Sarker, M., Ahmed, H.U., Hossain, M.D., Beiersmann, C. and Jahn, A. 2019. Experience and perceived quality of care of patients and their attendants in a specialized mental hospital in Bangladesh. *International Journal of Mental Health Systems.* **13**(1), p46.

O'Brien, J. and Abdelhadi, E. 2020. Re-examining Restructuring: Racialization, Religious Conservatism, and Political Leanings in Contemporary American Life. *Social Forces.* **99**(2), pp.474-503.

Oermann, M.H., Wrigley, J.F., Nicoll, L.F., Ledbetter, L.F., F., C.-T.H. and Edie, A.H. 2021. Integrity of databases for literature searches in nursing: Avoiding predatory journals. *ANS Adv Nurs Sci.* **2021 Apr; 44(2)**(1550-5014 (Electronic)), pp.102–110.

Okemo, J.K., Kamya, D., Mwaniki, A.M. and Temmerman, M. 2021. Determinants of preconception care among pregnant women in an urban and a rural health facility in Kenya: A qualitative study. *BMC Pregnancy and Childbirth.* **21**(1), p752.

Olmos-Vega, F.M., Stalmeijer, R.E., Varpio, L. and Kahlke, R. 2023. A practical guide to reflexivity in qualitative research: AMEE Guide No. 149. *Medical teacher.* **45**(3), pp.241-251.

Oswald, D., Sherratt, F. and Smith, S. 2014. Handling the hawthorne effect: The challenges surrounding a participant observer. *Review of social studies.* **1**(1), pp.53-73.

Ozim, C.O., Mahendran, R., Amalan, M. and Puthussery, S. 2023. Prevalence of human immunodeficiency virus (HIV) among pregnant women in Nigeria: A systematic review and meta-analysis. *BMJ open.* **13**(3), pe050164.

Palinge, E., Nurdin, N. and Rusdin, R. 2022. The importance of islamic education to the early childhood. In: *Proceeding of International Conference on Islamic and interdisciplinary Studies (ICIIS), 2022*

Palinkas, L.A., Horwitz, S.F., F., G.C., Wisdom, J.F., Duan, N.F. and Hoagwood, K. 2015. Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Adm Policy Ment Health.* **2015 Sep;42(5)**(1573-3289 (Electronic)), pp.533-544.

Pattyn, V., Molenveld, A. and Befani, B. 2019. Qualitative comparative analysis as an evaluation tool: Lessons from an application in development cooperation. *American Journal of Evaluation.* **40**(1), pp.55-74.

Peters, Godfrey, C., McInerney, P., Munn, Z., Tricco, A.C. and Khalil, H. 2020. *Chapter 11: Scoping reviews (2020 version).* [Online]. Available from: https://doi.org/10.46658/JBIMES-20-12

Peters, Godfrey, C.F., Khalil, H.F., McInerney, P.F., Parker, D.F. and Soares, C.B. 2015. Guidance for conducting systematic scoping reviews. *Int J Evid Based Health* **2015 Sep;13(3):141-6.**
(1744-1609 (Electronic)).

Peters, Marnie, C., Colquhoun, H., Garritty, C.M., Hempel, S., Horsley, T., Langlois, E.V.,

Lillie, E., O'Brien, K.K., Tunçalp, Ö., Wilson, M.G., Zarin, W. and Tricco, A.C. 2021. Scoping reviews: Reinforcing and advancing the methodology and application. *Systematic Reviews.* **10**(1), p263.

Peterson, J., Pearce, P.F., Ferguson, L.A. and Langford, C.A. 2017. Understanding scoping reviews: Definition, purpose, and process. *J Am Assoc Nurse Pract.* **29 (1)**, pp.12-16.

Pieper, D. 2021. Language restrictions in systematic reviews should not be imposed in the search strategy but in the eligibility criteria if necessary. *Journal of clinical epidemiology.* **132**, p146.

Pollock, D., Davies, E.L., Peters, M.D.J., Tricco, A.C., Alexander, L., McInerney, P., Godfrey, C.M., Khalil, H. and Munn, Z. 2021. Undertaking a scoping review: A practical guide for nursing and midwifery students, clinicians, researchers, and academics. *J Adv Nurs.* **2021 Apr;77(4)**(1365-2648 (Electronic)), pp.2102-2113.

Popay, J., Roberts, H., Sowden, A., Petticrew, M., Arai, L., Rodgers, M., Britten, N., Roen, K. and Duffy, S. 2006. Guidance on the conduct of narrative synthesis in systematic reviews: A product from the ESRC methods programme. [Online]. **Version1: April 2006**. [Accessed 4 January 2024]. Available from: http://www.lancaster.ac.uk

Pratiwi, C.S. 2019. *Healthcare professionals' assessment of pregnant women's psychological health in Indonesia: A qualitative case study*. PhD thesis, University of Leeds, United Kingdom.

President of the republic of Indonesia, law no. 7 of 1974 concerning marriage. 2023.

President of the republic of Indonesia, law no. 14 of 2009 concerning marriage.

Prior, A., Vestergaard, C.H., Vedsted, P., Smith, S.M., Virgilsen, L.F., Rasmussen, L.A. and Fenger-Grøn, M. 2023. Healthcare fragmentation, multimorbidity, potentially inappropriate medication, and mortality: A Danish nationwide cohort study. *BMC Medicine.* **21**(1), p305.

Priya, A. 2020. Case study methodology of qualitative research: Key attributes and navigating the conundrums in its application. *Sociological Bulletin.* **70**(1), pp.94-110.

Public Health England. 2018. *Making the case for preconception care: Planning and preparation for pregnancy to improve maternal and child health outcomes.* [Online]. London: Public Health England.

Puri, V.G.S., Inayaturrobbani, F. and Puteri, N.A. 2023. Because a man is just a bonus: A qualitative study on women who decide not to marry *OISAA Journal of Indonesia Emas.* **6**(1), pp.33-40.

Rabiei, Z., Shariati, M., Mogharabian, N., Tahmasebi, R., Ghiasi, A. and Motaghi, Z. 2023. Men's knowledge of preconception health: A systematic review. *J Family Med Prim Care.* **2023 Feb; 12(2)**(2249-4863 (Print)), pp. 201–207.

Ragin, C.C. and Schneider, G.A. 2011. *Case-oriented theory building and theory testing.*

Rahayu, S., Romadlona, N.A., Utomo, B., Aryanty, R.I., Liyanto, E., Hidayat, M. and Magnani, R.J. 2023. Reassessing the level and implications of male involvement in family planning in Indonesia. *BMC Women's Health.* **23**(1), p220.

Richards, L. and Morse, J.M. 2012. *Read me first for a user' s guide to qualitative methods.* Sage publications.

Rintani, A. and Wibowo, A. 2019. Health sector decentralization and its implication to health services in Indonesia *Jurnal Ilmu Kesehatan Masyarakat.* **March 2019**, pp.1-14.

Ronaldi, A., Subhan, A. and Zamhari, A. 2023. Indonesian Islam: History, Characteristics and Global Contribution. *Islamika Inside: Jurnal Keislaman Dan Humaniora.* **9(1)**, pp.100-120. .

Ross, P. and Zaidi, B.N.L. 2019. Limited by our limitations. *Perspect Med Educ.* **2019 Aug;8(4)**(2212-277X (Electronic)), pp.261-264.

Rowe, A. and Knox, M. 2023. The impact of the healthcare environment on patient experience in the emergency department: A systematic review to understand the implications for patient-centered design. *HERD*
2023 Apr;16(2)(2167-5112 (Electronic)), pp.310-329.

Samanta, S.D., Usmanova, G., Shaheen, A., Chandra, M. and Mehra, S. 2018. Family-centric safe motherhood approach for marginalized young married couples in rural India. *Journal of Family Medicine and Primary Care.* **7**(5), pp.852-858.

Schoenaker, D., Lovegrove, E., Cassinelli, E., Hall, J., McGranahan, M., McGowan, L., Carr, H., Alwan, N., Stephenson, J. and Godfrey, K. 2024. Preconception indicators and associations with health outcomes reported in UK routine primary care data: a systematic review. *medRxiv.* p2024.2002. 2005.24302342.

Schreier, M. 2012. *Qualitative content analysis in practice.*

Schreier, M., Stamann, C., Janssen, M., Dahl, T. and Whittal, A. 2019. Qualitative content analysis: Conceptualizations and challenges in research practice. *Qualitative Content Analysis I* **20, 3, 2019**.

Schwartz, S.R., Bassett, J., Sanne, I., Phofa, R., Yende, N. and Van Rie, A. 2014. Implementation of a safer conception service for HIV-affected couples in South Africa. *Aids.* **28**, pp.S277-S285.

Shaluhiyah, Z., Suryoputro, A. and Indraswari, R. 2023. Factors influencing men's involvement in maternal and child health: Men's experiences and religious leader's support in Central Java, Indonesia. *Journal of Health Research.* **37**(5), pp.349-355.

Shaw, E. 2017. Chapter 2: Preconception care. *Healthy Living.* [Online]. Public Health Agency of Canada.

Shawe, J., Delbaere, I., Ekstrand, M., Hegaard, H.K., Larsson, M., Mastroiacovo, P., Stern, J., Steegers, E., Stephenson, J. and Tydén, T. 2015. Preconception care policy, guidelines, recommendations and services across six European countries: Belgium (Flanders), Denmark, Italy, the Netherlands, Sweden and the United Kingdom. *The European Journal of Contraception & Reproductive Health Care.* **20**(2), pp.77-87.

Shibata, Y., Abe, M., Narumoto, K., Kaneko, M., Tanahashi, N., Fetters, M.D. and Inoue, M. 2023. Knowledge and practices of preconception care among rural Japanese women: Findings from a mixed methods investigation. *BMC Pregnancy and Childbirth.* **23**(1), p667.

Soewondo, P., Nadjib, M., Sari, K., Megraini, A., Nurwahyuni, A., Yunita, Examinar,

Nurfitriyani, M., Wahyuningsih, H., Putra, R.M., Yuniatun, R., Hanifa, D., Farianti, Y., Herlinawati, Sari, N.M., Tristiana, N., Manik, N.C., Ridhawaty, E., Diah, E., Rabbaniyah, F. and Prasetyo, A. 2022. *National health accounts Indonesia 2020.* [Online]. Jakarta: Publishing Institution Health Development Policy Agency (BKPK Publishing Institution).

Sparrow, R., Suryahadi, A. and Widyanti, W. 2013. Social health insurance for the poor: Targeting and impact of Indonesia's askeskin programme. *Social Science & Medicine.* **96**, pp.264-271.

Spradley, J. 1980. *Participant observation.* New York: Holt, Rineart and WinSton, Inc.

Stake, R.E. 1995. *The art of case study research.* London, Thousand Oaks: Sage Publications.

Steegers, E.A.P. 2023. *A preconception care strategy: An eye view series report.*

Steel, A., Lucke, J. and Adams, J. 2015. The prevalence and nature of the use of preconception services by women with chronic health conditions: An integrative review. *BMC Women's Health.* **15**(1), p14.

Stephenson, J., Heslehurst, N., Hall, J., Schoenaker, D., Hutchinson, J., Cade, J.E., Poston, L., Barrett, G., Crozier, S.R., Barker, M., Kumaran, K., Yajnik, C.S., Baird, J. and Mishra, G.D. 2018. Before the beginning: Nutrition and lifestyle in the preconception period and its importance for future health. *Lancet.* **2018 May 5;391(10132)**(1474-547X (Electronic)), pp.1830-1841.

Sule, B. 2023. The evolution of religious influence on policy: A review of historical and contemporary studies. *Religion and Policy Journal* **(1) (1) 2023**, pp.22-26.

Sutarsa, I.Y. 2023. Reformasi sistem kesehatan di Indonesia bukanlah solusi sederhana untuk mengatasi kesenjangan. [Online]. [Accessed 20 January 2024]. Available from: https://eastasiaforum-org.

Takaeb, A.E.L. 2020. Exploration of socio-cultural determinants of maternal mortality in Indonesia. *Conference on Tourism, Economics, Accounting, Management and Social Science (TEAMS 2020).* [Online]. [Accessed 10 January 2024]. Available from: https://www.atlantis-press.com

Taylor, J., Fradgley, E.A., Clinton-McHarg, T., Hall, A. and Paul, C.L. 2023. Perceived importance of motional support provided by health care professionals and social networks: Should we broaden our focus for the delivery of supportive care? *Asia-Pacific Journal of Clinical Oncology.* **19**(6), pp.681-689.

The Jakarta Post. 2024. BPJS Kesehatan recognized as best practice of world social security. [Online]. Available from: https://www.thejakartapost.com

The Lancet. 2018. Campaigning for preconception health. *The Lancet.* **May 05, 2018**.

The White Ribbon Alliance. 2015. UN special rapporteur on violence against women: On mistreatment and violence against women during reproductive healthcare with a focus on childbirth. [Online]. Available from: https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://whiteribbonalliance.org/movements/respect-campaign/&ved=

Prevalence of anemia among pregnant women (%) - Indonesia. 2019. [Online database].

Current health expenditure (% of GDP) - Rwanda. 2024a. [Online database].

World bank country and lending groups. 2024b. [Online database]. The World Bank.

Tomaszewski, L.E., Zarestky, J. and Gonzalez, E. 2020. Planning qualitative research: Design and decision making for new researchers. *International Journal of Qualitative Methods.* **19**, p1609406920967174.

Tong, F. 2014. An Investigation of Research Paradigms in Two Studies on Proposition 227. *International Journal of Humanities and Social Science.* **4, No. 6(1); April 2014**.

Tricco, A.C., Lillie, E., Zarin, W., O'Brien, K.K., Colquhoun, H., Levac, D., Moher, D., Peters, M.D.J., Horsley, T. and Weeks, L. 2018. PRISMA extension for scoping reviews (PRISMA-ScR): Checklist and explanation. *Annals of internal medicine.* **169**(7), pp.467-473.

Tripathy, J.P., Bhatnagar, A., Shewade, H.D., Kumar, A.M.V., Zachariah, R. and Harries, A.D. 2017. Ten tips to improve the visibility and dissemination of research for policy makers and practitioners. *Public health action.* **7**(1), pp.10-14.

Turon, H., Wolfenden, L., Finch, M., McCrabb, S., Naughton, S., O'Connor, S.R., Renda, A., Webb, E., Doherty, E. and Howse, E. 2023. Dissemination of public health research to prevent non-communicable diseases: a scoping review. *BMC Public Health.* **23**(1), p757.

Ukoha, W.C., Mtshali, N.G. and Adepeju, L. 2022. Current state of preconception care in sub-Saharan Africa: A systematic scoping review. *Afr J Prim Health Care Fam Med.* **14**(1), pp.e1-e11.

Uwamusi, C.B. and Ajisebiyawo, A. 2023. Participant observation as research methodology: Assessing the defects of qualitative observational data as research tools. *Asian Journal of Social Science and Management Technology.* **5**(3), pp.19-32.

Vaismoradi, M., Turunen, H. and Bondas, T. 2013. Content analysis and thematic analysis: Implications for conducting a qualitative descriptive study. *Nursing & health sciences.* **15**(3), pp.398-405.

Valaitis, R., Meagher-Stewart, D., Martin-Misener, R., Wong, S.T., MacDonald, M., O'Mara, L., Baumann, A., Brauer, P., Green, M., Kaczorowski, J., Savage, R., Austin, P., MacLellan, K., McNeil, K., Murray, N., Isaacs, S. and Chau, L. 2018. Organizational factors influencing successful primary care and public health collaboration. *BMC Health Services Research.* **18**(1), p420.

Verbiest, S., McClain, E. and Woodward, S. 2016. Advancing preconception health in the United States: strategies for change. *Upsala journal of medical sciences.* **121**(4), pp.222-226.

Wa-Mbaleka, S. 2020. The researcher as an instrument. In: *Computer supported qualitative research: New trends on qualitative research*: Springer, pp.33-41.

Wall, K.M., Vwalika, B., Haddad, L., Khu, N.H., Vwalika, C., Kilembe, W., Chomba, E., Stephenson, R., Kleinbaum, D. and Nizam, A. 2013. Impact of long-term contraceptive promotion on incident pregnancy: A randomized controlled trial among HIV-positive couples in Lusaka, Zambia. *JAIDS Journal of Acquired Immune Deficiency Syndromes.* **63**(1), pp.86-95.

Wasti, S.P., Simkhada, P., van Teijlingen, E.R., Sathian, B. and Banerjee, I. 2022. The growing importance of mixed-methods research in health. *Nepal J Epidemio.* **2022 Mar 31**(2091-0800 (Print)), pp.1175-1178.

WHO. 2013. *Preconception care to reduce maternal and childhood mortality and morbidity.* [Online].

WHO. 2015. *Strategies toward ending preventable maternal mortality* [Online]. Geneva: World Health Organization. Available from: (http://apps.who.int/iris/bitstream/10665/153540/1/ WHO_RHR_15.03_eng.pdf

WHO. 2018. *Quality, equity, dignity: the network to improve quality of care for maternal, newborn and child health – strategic objectives.* [Online]. WHO Document Production Services, Geneva, Switzerland. [Accessed 22 May 2024].

WHO. 2019a. Quality of care for maternal and newborn health: A monitoring framework for network countries. *Quality, Equity, Dignity: A Network for Improving Quality of Care for Maternal, Newborn and Child Health.*

WHO. 2019b. *Quality, Equity, Dignity; A Network for Improving Quality of Care for Maternal, Newborn and Child Health.* [Online]. WHO.

WHO. 2022. *Global tuberculosis report 2022.* Geneva: World Health organization; 2022. licence: cc bY-Nc-sa 3.0 iGo.

WHO. 2023. Improving maternal and newborn health and survival and reducing stillbirth: progress report 2023. [Online].

WHO. 2024. Maternal Mortality. [Online]. [Accessed 16 April 2024]. Available from: https://www.who.int

WHO, UNICEF, UNFPA, World Bank Group and Division, U.P. 2023. *Trends in maternal mortality 2000 to 2020: estimates by WHO, UNICEF, UNFPA, World Bank Group and UNDESA/Population Division.* [Online]. Geneva: World Health Organization; 2023. Licence: CC BY-NC-SA 3.0 IGO.

Wilhelmy, A. and Köhler, T. 2021. Qualitative research in work and organizational psychology Journals: Practices and future opportunities. *European Journal of Work and Organizational Psychology.* **in press, 31**, pp.161–185.

Williams, J.P. 2008. Nonparticipant observation. *The Sage encyclopedia of qualitative research methods.* Los Angeles: Sage Publications., pp.561-562.

The world bank in Indonesia 2023. [Online database].

World Health Statistics. 2023. *Monitoring health for the SDGs, Sustainable Development Goals.* [Online]. Geneva: World Health Organization; Licence: CC BY-NC-SA 3.0 IGO.

Xie, D., Xiang, Y., Wang, A., Xiong, L., Kong, F., Liu, Z. and Wang, H. 2020. The risk factors of adverse pregnancy outcome for pre-pregnancy couples in Hunan, China: A cross-sectional study based on population. *Medicine.* **99**(45), pe23094.

Xu, J., Li, X. and Zhou, Q. 2022. Nationwide-free preconception care strategy: Experience from China. *Frontiers in Public Health.* **10**, p934983.

Yin, R.K. 2018. *Case study research and applications.* Sage Thousand Oaks, CA.

Zhang, S., Wang, Q. and Shen, H. 2015. Design of the national free proception health examination project in China. *Zhonghua yi xue za zhi.* **95**(3), pp.162-165.

Zhou, Q., Yang, Y., Wang, L., Chen, X., Xu, Q., Wang, Q., Shen, H., Xu, Z., Zhang, Y. and Yan, D. 2022. Intra-couple discordance in preconception syphilis screening for both spouses: A national and population-based survey in China, 2013–2018. *BJOG: An International Journal of Obstetrics & Gynaecology.* **129**(2), pp.313-321.

List of Appendices

Appendix 1: Search Strategy and Results

NO.	DATA BASE(S) & RESULT(S)			Final Article(s)
1.	**Ovid MEDLINE(R) (1946 to May 19, 2020 to 19 May)**			**377**
	Search	**Search Term**	**Results**	
	1	couple*.mp. or exp Couples Therapy/	376142	
	2	exp Men/ or exp Male/	8511550	
	3	partner*.mp.	178916	
	4	exp Spouses/	10022	
	5	exp Fathers/	8967	
	6	exp Parents/	111441	
	7	"groom and bride".mp.	5	
	8	1 or 2 or 3 or 4 or 5 or 6 or 7	8978653	
	9	exp Preconception Care/	2251	
	10	pre-conception.mp.	543	
	11	prepregnancy.mp.	3246	
	12	pre-pregnancy.mp.	3753	
	13	periconception.mp.	263	
	14	peri-conception.mp.	62	
	15	interpregnancy.mp.	548	
	16	inter-pregnancy.mp.	156	
	17	interconception.mp.	80	
	18	inter-conception.mp.	15	
	19	premarital education.mp.	22	
	20	exp Counseling/ or counsel?ing.mp.	123445	
	21	9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20	132632	
	22	8 and 21	58496	
	23	exp Pregnancy Outcome/	73188	
	24	Infant, Low Birth Weight/ or Birth Weight/ or Infant, Newborn/	612785	
	25	Health Behavior/ or Maternal Behavior/ or Paternal Behavior/	61554	
	26	exp Family Planning Services/	24738	
	27	exp Infant Health/	745	
	28	exp Child Development/	59832	
	29	Parenting/	16481	
	30	23 or 24 or 25 or 26 or 27 or 28 or 29	802451	
	31	22 and 30	8610	
	32	limit 31 to (abstracts and english language and Ovid full text available and humans and yr="1990 -Current")	**377**	
2.	**Embase Classic+Embase (1947 to 2020 May 19)**			**106**
	Search	**Search Term**	**Results**	
	1	exp marriage/ or couple*.mp. or exp male/ or exp couple therapy/ or exp female/	12936201	

	2	exp male/	9394695	
	3	partner*.mp.	238000	
	4	exp spouse/	19165	
	5	exp father/	33103	
	6	exp expectant parent/ or exp parent/	280881	
	7	"groom and bride".mp.	5	
	8	1 or 2 or 3 or 4 or 5 or 6 or 7	13150653	
	9	exp prepregnancy care/	1708	
	10	10 pre-conception.mp.	1042	
	11	prepregnan*.mp.	6004	
	12	pre-pregnan*.mp.	6975	
	13	periconception.mp.	361	
	14	peri-conception.mp.	91	
	15	interpregnan*.mp.	756	
	16	inter-pregnan*.mp.	249	
	17	interconception.mp.	100	
	18	inter-conception.mp.	20	
	19	premarital education.mp.	24	
	20	exp genetic counseling/ or exp counseling/ or exp family counseling/ or exp parent counseling/ or exp nutritional counseling/	169087	
	21	9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20	182428	
	22	8 and 21	103853	
	23	exp parental behavior/ or exp behavior modification/ or exp maternal behavior/ or exp behavior change/ or exp health behavior/ or exp paternal behavior/	477116	
	24	exp pregnancy outcome/	58669	
	25	exp low birth weight/ or exp birth weight/ or exp newborn/	691309	
	26	exp healthy lifestyle/ or exp lifestyle modification/	41393	
	27	exp family planning/	39779	
	28	infant health.mp.	3278	
	29	exp child development/	48400	
	30	fatherhood.mp. or exp father/	33431	
	31	22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30	1405613	
	32	22 and 31	103853	
	33	limit 32 to (Ovid full text available and full text and abstracts and human and english language and exclude Medline journals and yr="1990 -Current") (106)	**106**	
3.	APA PsycInfo (1806 to May Week 2 2020)			**20**
	Search	**Search Term**	**Results**	
	1	exp Couples Therapy/ or exp Couples/	17135	
	2	men.mp.	164202	

3	partner*.mp.	107947	
4	exp Spouses/	15728	

	5	father*.mp.	50046	
	6	parent*.mp.	298141	
	7	"groom and bride".mp.	2	
	8	1 or 2 or 3 or 4 or 5 or 6 or 7	564442	
	9	exp Health Promotion/ or exp Risk Factors/ or preconception.mp.	103362	
	10	pre-conception.mp.	95	
	11	prepregnancy.mp.	436	
	12	pre-pregnancy.mp.	481	
	13	exp Offspring/ or exp Folic Acid/ or periconception.mp.	16937	
	14	peri-conception.mp.	5	
	15	interconception.mp.	33	
	16	inter-conception.mp.	10	
	17	exp Marriage Counseling/ or exp Premarital Counseling/ or premarital education.mp. or exp Couples Therapy/	9354	
	18	9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17	129517	
	19	8 and 18	39937	
	20	exp Obesity/ or exp Pregnancy Outcomes/ or exp Mothers/ or exp Body Mass Index/	86339	
	21	exp Birth/ or exp Birth Weight/ or exp Premature Birth/ or exp Mortality Rate/	23090	
	22	exp Behavior Change/ or exp Behavior Modification/ or exp Health Behavior/	86124	
	23	exp Lifestyle Changes/	1288	
	24	exp Family Planning/	13288	
	25	exp Infant Development/	21698	
	26	exp Childhood Development/ or exp Cognitive Development/	155002	
	27	exp Parenting/	109552	
	28	20 or 21 or 22 or 23 or 24 or 25 or 26 or 27	406840	
	29	19 and 28	11802	
	30	limit 29 to (Ovid full text available and human and english language and abstracts and yr="1990 -Current" and open access)	**20**	
4.	**CINAHL CTATION19 May 2020**			**54**
	Search	**Search Term**	**Results**	
	1	TX couple*	37,383	
	2	(MH "Couples Counseling")	2,742	
	3	TX men	248,804	
	4	(MH "Men")	5,810	

	5	TX partner*	124,467	
	6	"partner*"	93,418	
	7	"spouse"	5,271	
	8	"spouse"	5,271	
	9	TX father*	23,144	
	10	(MH "Expectant Fathers") OR (MH "Fathers")	7,271	
	11	TX parent	169,504	
	12	(MH "Expectant Parents")	466	
	13	TX "groom and bride"	0	
	14	""groom and bride""	18	
	15	S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12 OR S13 OR S14	559,251	
	16	TX preconception	2,546	
	17	(MH "Prepregnancy Care")	2,055	
	18	TX pre-conception	298	
	19	(MH "Preexisting Condition Coverage")	102	
	20	TX prepregnan*	3,845	
	21	"prepregnan*"	3,811	
	22	TX pre-pregnan*	1,877	
	23	"pre-pregnan*"	1,856	
	24	TX periconception	93	
	25	(MH "Periconceptual Period")	216	
	26	TX peri-conception	26	
	27	TX interpregnan*	394	
	28	TX interpregnan*	394	
	29	"interpregnan*"	382	
	30	TX inter-pregnan*	77	
	31	"inter-pregnan*"	76	
	32	TX interconception	81	
	33	"interconception"	74	
	34	TX inter-conception	16	
	35	"inter-conception"	16	
	36	TX "premarital education"	22	
	37	""premarital education""	50	
	38	TX counsel?ing	30,560	
	39	(MH "Couples Counseling") OR (MH "Counseling")	34,039	
	40	S16 OR S17 OR S18 OR S19 OR S20 OR S21 OR S22 OR S23 OR S24 OR S25 OR S26 OR S27 OR S28 OR S29 OR S30 OR S31 OR S32 OR S33 OR S34 OR S35 OR S36 OR S37 OR S38 OR S39	63,806	
	41	S15 AND S40	11,072	
	42	TX pregnan* outcome*	33,946	

43	(MH "Pregnancy Outcomes")	24,809	
44	TX birth outcome*	8,367	
45	(MH "Infant, Very Low Birth Weight")	5,192	
46	TX behavio?r	58,703	
47	(MH "Paternal Behavior") OR (MH "Maternal Behavior")	4,029	

	48	TX lifestyle*	53,464	
	49	(MH "Life Style Changes") OR (MH "Life Style")	40,284	
	50	TX diet	163,017	
	51	(MH "Diet")	58,818	
	52	TX "mental health"	241,654	
	53	(MH "Mental Health")	38,281	
	54	TX "family planning"	15,567	
	55	(MH "Family Planning") OR (MH "Family Planning: Infertility (Iowa NIC)") OR (MH "Family Planning: Unplanned Pregnancy (Iowa NIC)")	6,624	
	56	TX "infant health"	2,023	
	57	(MH "Infant, Newborn") OR (MH "Infant, Premature") OR (MH "Infant Mortality")	142,335	
	58	TX "child development"	36,808	
	59	(MH "Child Development")	24,797	
	60	TX fatherhood	1,603	
	61	(MH "Fatherhood") OR (MH "Paternity") OR (MH "Parenthood")	2,773	
	62	S42 OR S43 OR S44 OR S45 OR S46 OR S47 OR S48 OR S49 OR S50 OR S51 OR S52 OR S53 OR S54 OR S55 OR S56 OR S57 OR S58 OR S59 OR S60 OR S61	715,130	
	63	S41 AND S62 (search modes - Boolean/Phrase)	3,163	
	64	S41 AND S62 (Limiters-English Language; Seacrh modes-Boolean/Phrase)	3,120	
	65	S41 AND S62 (Limiters-English Language; Published date 19900101-20201231; Seacrh Boolean/Phrase)	2,752	
	66	S41 AND S62 (Limiters-English Language; Published date 19900101-20201231 References available; Abstract available; Human; search modes -Boolean/Phrase)	**54**	
5.	**Web of Science (1990 to 20 May 2020)**			**51**
	Keywords		**Results**	
	(couple* or men or partner* or spouse or father* or parent or groom and bride) AND TOPIC: (preconception or pre-conception or prepregnan* or pre-pregnan* or periconception or peri-conception or interpregnan* or inter-pregnan* or interconception or inter-conception or premarital education or cpunsel?ing) AND TOPIC: (pregnan* outcome* or birth outcome* or behavio?r or lifestyle* or diet or mental health or family		**51**	

	planning or infant health or child development or fatherhood)		
6.	**Google Scholar (1990-5 May 2020)**		**326**
	Keywords	**Results**	
	couple, preconception, outcome, maternal health, LMICs	**326**	
7.	**Hand-searching**		**2**
	Keywords	**Results**	
	couple, preconception, outcome, maternal health, LMICs	**2**	
8.	**Correspondent**		**1**
	Keywords	**Results**	
	Tittle of article: ''Establishing healthy family and offspring on prospective bridegroom'': A qualitative analysis Corresponding author: E-mail address*:* yatikris@ui.ac.id (Y. Afiyanti).	**1**	
	Total article		**942**

Appendix 2: Charting the Data

No	Author(s) (sort by years)	Aim of Study	Country & Category	Study Design & Data collection methods	Sample & Technique	Setting & Provider	Model Intervention	Findings
1	Jewkes et al. (2008)	To evaluate the impact of Stepping Stones and HIV prevention programs onthe incidence of HIV and herpes simplex type 2 (HSV-2) and sexual behavior.	-South Africa -Upper-middle Income Country	-Cluster randomized controlled trial -Survey using questionnaires	-n=1360 men and 1416 women (Men and women aged 15-26 years) -No information	-In towns and villages -Trained Facilitators	The intervention is Stepping Stones, a 50-hour program run over six to eight weeks, using a participatory learning approach, including critical reflection, and HIV and HSV-2 testing. Material includes sex; conception and contraception; taking sexual risks and problems; unwanted pregnancy; sexually infectious diseases and HIV;	Stepping stones program reduced the incidence of sexually transmitted diseases (HSV-2 infection) and positively affect sexual behaviour and health in men.
2	Danielet al. (2009)	To evaluate the effect ofPCC on Primary awareness about reproductive health and the	-India -Lower-middle Income Country	-A survey studies - Survey using a structure questionnaire	-n=4075 couples (The adolescents and young married couples, and families) -cluster random	-In the villages -Trained Facilitators **-**Duration 3 years	The intervention called PRACHAR. A counselling is delivered through workshop and behavior change communication to	Community-based Reproductive Health communication programs are proven to be effective in increasing knowledge and attitudes and behavior about reproductive health and the

		importance of delaying pregnancy in young married couples.			sample		provide information about Reproductive health, prevention and treatment of STIs, gender inequity, and access to health facility.	use of contraceptive methods among young women married.
3	Wall et al. (2013)	To assess the impact of family planning promotion on the incidence of pregnancy to prevent mother-to-child transmission of HIV.	-Zambia -Lower-middle Income Country	-A factorial randomized controlled trial of two video-based interventions - A questionnaire	-n=1060 couples (Cohabiting couples who are serodiscordant or HIV positive > 12 months who do not have indications of infertility or contraindications to contraception are not pregnant at the time of registration) -a consecutive sampling	-HIV counselling and testing (VCT) service clinic. -Trained counsellor	The intervention consisted of two video exposures. First, the couple sees a simulation video followed by a discussion with the counsellor. Second, the "Motivational" video models the behaviour of future planning; the impact of this intervention on will writing, financial planning.	Family planning interventions integrated into the CVCT context can strengthen HIV prevention and help avoid unplanned pregnancy. .
4	Li et al. (2014)	To measure and Summarise the outcomes of PCC on	-China -Upper-middle Income	- A survey Study - A questionnaire	-n=256274 couples (Couples, who comply with	- The county-level family planning	The interventions called “The free preconceptual screening	Preconception care can potentially overcome health risks of couples that can improve pregnancy outcomes

		pregnancy outcome to reduce birth defect.	Country		family planning policies and live in local rural areas for more than six months) -purposive sampling	institutions -A trained health professional: general practitioners and specialists.	examination project" provided were 19: health assessments, laboratory tests (urinalysis, blood type (ABO type and Rh type), glutamin-pyruvic transaminase (ALT), hepatitis B serologic markers, creatinine, and syphilis screening), counselling, and treatment for diseases.	and child outcomes.
5	Schwartz et al. (2014)	To illustrate the implementation of PCC to promote a safer conception for HIV- affected couples in resource-limited settings.	-South Africa -Upper-middle Income Country	-A Cohort study with qualitative method -Focus Group Discussion (FGD) & In-depth interview	-n=51 couples (Couples affected by HIV plan conception within six months) & 128 clinical cohort participants (82 women and 46 men, representing 82 partnerships) -Purposive sampling	-Clinic -No information	The interventions are safer conception services, educational programs about timed condomless sex and self-insemination at home, early initiation of combination antiretroviral therapy (cART) for HIV-infected people, PrEP (PrEP) for HIV-uninfected partners. HIV and male circumcision	A safer conception services in a resource- limited setting increased the use of safer conception method however reaching discordant couples, cART-naïve infected partners, and men remain challenges

6	Ding et al. (2015)	To evaluate the implementation of PCC to reduce birth defect incidence.	-China -Upper-middle Income Country	-A retrospective questionnaire surveys -questionnaire	-n=12309 pregnant women and 8997of their partners (All primiparous couples) -convenience sampling	-Hospital -A trained Doctors in PCC.	The intervention is the 'Free Pre-pregnancy Health Evaluation Service'. Intervention services include medical/social history collection, risk assessment and health promotion; then, screening tests and counseling, related recommendations and treatment of health problems before pregnancy.	PCC can be used to reduce the number of unwanted pregnancies, reduce the risk of couple health problems, and improve the couple lifestyle and behaviour that potentially improve pregnancy outcomes through healthier lifestyle changes that potentially improves of offspring.
7	Nugraheni et al. (2018)	To evaluate the knowledge and attitudes of the bride and groom couples afterbeing given PCC.	-Indonesia -Lower-middle Income Country	-A quasi experiment, pre and postdesign - A self-administered questionnaire	-n=54 couples: 31 females and 23 males (Couples aged 15 to 45 years, have never received reproductive health services or premarital education before marriage, and are not health workers).	-Primary HealthCentre -A trained health professional: Midwives	An intervention called premarital care (PMC) is brief counselling of (maximum 20 minutes), intervention includes general health checks, TT vaccination, health counselling and intervention	Premarital care for the bride and groom couplesincreases the couple's knowledge and attitudes about reproductive health and pregnancy preparedness. .

					-a purposive sampling			
8	Samanta et al. (2018)	To provide baseline for evidence-based action of the implementation of a Family-centricsafe motherhood approach for families among young	-India -Lower-middle Income Country	-The cross-sectional quantitative studies -A questionnaire	-n=1347 couples (A group of young married couples (15–24 years) who had children in the last 1 year and newly married couples who did not have children yet) -Simple random example	-In the villages -A trained facilitators -Duration one year	The intervention is "Family-centric safe motherhood", the activities include education and counselling about pregnancy health services, childbirth, pregnancy complications, family planning, and is supported by a supportive family group. The intervention is carried out through group counseling, positive modeling, supportive family groups, and using other media such as visual and electronic.	Findings Family-centric safe motherhood intervention as a health service for couples before conception improves health behavior in pregnancy, the scope of postnatal care, and the use of contraceptive methods
9	Hong et al (2019)	To investigate the relationship between abnormal preconception blood pressure levels and time to exercise pregnancy	-China -Upper-middle Income Country	- Population-based survey, cohort study - Questionnaires, interviews and health checks	-n=2,234,350 couples (Couples who trying for their first pregnancy) -Purposive sampling	-The National Free Preconception Check-up Projects -Local health professionals	Free pre-pregnancy medical examinations	Findings: Abnormal preconception blood pressure levels were associated with prolonged time to pregnancy among couples who were attempting to conceive their first pregnancy

10	Kurniawati and Afiyanti (2019)	To assess the readiness of the couples in realizing a healthy and happy family after receiving PCC.	-Indonesia -Lower-middle Income Country	-A qualitativestudy - Focus Group Discussion, audio & video recorder, participative observation	-n=10 couples (Couples who plan to have their first child) -a Purposive sampling	-Primary HealthCentre -Health professional: Midwives	The intervention includes general health checks, TT vaccination, health Counselling and intervention.	Preconception care services for the bride and groom couples help increase physical, psychological, economic, and social and health service readiness in order to create healthy families and offspring.
11	Gitahi, etal (2020)	To identify fertility desireand PCC uptake, and immediate conception outcome among HIV discordant couples.	-Kenya -Lower-middle Income Country	- Cohort study - electronic medicalrecords	-n=219 couples (An HIV positive couple who is ready to conceive within the next six Months. -Purposive sampling	-Hospital teaching clinic. -A general practitioner medical doctor, a nurse trained	The intervention is called "Special Preconception Services", namely health services that provide screening and testing (HIV and STIs), treatment, and education/counselling.	"Preconception-specific services" have demonstrated its potential to increase prevention measures in couples with positive HIV. .
12	Xie et al (2020)	To identify the prevalence of chronic disease and behavior risk factors of adverse pregnancy outcome	-China -Upper-middle Income Country	- A retrospective study, Cross-sectional study based on population - Questionnaires, interviews and health checks	-n=419,971 couples (All couples planning to become pregnant and undergoing FPHC in Hunan province in 2019) -Total sampling	-The Free Pre-pregnancy Health Check -Health professionals	The Free Pre-pregnancy Health Check. This program of FPHC included collecting basic information, disease history, and socio-psychological factors, health education, physical examinations, laboratory examinations, ultrasound at the	Findings: History of adverse pregnancy outcomes and age older than 35 years were important risk factors for pre-pregnancy.

							department of gynecology, risk assessment and advisory guidance	
13	Zhou et al. (2021)	To investigate syphilis seropositivity and intra-couple discordance among married couples planning a pregnancy	-China -Upper-middle Income Country	-Population-based survey, cohort study - Laboratory check (syphilis screening) (Couples who are planning to have their first child and couples who already has children)	-n=31955041 couples (90.4% wives; 81.1% husband) (Married couples who intend to get pregnant within the next 6 months) -Total sampling	-Local family planning service agencies or maternal and children's care service centres -Specialised community healthcare-	Preconception education and reproductive advocacy programs." The intervention carried out was a package, but in this study, it only focused on syphilis serology examination.	Findings: Integrated preconception screening in both spouses may further reduce the risk of transplacental syphilis infection
14	Diamond-Smith et al. (2022)	To describe the design process of a group intervention addresses nutrition, household relationships and gender norms	-India -Lower-middle Income Country	-mixed methods formative research -In-depth interviews & survey	-n=31 households participated (couples & mothers-in-law), however, only 28 husbands answered the surveys -Purposive sampling & no information	-A community-based participatory design -Trained facilitators -Duration 4 months	-The Sumadhur (meaning "Best Relationship"). Group-based intervention models, it's an interactive, informational content about nutrition and women's health, address inequitable gender norms and practices, strengthen household relationships and communication, and improve the status of	Findings a designing an intervention in close partnership with the target recipients and local stakeholders can lead to an intervention that is able to target complicated and culturally held practices and beliefs, positively benefit health and wellbeing

							newly married women.	

Appendix 3: Summary of Critical Appraisal of Included Studies

The included studies were rated based on the criteria shown in the Table 3.1 Quality Rating Criteria

Table 3.1 Quality Rating Criteria

Summary Quality Rating	Answers for Appraisal Questions
High	All “Yes” or 1” Cannot tell” or 1 “No” + the rest are “Yes”
Moderate	1 “No” + 1 “Cannot tell” +the rest are “Yes”; 2 “Cannot tell” + the rest are “Yes”
Low	3 or more “No” + the rest are “Yes”; more than 2 “No” or “Cannot tell” or combination both the rest are “Yes”

Table 3.2 Summary of Critical Appraisal for Survey studies

Author, year	Appraisal questions												Overall Rating (high, moderate, low)
	1	2	3	4	5	6	7	8	9	10	11	12	
Dhaniel et al. (2008)	Y	Y	Y	Y	Y	Y	CT	Y	Y	Y	CT	Y	Moderate
Li, et al (2012)	Y	Y	Y	Y	Y	Y	CT	Y	Y	Y	N	Y	Moderate
Ding, et al (2016)	Y	Y	Y	Y	Y	Y	CT	Y	Y	Y	N	Y	Moderate
Samantha et al. (2018)	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	CT	Y	Moderate
Nugraheni, et al. (2018)	Y	Y	Y	Y	Y	N	N	Y	Y	Y	N	Y	Low
Xie et al. (2020)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	High

List of questions:

1. Did the study address a clearly focused question / issue?
2. Is the research method (study design) appropriate for answering the research question?
3. Is the method of selection of the subjects (employees, teams, divisions, organizations) clearly described?

4. Could the way the sample was obtained introduce (selection)bias?
5. Was the sample of subject's representative with regard to the population to which the findings will be referred?
6. Was the sample size based on pre-study considerations of statistical power?
7. Was a satisfactory response rate achieved?
8. Are the measurements (questionnaires) likely to be valid and reliable?
9. Was the statistical significance assessed?
10. Are confidence intervals given for the main results?
11. Could there be confounding factors that haven't been accounted for?
12. Can the results be applied to your organization?

Table 3.3 CASP Cohort Study

Author, year		**Appraisal questions**												**Overall Rating (high, moderate, low)**
	1	2	3	4	5a	5b	6a	6b	7	8	9	10	11	12	
Hong et al. (2019)	Y	Y	Y	Y	Y	Y	Y	Y	Abnormal preconception blood pressure levels were associated with prolonged time to pregnancy among couples who were attempting to conceive their first pregnancy	The results are high	Y	Y	Y	The finding has Primary health significance and practical value.	High
Gitahi, et al. (2020)	Y	Y	Y	Y	Y	Y	Y	Y	The study demonstrates the feasibility of	The results are	Y	Y	Y	The introduction of conception care within	High

									implementing safe and effective preconception services as part of routine HIV care for discordant couples living in low-resource settings	high				discordant couple's routine care is essential and in future, will play a significant role in the aversion of horizontal and vertical HIV transmission	
Zhou et al. (2021)	Y	Y	Y	Y	Y	Y	Y	Y	Intra-couple disparities in seropositivity for syphilis important among couples, with a degree of pre-existing disease syphilis before pregnancy	The results are high	Y	Y	Y	The screening both spouses during integrated preconception health care is recommended for further eliminating maternal-fetal transmission	High

List of questions:

1. Did the study address a clearly focused issue?
2. Was the cohort recruited in an acceptable way?
3. Was the exposure accurately measured to minimize bias?
4. Was the outcome accurately measured to minimize bias?
5. a. Have the authors identified all important confounding factors?
   b. Have they take account of the confounding factors in the design and/or analysis
6. a. Was the follow up of subjects complete enough?
   b. Was the follow up of subjects long enough?

7. What are the results of this study?
8. How precise are the results?
9. Do you believe the results?
10. Can the results be applied to the local population?
11. Do the results of this study fit with other available evidence?
12. What are the implications of this study for practice?

Table 3.4 CASP Randomized Control Trial Study

Author, year	Appraisal questions											Overall Rating (high, moderate, low)
	1	2	3	4	5	6	7	8	9	10	11	
Jewkes et al. (2008)	Y	Y	Y	Y	Y	N	Some would argue that Stepping Stones did not work because it failed to affect the incidence of HIV	The treatment effects were moderate precise	Y	Y	Y	High
Wall et al.(2013)	Y	Y	Y	CT	Y	N	This study evaluated how a family planning intervention offered within the context of CVCT may reinforce HIV and unplanned pregnancy prevention and address client and provider-level obstacles	The treatment effects were moderate precise	Y	Y	Y	Moderate

List of questions:

1. Did the trial address a clearly focused issue?
2. Was the assignment of patients to treatments randomized?

3. Were all of the patients who entered the trial properly accounted for at its conclusion
4. Were patients, health workers and study personnel 'blind' to treatment?
5. Were the groups similar at the start of the trial
6. Aside from the experimental intervention, were the groups treated equally?
7. How large was the treatment effect?
8. How precise was the estimate of the treatment effect?
9. Can the results be applied to the local population, or in your context?
10. Were all clinically important outcomes considered?
11. Are the benefits worth the harms and costs?

Table 3.5 CASP Qualitative Appraisal

Author, year	**Appraisal questions**										**Overall Rating (high, moderate, low)**
	1	2	3	4	5	6	7	8	9	10	
Schwartz et al. (2014)	Y	Y	Y	Y	Y	CT	Y	Y	Y	Highly valuable	High
Kurniawati and Afiyanti (2019)	Y	Y	Y	Y	N	CT	Y	Y	Y	Highly valuable	Moderate

List of questions:

1. Was there a clear statement of the aims of the research?
2. Is a qualitative methodology appropriate?
3. Was the research design appropriate to address the aims of the research?
4. Was the recruitment strategy appropriate to the aims of the research?
5. Was the data collected in a way that addressed the research issue?
6. Has the relationship between researcher and participants been adequately considered?

7. Have ethical issues been taken into consideration?
8. Was the data analysis sufficiently rigorous?
9. Is there a clear statement of findings?
10. How valuable is the research?

Table 3.6 Mixed-Method Appraisal Tool (MMAT) 2018

Author, year	Appraisal Questions					Overall Rating (high, moderate, low)
	1	2	3	4	5	
Diamond-Smith et al. (2022)	Y	Y	Y	Y	Y	High

List of questions:

1. Is there an adequate rationale for using a mixed methods design to address the research question?
2. Are the different components of the study effective integrated to answer the research question?
3. Are the outputs of integration of qualitative and quantitative results adequately addressed?
4. Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?
5. Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?

Appendix 4: Research Permission from Local Government

PEMERINTAH KABUPATEN SUKOHARJO
DINAS KESEHATAN
Jl. Dr. Muwardi No. 66 Sukoharjo, Kode Pos 57514
Telp.(0271) 593015 Fax 593561

Sukoharjo, 25 Januari 2021

Nomor : 070/ 1522 /I/2021
Lampiran :
Hal : PERMOHONANA IJIN PENELITIAN

Kepada :
Yth. Ka. Puskesmas [redacted]
dan [redacted]
Di -
SUKOHARJO

Meneruskanjuti surat dari Dekan Fakultas Ilmu Kesehatan Universitas Muhammadiyah Surakarta, tanggal 20 Januari 2021, Nomor : 153/C.5-II/FIK/I/2021 Tentang Permohonan ijin penelitian, dengan ini disampaikan bahwa pada prinsipnya kami tidak keberatan dan agar saudara dapat menerima dan memberikan ijin penelitian di wilayah saudara kepada Dosen/mahasiswa :

Nama	:	WINARSIH NUR AMBARWATI, S.Kep, Ns, M.Kep
NIK / NIDN	:	1012 / 0605087502
Fakultas/jurusan	:	ILMU KESEHATAN MASYARAKAT / KEPERAWATAN.
Judul Penelitian	:	" EKSPLORASI KONSEP DAN PRAKTIK PERAWATAN KESEHATAN SEBELUM HAMIL PADA PASANGAN SEBELUM MENIKAH UNTUK KESEHATAN IBU DAN KELUARGA DI INDONESIA : DESIGN STUDI KASUS KUALITATIVE "

Demikian untuk untuk menjadikan perhatian dan dapat dipergunakan sebagaimana perlunya.

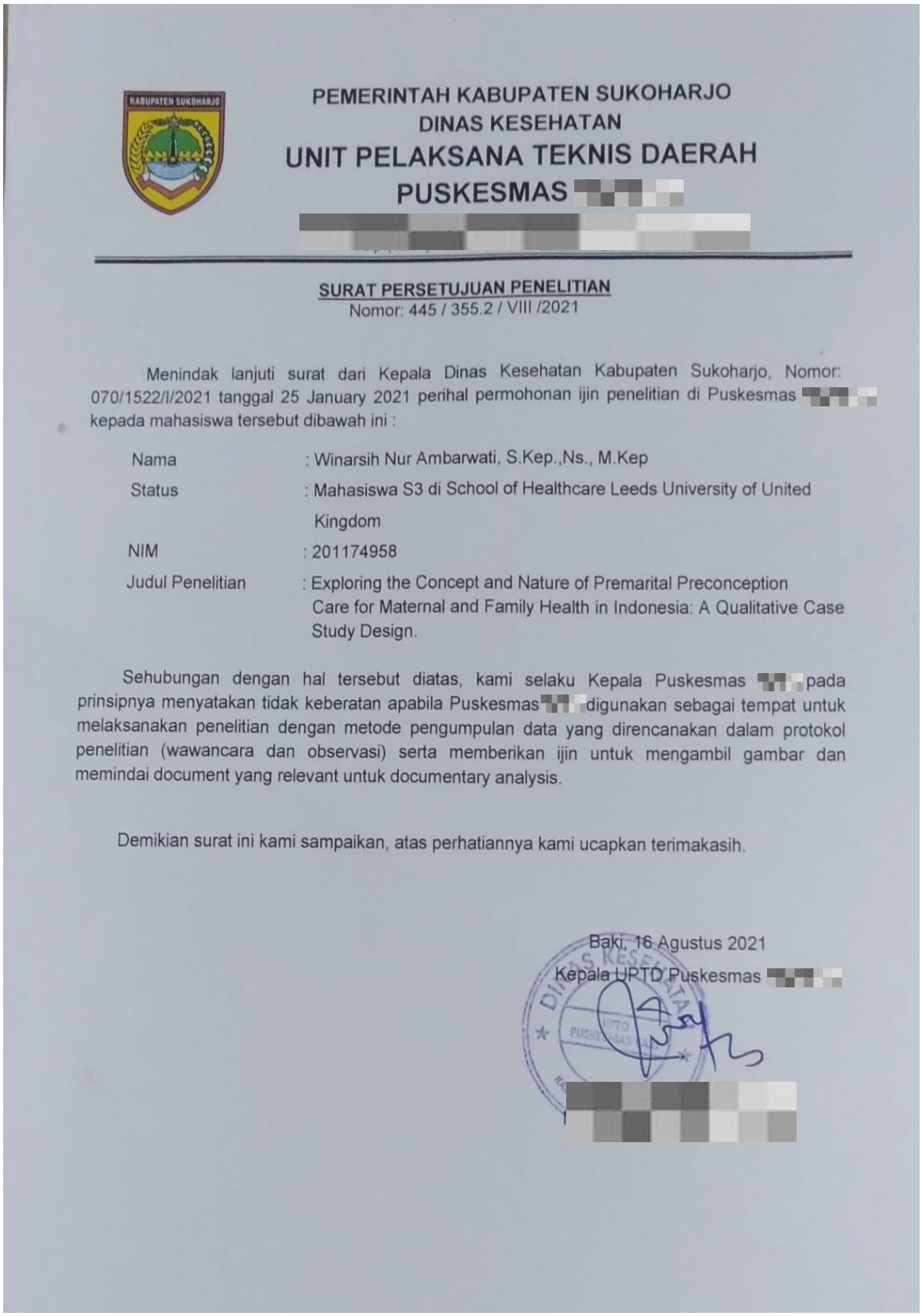
An. KEPALA DINAS KESEHATAN
KABUPATEN SUKOHARJO
Kabid Sumber Daya Kesehatan

SUTARMI, SKM, M.S
Pembina
NIP. 19660610 198903 2 013

TEMBUSAN : dikirim kepada Yth :
1. Mahasiswa yang bersangkutan
2. Arsip

Appendix 5: Research Permit Statement Melati and Kenanga Puskesmas

A. Research Permit Statement Melati



PEMERINTAH KABUPATEN SUKOHARJO
DINAS KESEHATAN
UNIT PELAKSANA TEKNIS DAERAH
PUSKESMAS [redacted]

SURAT PERSETUJUAN PENELITIAN
Nomor: 445 / 355.2 / VIII /2021

Menindak lanjuti surat dari Kepala Dinas Kesehatan Kabupaten Sukoharjo, Nomor: 070/1522/I/2021 tanggal 25 January 2021 perihal permohonan ijin penelitian di Puskesmas [redacted] kepada mahasiswa tersebut dibawah ini :

Nama	: Winarsih Nur Ambarwati, S.Kep.,Ns., M.Kep
Status	: Mahasiswa S3 di School of Healthcare Leeds University of United Kingdom
NIM	: 201174958
Judul Penelitian	: Exploring the Concept and Nature of Premarital Preconception Care for Maternal and Family Health in Indonesia: A Qualitative Case Study Design.

Sehubungan dengan hal tersebut diatas, kami selaku Kepala Puskesmas [redacted] pada prinsipnya menyatakan tidak keberatan apabila Puskesmas [redacted] digunakan sebagai tempat untuk melaksanakan penelitian dengan metode pengumpulan data yang direncanakan dalam protokol penelitian (wawancara dan observasi) serta memberikan ijin untuk mengambil gambar dan memindai document yang relevant untuk documentary analysis.

Demikian surat ini kami sampaikan, atas perhatiannya kami ucapkan terimakasih.

Baki, 16 Agustus 2021
Kepala UPTD Puskesmas [redacted]

[redacted]

B. Research Permit Statement Kenanga

PEMERINTAH KABUPATEN SUKOHARJO
DINAS KESEHATAN
UNIT PELAKSANA TEKNIS DAERAH
PUSKESMAS [redacted]L
[redacted]

SURAT PERSETUJUAN PENELITIAN
Nomor: 445/ 3419 / XI / 2021

Menindak lanjuti surat dari Kepala Dinas Kesehatan Kabupaten Sukoharjo, Nomor: 070/1522/I/2021 tanggal 25 January 2021 perihal permohonan ijin penelitian di Puskesmas [redacted], kepada mahasiswa tersebut dibawah ini:

Nama	: Winarsih Nur Ambarwati, S Kep., Ns., M Kep.
Status	: Mahasiswa S3 di School of Healthcare Faculty of Medicine and Healthcare, Leeds University of United Kingdom.
No Mahasiswa	: 201174958
Judul Penelitian	: Exploring the Concept and Nature of Premarital Preconception Care for Maternal and Family Health in Indonesia: A Qualitative Case Study Design.

Sehubungan dengan hal tersebut diatas, kami selaku Kepala Puskesmas [redacted] pada prinsipnya menyatakan tidak keberatan apabila Puskesmas [redacted] digunakan sebagai tempat untuk melaksanakan penelitian dengan metode pengumpulan data yang direncanakan dalam protokol penelitian (wawancara dan observasi) serta memberikan ijin untuk mengambil gambar dan memindai document yang relevant untuk documentary analysis.

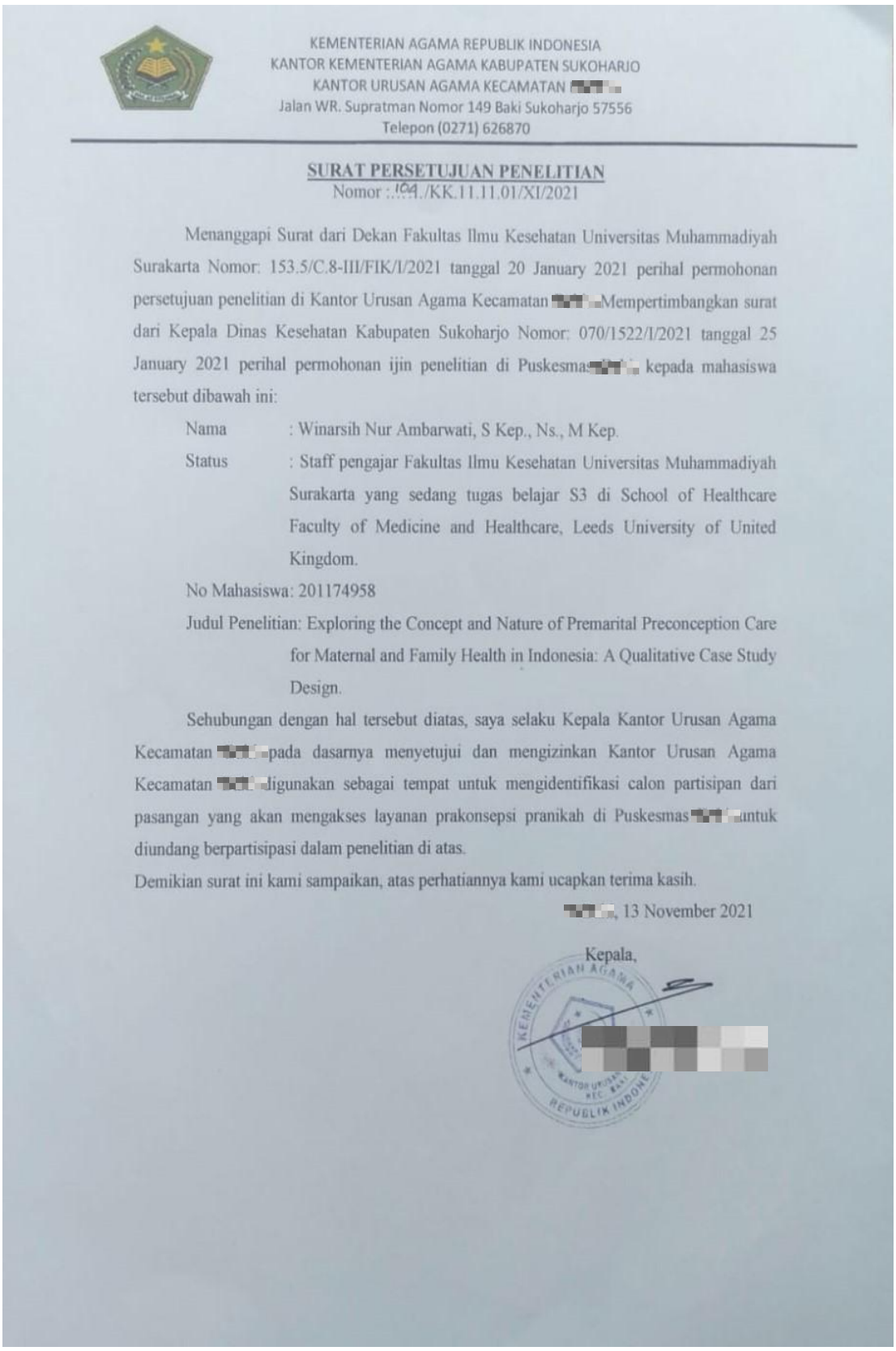
Demikian surat ini kami sampaikan, atas perhatiannya kami ucapkan terima kasih.

Sukoharjo, 13 November 2021
KEPALA [redacted]
KABUPATEN SUKOHARJO

[redacted]

Appendix 6: Research Permit Statement of the Two Islamic Religious Affair Offices

A. Research Permit Statement of the Islamic Religious Affair Office in Melati



KEMENTERIAN AGAMA REPUBLIK INDONESIA
KANTOR KEMENTERIAN AGAMA KABUPATEN SUKOHARJO
KANTOR URUSAN AGAMA KECAMATAN [redacted]
Jalan WR. Supratman Nomor 149 Baki Sukoharjo 57556
Telepon (0271) 626870

SURAT PERSETUJUAN PENELITIAN
Nomor : 104./KK.11.11.01/XI/2021

Menanggapi Surat dari Dekan Fakultas Ilmu Kesehatan Universitas Muhammadiyah Surakarta Nomor: 153.5/C.8-III/FIK/I/2021 tanggal 20 January 2021 perihal permohonan persetujuan penelitian di Kantor Urusan Agama Kecamatan [redacted] Mempertimbangkan surat dari Kepala Dinas Kesehatan Kabupaten Sukoharjo Nomor: 070/1522/I/2021 tanggal 25 January 2021 perihal permohonan ijin penelitian di Puskesmas [redacted] kepada mahasiswa tersebut dibawah ini:

Nama : Winarsih Nur Ambarwati, S Kep., Ns., M Kep.
Status : Staff pengajar Fakultas Ilmu Kesehatan Universitas Muhammadiyah Surakarta yang sedang tugas belajar S3 di School of Healthcare Faculty of Medicine and Healthcare, Leeds University of United Kingdom.
No Mahasiswa: 201174958
Judul Penelitian: Exploring the Concept and Nature of Premarital Preconception Care for Maternal and Family Health in Indonesia: A Qualitative Case Study Design.

Sehubungan dengan hal tersebut diatas, saya selaku Kepala Kantor Urusan Agama Kecamatan [redacted] pada dasarnya menyetujui dan mengizinkan Kantor Urusan Agama Kecamatan [redacted] digunakan sebagai tempat untuk mengidentifikasi calon partisipan dari pasangan yang akan mengakses layanan prakonsepsi pranikah di Puskesmas [redacted] untuk diundang berpartisipasi dalam penelitian di atas.

Demikian surat ini kami sampaikan, atas perhatiannya kami ucapkan terima kasih.

[redacted], 13 November 2021

Kepala,

[redacted]

B. Research Permit Statement of the Islamic Religious Affair Office in Kenanga

KEMENTERIAN AGAMA REPUBLIK INDONESIA
KANTOR KEMENTERIAN AGAMA KABUPATEN SUKOHARJO
KANTOR URUSAN AGAMA KECAMATAN [redacted]
Jalan Anggrek I No. 35 Grogol-Sukoharjo 57552 Telp. (0271) 622362

SURAT PERSETUJUAN PENELITIAN

Nomor : 154 /Kua.11.11.05/11/2021

Menanggapi Surat dari Dekan Fakultas Ilmu Kesehatan Universitas Muhammadiyah Surakarta Nomor: 153.6/C.8-III/FIK/I/2021 tanggal 20 January 2021 perihal permohonan persetujuan penelitian di Kantor Urusan Agama Kecamatan [redacted]. Mempertimbangkan surat dari Kepala Dinas Kesehatan Kabupaten Sukoharjo Nomor: 070/1522/I/2021 tanggal 25 January 2021 perihal permohonan ijin penelitian di Puskesmas [redacted], kepada mahasiswa tersebut dibawah ini:

Nama : Winarsih Nur Ambarwati, S Kep., Ns., M Kep.

Status : Staff pengajar Fakultas Ilmu Kesehatan Universitas Muhammadiyah Surakarta yang sedang tugas belajar S3 di School of Healthcare Faculty of Medicine and Healthcare, Leeds University of United Kingdom.

No Mahasiswa: 201174958

Judul Penelitian: Exsplorasi Konsep dan Praktik Perawatan Kesehatan Sebelum Hamil Pada Pasangan Sebelum Menikah Untuk Kesehatan Ibu dan Keluarga Di Indonesia : Design Studi Kasus Kualitative

Sehubungan dengan hal tersebut diatas, saya selaku Kepala Kantor Urusan Agama Kecamatan [redacted] pada dasarnya menyetujui dan mengizinkan Kantor Urusan Agama Kecamatan [redacted] digunakan sebagai tempat untuk mengidentifikasi calon partisipan dari pasangan yang akan mengakses layanan prakonsepsi pranikah di Puskesmas [redacted] untuk diundang berpartisipasi dalam penelitian di atas.

Demikian surat ini kami sampaikan, atas perhatiannya kami ucapkan terima kasih.

[redacted], 15 November 2021

Kepala,

[redacted]

Appendix 7: Ethical Research Approval from the School of Healthcare Research Ethics Committee (SHREC) the University of Leeds

Conditional Study Approval Confirmation

HREC 20-022 - Conditional Study Approval Confirmation

M Medicine and Health Univ Ethics Review

To: Winarsih Ambarwati

Cc: Linda McGowan

Fri 11/12/2021 10:54 AM

You forwarded this message on Mon 7/22/2024 4:38 PM

Dear Winarsih

HREC 20-022 - Exploring the Concept and Nature of Premarital Preconception Care for Maternal and Family Health in Indonesia: a Qualitative Case Study Design

The above research ethics application has been reviewed by the School of Healthcare Research Ethics Committee (SHREC) and I can confirm a conditional favourable ethical opinion based on the documentation received at date of this letter and *subject to the following condition/s which must be fulfilled prior to the amendment being implemented:*

1. ***Section C13*** *- One month is quite a considerable amount of time and could delay study progress – you may want to consider giving one week.*
2. ***Section C17*** *- Please ensure that the participant receives a copy of their informed consent form, once completed with yourself, either in-person (at the start of the interview) or via Zoom. We would recommend that consent could be received before starting the interview (thus starting recording). We suggest completing a written informed consent form with them over Zoom but making a note on the form that you are completing it on their behalf.*
3. *Please ensure you download the data from Zoom, straight onto M-Drive. At no point should the data be stored on your personal laptop. We would suggest using Desktop Anywhere.*
4. ***Standing banner*** *- Please insert the version number, date of version and your ethics number needs to be on the banner itself.*
5. ***Standing banner*** *- Please also advise participants that the interviews may be performed over Zoom if COVID restrictions apply.*
6. ***Recruitment Leaflet*** *- Please insert the version number, date of version and your ethics number needs to be on the banner itself.*
7. ***Recruitment Leaflet*** *- Please advise participants that the interviews may be performed over Zoom if COVID restrictions apply.*
8. ***Letter to health professionals and couples*** *- It would be useful to provide an example of what is meant by 'health and pregnancy outcomes' to aid people's understanding.*
9. ***Information sheet*** *- Health professionals and couples - Please advise participants that the interviews may be performed over Zoom if COVID restrictions apply.*
10. ***Consent Forms*** *– Couples - As advised in our last set of comments, please ensure the consent forms are adapted for two people to sign.*
11. ***Risk Assessment(s)*** *- Please amend dates – fieldwork cannot commence until ethical approval has been received.*
12. ***Risk Assessment(s)*** *- If you are carrying out the fieldwork, please sign the relevant section at the end of the form too.*
13. ***Data Management Plan*** *- For completeness, please acknowledge the use of images in your data management plan. Including who will have access to the images? Where will they be stored and for how long? If the images are taken with your phone outline how you will transfer them from your phone and onto a secure storage system.*
14. ***Any other supporting documents*** *- For completeness, please submit the text that you will send to potential participants if you have not heard from them within 24 hours of contacting them as an actual document, rather than free text in the adjacent comments section.*
15. *Please provide the following permissions/approvals:* a) *Head of PHCs (to perform research at their site, documentary analysis)*

    b. *Head of Religious Affairs (recruitment).*

We note you have previously submitted a research permission from the 'Head of Health Department' however we still need to see evidence that the individuals in the roles listed above are happy to be involved in your study in the ways that you wish them to.

The study documentation must be amended where required to meet the above conditions and submitted for file and possible future audit. *Once you have addressed the conditions and submitted for file/future audit, you may implement the study amendment and further confirmation of approval is not provided. Please note,* failure to comply with the above conditions will be considered a breach of ethics approval and may result in disciplinary action.

Please retain this email as evidence of conditional approval. Once you have met the conditions and submitted for file/audit, the amendment may be implemented with immediate effect.

Please notify the committee if you intend to make any amendments to the original research as submitted and approved to date. This includes recruitment methodology; all changes must receive ethical approval prior to implementation. Please contact the Research Ethics & Governance Administrator for further information (FMHUniEthics@leeds.ac.uk)

Ethics approval does not infer you have the right of access to any member of staff or student or documents and the premises of the University of Leeds. Nor does it imply any right of access to the premises of any other organisation, including clinical areas. The committee takes no responsibility for you gaining access to staff, students and/or premises prior to, during or following your research activities.

Please note: You are expected to keep a record of all your approved documentation, as well as documents such as sample consent forms, risk assessments and other documents relating to the study. This should be kept in your study file, which should be readily available for audit purposes. You will be given a two week notice period if your project is to be audited.

It is our policy to remind everyone that it is your responsibility to comply with Health and Safety, Data Protection and any other legal and/or professional guidelines there may be.

I hope the study continues to go well.

Best wishes
Sou

Ethical Approval (after all required documents were supplied)

JB John Baker

Reply Reply all Forward

To: Winarsih Ambarwati

Tue 11/23/2021 10:42 AM

Cc: Linda McGowan; Yu Fu <Yu.Fu@newcastle.ac.uk>; Medicine and Health Univ Ethics Review

Dear Winarsih,

You have submitted all the relevant documents, and under the favourable opinion issued by chairs action you can commence data collection.

John

M Medicine and Health Univ Ethics Review

To: Winarsih Ambarwati

Tue 11/23/2021 10:51 AM

Cc: Linda McGowan; Yu Fu <Yu.Fu@newcastle.ac.uk>

You forwarded this message on Mon 7/22/2024 4:39 PM

Dear Winarsih

I understand Professor John Baker has already confirmed this study can go ahead.

Kind regards.

Sou

~~~
~~~

Appendix 8: Ethical Research Approval Ethics Committee of the Faculty of Medicine Universitas Muhammadiyah of Surakarta (UMS) Indonesia

KOMISI ETIK PENELITIAN KESEHATAN (KEPK)
Health Research Ethics Committee
FAKULTAS KEDOKTERAN
Universitas Muhammadiyah Surakarta
Faculty of Medicine Universitas Muhammadiyah Surakarta
Komplek kampus 4 UMS Gonilan Kartasura, Telp.(0271)716844, Fax.(0271)724883 Surakarta 57102, email:kepk@ums.ac.id

ETHICAL CLEARANCE LETTER
Surat Kelaikan Etik
No. 3772/B.1/KEPK-FKUMS/X/2021

Komisi Etik Penelitian Kesehatan (KEPK) FK UMS, setelah menelaah rancangan penelitian yang diusulkan menyatakan bahwa:
Health Research Ethics Committee Faculty of medicine of Universitas Muhammadiyah Surakarta, after reviewing the research design, state that:

Penelitian dengan judul:
The research proposal with topic:

Exploring the Concept and Nature of Premarital Preconception Care for Maternal and Family Health in Indonesia: a Qualitative Case Study Design

Peneliti:
The researcher:

Nama/ *Name* : **Winarsih Nur Ambarwati**

Alamat/ *Address* : Keputren RT 03/RW VIII, Kartasura, Sukoharjo, Jawa tengah.

Institusi/ *Institution* : Faculty of Medicine and Healthcare, University of Leeds United Kingdom

Telah memenuhi deklarasi Helsinki 1975, Council for International Organizations of Medical Sciences (CIOMS) dan World Health Organization (WHO) 2016
Has met the declaration of Helsinki 1975, Council for International Organizations of Medical Sciences (CIOMS) and World Health Organization (WHO) 2016

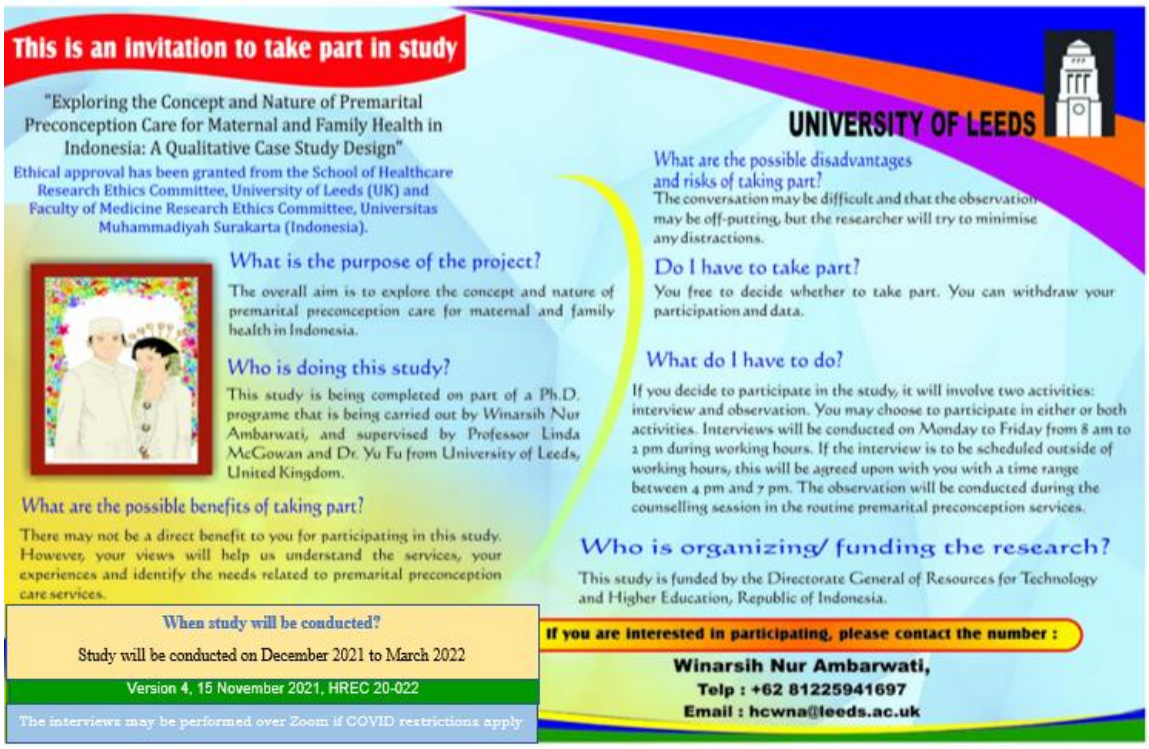
dan dinyatakan lolos etik
and ethically approved

Surakarta, 20 Oktober 2021
Ketua/*Chairman*,

Prof. Dr. dr. EM. Sutrisna, M,Kes.

Appendix 9: Example of Banner for Research Dissemination

Appendix 10. Example of Leaflets for Research Dissemination



Appendix 11: Statement Agreement to be Contacted Form

UNIVERSITY OF LEEDS

Dear the Participants,

My name is Winarsih Nur Ambarwati, I am a PhD student at the University of Leeds, United Kingdom. Currently, I am doing a study titled “Exploring the Concept and Nature of Premarital Preconception Care for Maternal and Family Health in Indonesia: A Qualitative Case Study Design”. I am recruiting the couples who accessing premarital preconception care (PPCC) and the health professionals who are involved in PPCC as both manager/staff member.

If you agree to be contacted by the researcher, please fill in the contact person form below:

Contact Permission

Name : ……

Address : ……

Phone Number : ……

Email : ……

□ **I agree to be contacted by the researcher in order to get more information about the study.**

The couple		**The Health Professional**
……	……	……
Name	**Name**	**Name**
Date:		**Date:**

Appendix 12: Invitation Letter for Service Users

UNIVERSITY OF LEEDS

Date: ……..

Dear … (participant's name)

My name is Winarsih Nur Ambarwati, and I am a Ph.D. student at the School of Healthcare, University of Leeds, United Kingdom. I would like to invite you to take part in the research study titled **"Exploring the Concept and Nature of Premarital Preconception Care in Indonesia: A Qualitative Comparative Case Study Design".**

The background of this is that the health of a couple before pregnancy has a profound impact on the health outcomes of both mother and child. Preconception care (PCC) aims to improve couples' health and baby and reduce complication during pregnancy such us abortion, anaemia and premature birth. In Indonesia, PCC is known as premarital preconception care (PPCC); it is one of the PCC approaches involving both men and women. Given the lack of evidence relating to but its results PPCC, it is essential to understand the thinking behind the nature, the concept of PPCC and how inclusive it is for the men in the PPCC process. The overall aim of this study is to explore the concept and nature of PPCC for maternal and family health in Indonesia.

The Head of Religious Affairs has sent this letter on behalf of the University of Leeds. You are invited to participate in this study as you are accessed to PPCC within Kenanga/Melati Public Health Centre (PHC). I would like to hear your views and experiences in receiving PPCC services. You will be given up to a week after the date in the letter of invitation to express your interest. If you are interested in participating in this study or would like to find out more information, do not hesitate to contact the researcher. I will be in the Kenanga/Melati PHC from Monday to Friday during the working hours (08.00 am to 02:00 pm) if you want to talk to the researcher in person.
Thank you for the time to read this invitation letter.

Yours faithfully,

Winarsih Nur Ambarwati
Ph.D. Student,
School of Healthcare, Faculty of Medicine and Healthcare,
University of Leeds, United Kingdom.
Telephone: +62 81225941697
Email:hcwna@leeds.ac.uk
*****Document will be translated into Indonesian

Appendix 13: Participant Information Sheet for Service Users

School of Healthcare Faculty of Medicine and Healthcare

UNIVERSITY OF LEEDS

Participant Information Sheet for the Couples

The title of the research study:

"Exploring the Concept and Nature of Premarital Preconception Care in Indonesia: A Qualitative Comparative Case Study Design"

You are invited to take part in a research study. Before you decide, it is important for you to understand why the research is being conducted and what will be involved. Please take the time to read the following information carefully and discuss it with others if you wish. Ask us if something is not clear or if you would like more information. Take the time to decide whether you wish to take part.

What is the purpose of the project?

Maternal mortality rates (MMRs) are still high, especially in lower-middle-income countries (LMICs). Previous research has highlighted the importance of indirect cause related to the health of the couple before pregnancy. It has a profound impact on the health outcomes of both mother and child. Preconception care (PCC) aims to improve couples' health and pregnancy outcomes. In Indonesia, PCC is known as premarital preconception care (PPCC); it is one of the PCC approaches that involving both men and women. Given the lack of evidence relating to but its results PPCC, it is essential to understand the thinking behind, nature of the concept and how inclusive it is for the men in the PPCC process. The overall aim is to explore the concept and nature of PPCC for maternal and family health in Indonesia.

Why have I been chosen?

You are invited to this study because you are accessed to PPCC services within Kenanga and Melati PHC.

Do I have to take part?

It is up to you to decide whether to take part. If you do decide to take part, you will be given this information sheet to keep, and there will be no impact on your medical care.

What do I have to do?

If you decide to participate in the study, it will involve two activities: interview and observation. You may choose to participate in either or both activities. Prior to the

interview and observation, you will be given a short briefing regarding the technical data collection.

For the interview

The interview will be conducted in a relaxed and flexible setting either in a private room at the centre or in your house. The interview will last approximately one hour to one-half hours. The researcher will ask you the best time to interview. A break will be offered and refreshments will be provided during the interview. If the interview will be conducted in participant's house, the researcher intends to provide refreshments. However, this will be adjusted to local policies related to COVID-19 restriction. The interviews may be performed over Zoom if COVID restrictions apply. During working hours, interviews will be conducted on Monday to Friday from 8 am to 2 pm. If the interview is to be scheduled outside of working hours, this will be agreed upon with you with a time range between 4 pm and 7 pm. The interview will also be recorded using encrypted MP4 audio recording. To start the interview, the researcher will provide a detailed account of the interview including the process of the interview, time, topic areas, withdrawal process, right to decline to answer the specific questions and confidentiality of information you gave. You are free to withdraw your participation at any time and without any reason and any negative consequences. You will be given up to one week to withdraw your data. Otherwise, data cannot be withdrawn once the analysis has been conducted. The interview is conducted to explore your views related PPCC services. The researcher will ask some questions related to your knowledge, experiences, and needs for the PPCC services.

For observation

The observation will be conducted during the counselling session in the routine PPCC services. The observation will also be conducted once both parties (HPs and both of you) granted permission. You may withdraw your participation at any point however your observational data will still be used. Data cannot be withdrawn once the observation has started. For this reason, the researcher will reassure that the HPs and both of you have a clear understanding of the observation process. Before the observation, the researcher will conduct a short briefing, explaining the objectives and how the observation process will be carried out. The researcher will also explain that the observations will be made to get a 'real-life picture' of the implementation of the PPCC process. The researcher will observe by sitting in the room at a certain distance without being involved in the process or interact with the participants.

What are the possible benefits of taking part?

There may not be a direct benefit to you for participating in this study. However, your views will help us understand the services, your experiences, and needs related to

PPCC services.

What are the possible disadvantages and risks of taking part?

The conversation may be difficult and the observation may be off-putting, but the researcher will try to minimise any distractions. You will be able to decline to answer specific questions. In addition, because this study will be conducted during the COVID-19 pandemic, all activities will be carried out by following established health protocols to protect you and the researcher from the risk of contracting and transmitting the COVID-19 disease.

What will happen to my personal information?

All information obtained from you will be kept strictly confidential. Your name will be removed from the interview transcription, which means only the researcher can access them. The supervisory team (Prof Linda McGowan and Dr Yu Fu) will have access to all of the interview transcripts and field notes for verification of transcription and analyses. However, all your personal identifiable details will be removed before granting them access to your data. For the purpose of the translation process, a professional translator will have access to the anonymised interview transcripts. However, in the confidentiality agreement with the professional translator, it will be stated that he/she promises to respect the confidentiality of the information and will not use the data for any purpose. Although the data will be shared with the supervisory team and a professional translator, your personal information will not be identifiable.

What will happen to the results of the research project?

Your responses and that of other participants will be analysed. Some quotes will be taken from participants` responses to illustrate the views of participants. However, you will not be identified or identifiable. The results of this study will form part of the researcher's Ph.D. thesis. The researcher will publish them in multiple Primaryations (in both scientific and professional journals). In addition, the researcher will be present them at relevant conferences. After the study is completed, the data will be stored on the Research Data Leeds Repository in an anonymous form (non-identifiable data) with the aim of good practice. This data can be used by other researchers in the future.

Who is organising/ funding the research?

The study is being undertaken as part of a Ph.D. at the University of Leeds. However, this study is funded by the Directorate General of Resources for Technology and Higher

Education, RePrimary of Indonesia.

Who has reviewed this study?

Ethical approval has been granted by both the School of Healthcare Research Ethics Committee (SHREC) the University of Leeds and the Ethics Committee of the Faculty of Medicine, Universitas Muhammadiyah (UMS) of Surakarta Indonesia. Ethical approval means that an independent panel of University staff have reviewed the study for its potential risks and benefits to participants for applicant of HREC 20-022 (the researcher ethic number).

If you agree to take part in this study, would like more information, or have any questions or concerns about the study, please contact:

Name	Winarsih Nur Ambarwati
Status	Ph.D. student
Telephone	+62 81225941697
Email address	hcwna@leeds.ac.uk

Should you have a complaint about the way this study is being conducted, please contact the researcher's supervisor.

The Chief Investigator	Professor Linda McGowan
Email address	l.McGowan@leeds.ac.uk

Thank you very much for taking the time to read the information.

Appendix 14: Consent Form for Interview with the Couples

School of Healthcare Faculty of Medicine and Healthcare

UNIVERSITY OF LEEDS

Concern Form for Interview

Consent to take part in "Exploring the Concept and Nature of Premarital Preconception Care in Indonesia: A Qualitative Comparative Case Study Design"	Add your initials next to the statement if you agree
We confirm that we have read and understood the information sheet version 3, 13 October 2021, explaining the above research study, and we have had the opportunity to ask questions about the study.	
We understand that our participation is voluntary and that we are free to withdraw our participation at any time and without any reason and any negative consequences. We will be given up to one week to withdraw our data. Otherwise, data cannot be withdrawn once the analysis has been conducted. In addition, we are free to decline if we do not wish to answer any particular question or questions. To withdraw, please get in touch with the lead researcher: Winarsih Nur Ambarwati, 081225941697.	
We understand that research team members have access to our anonymised responses. We understand that our name will not be linked with the research materials, and we will not be identified or identifiable in the report or reports that results from the research.	
We understand that our responses will be kept strictly confidential by the researcher and the professional translator.	
We understand that the data collected from us will be stored and used in relevant future research in an anonymised form, or we understand that after the study is completed, the data we provide will be stored on the Research Data Leeds Repository.	
We understand that relevant sections of the data collected during the study may be looked at by auditors from the University of Leeds or relevant regulatory authorities for our participation in this	

research.	
We understand that we can ask the study findings if we wish.	
We agree to participate in the individual interview and give permission to the researcher to record the interview.	
We agree to inform the lead researcher should the contact detail change	

Name of participant	1. …… 2. ……
Participant's signature	1. …… 2. ……
Date	
Name of lead researcher	Winarsih Nur Ambarwati
Signature	
Date	

Appendix 15: Consent Form for Observation with the Couples

School of Healthcare Faculty of Medicine and Healthcare

UNIVERSITY OF LEEDS

Consent Form for Observation

Consent to take part in "Exploring the Concept and Nature of Premarital Preconception Care in Indonesia: A Qualitative Comparative Case Study Design"	Add your initials next to the statement if you agree
We confirm that we have read and understood the information sheet version 3, 11 October 2021, explaining the above research study and we have had the opportunity to ask questions about the study.	
We understand that our participation is voluntary and that we are free to withdraw our participation at any time and without any reason and any negative consequences. However, the observational data will still be used, the data cannot be withdrawn once the observation has started. In addition, we are free to decline if we do not wish to answer any particular question or questions. To withdraw, please get in touch with the lead researcher: Winarsih Nur Ambarwati, 081225941697.	
We understand that research team members have access to my anonymised responses. We understand that our name will not be linked with the research materials, and we will not be identified or identifiable in the report or reports that results from the research.	
We understand that our responses will be kept strictly confidential by the researcher and the professional translator.	
We understand that the data collected from us will be stored and used in relevant future research in an anonymised form or we understand that after the study is completed, the data we provide will be stored on the Research Data Leeds Repository.	
We understand that relevant sections of the data collected during the study, may be looked at by auditors from the University of Leeds or relevant regulatory authorities for our participation in this research.	
We understand that we can ask the study findings if we wish.	

We agree to participate in the observation of routine counselling of preconception premarital care.	
We agree to inform the lead researcher should the contact detail change	

Name of participant	1. …… …… 2. …… ……
Participant's signature	1. …… …… 2. …… ……
Date	
Name of lead researcher	Winarsih Nur Ambarwati
Signature	
Date	

Appendix 16: Invitation Letter for Service Providers

UNIVERSITY OF LEEDS

Date: ……..

Dear … (participant's name)

My name is Winarsih Nur Ambarwati, and I am a Ph.D. student at the School of Healthcare, University of Leeds, United Kingdom. I would like to invite you to take part in the research study titled **"Exploring the Concept and Nature of Premarital Preconception Care in Indonesia: A Qualitative Comparative Case Study Design."**

The background of this is that the health of a couple before pregnancy has a profound impact on the health outcomes of both mother and child. Preconception care (PCC) aims to improve couples' health and baby and reduce complication during pregnancy such us abortion, anaemia and premature birth. In Indonesia, PCC is known as premarital preconception care (PPCC); it is one of the PCC approaches involving both men and women. Given the lack of evidence relating to but its results PPCC, it is essential to understand the thinking behind the nature, the concept of PPCC and how inclusive it is for the men in the PPCC process. The overall aim of this study is to explore the concept and nature of PPCC for maternal and family health in Indonesia.

The Head of Public Health Centre (PHC) has sent this letter on behalf of the University of Leeds. You are invited to participate in this study, as you are involved in PPCC as manager/staff member within Kenanga/Melati PHC. I would like to hear your views and experiences on managing and conducting PPCC services. You will be given up to a week after the date in the letter of invitation to express your interest. If you are interested in participating in this study or would like to find out more information, do not hesitate to contact the researcher. I will be in the Kenanga/Melati PHC from Monday to Friday during the working hours (08.00 am to 02:00 pm) if you want to talk to the researcher in person. Thank you for the time to read this invitation letter.

Yours faithfully,

Winarsih Nur Ambarwati
Ph.D. Student,
School of Healthcare, Faculty of Medicine and Healthcare,
University of Leeds, United Kingdom.
Telephone: +62 81225941697
Email:hcwna@leeds.ac.uk
*****Document will be translated into Indonesian

Appendix 17: Participant Information Sheet (PIS) for the Service Providers

UNIVERSITY OF LEEDS

Participant Information Sheet (PIS) for the Service Providers

The title of the research study:

"Exploring the Concept and Nature of Premarital Preconception Care in Indonesia: A Qualitative Comparative Case Study Design"

You are invited to take part in a research study. Before you decide, it is important for you to understand why the research is being conducted and what will be involved. Please take the time to read the following information carefully and discuss it with others if you wish. Ask us if something is not clear or if you would like more information. Take the time to decide whether you wish to take part.

What is the purpose of the project?

Maternal mortality rates (MMRs) are still high, especially in lower-middle-income countries (LMICs). Previous research has highlighted the importance of indirect cause related to the health of the couple before pregnancy. It has a profound impact on the health outcomes of both mother and child. Preconception care (PCC) aims to improve couples' health and pregnancy outcomes. In Indonesia, PCC is known as premarital preconception care (PPCC); it is one of the PCC approaches involving both men and women. Given the lack of evidence relating to but its results PPCC, it is essential to understand the thinking behind, the nature, the concept and how inclusive it is for the men in the PPCC services. The overall aim is to explore the concept and nature of PPCC for maternal and family health in Indonesia.

Why have I been chosen?

You are invited to this study because you are involved in PPCC as a manager/staff member within Kenanga and Melati PHC.

Do I have to take part?

It is up to you to decide whether to take part. If you do decide to take part, you will be given this information sheet to keep, and there will be no impact on your job.

What do I have to do?

If you decide to participate in the study, it will involve two activities: interview and observation. You may choose to participate in either or both activities. Prior to the

interview and observation, you will be given a short briefing regarding the technical data collection.

For the interview

The interview will be conducted in a relaxed and flexible setting, either in a private room at the centre or in your house. The interview will last approximately one hour to one-half hours. During the interview, a break will be offered, and refreshments will be provided. If the interview will be conducted in your house, the researcher intends to provide refreshments. However, this will be adjusted to local policies related to COVID-19 restriction. The interviews may be performed over Zoom if COVID restrictions apply. You can choose the time of the interview, whether it will be conducted during working hours or outside working hours, for your convenience. During working hours, interviews will be conducted on Monday to Friday from 8 am to 2 pm. If the interview is to be scheduled outside of working hours, this will be agreed upon with you with a time range between 4 pm and 7 pm. The interview will also be recorded using an encrypted MP4 audio recording. The interview will begin with the researcher provides information about the interview process, the topic areas to be asked, the length of the interview, withdrawal process, right to decline to answer the specific questions and the security and confidentiality of the information provided. You are free to withdraw your participation at any time and without any reason and any negative consequences. You will be given up to one week to withdraw your data. Otherwise, data cannot be withdrawn once the analysis has been conducted.

Interview with the managers will focus on the management of PPCC services, explore the facilitators and barriers identified that are addressed with a view to improving PPCC management. Meanwhile, the interview for the staff will focus on the implementation of PPCC, explore the role and how involved men are in the counselling process and identify the facilitators and barriers identified that are addressed with a view to improving PPCC implementation and the involvement of men in PPCC.

For observation

The observation will be conducted during the counselling session in the routine PPCC services. The observation will also be conducted once both parties (you and couples) grant permission. You may withdraw your participation at any point, but your observational data will still be used. Data cannot be withdrawn once the observation has started. For this reason, the researcher will reassure that you and the couples have a clear understanding of the observation process. Before the observation, the researcher will conduct a short briefing, explaining the objectives and how the observation process will be carried out. The researcher will also explain that the observations will be made to get a ‘real-life picture’ of the PPCC services. The researcher will observe by sitting in

the room at a certain distance without being involved in the process or interact with the participants.

What are the possible benefits of taking part?

There may not be a direct benefit to you for participating in this study. However, your views will help us understand the services, experiences, and needs related to PPCC services.

What are the possible disadvantages and risks of taking part?

The conversation may be difficult and the observation may be off-putting, but the researcher will try to minimise any distractions. You will be able to decline to answer specific questions. In addition, because this study will be conducted during the COVID-19 pandemic, all activities will be carried out by following established health protocols to protect you and the researcher from the risk of contracting and transmitting the COVID-19 disease.

What will happen to my personal information?

All information obtained from you will be kept strictly confidential. Your name will be removed from the interview transcription, which means only the researcher can access them. The supervisory team (Prof Linda McGowan and Dr Yu Fu) will have access to all of the interview transcripts, field notes for verification of transcription and analyses. However, all your personal identifiable details will be removed before granting them access to your data. For the purpose of the translation process, a professional translator will have access to the anonymised interview transcripts. However, in the confidentiality agreement with the professional translator, it will be stated that he/she promises to respect the confidentiality of the information and will not use the data for any purpose. Although the data will be shared with the supervisory team and a professional translator, your personal information will not be identifiable.

What will happen to the results of the research project?

Your responses and that of other participants will be analysed. Some quotes will be used from participants` responses to illustrate the views of participants. However, you will not be identified or identifiable. The results of this study will form part of the researcher's Ph.D. thesis. The researcher will publish them in multiple Primaryations (in both scientific and professional journals). In addition, the researcher will present them at relevant conferences. After the study is completed, the data will be stored on the Research Data Leeds Repository in an anonymous form (non-identifiable data) with the aim of good practice. This data can be used by other researchers in the future.

Who is organising/ funding the research?

The study is being undertaken as part of a Ph.D. at the University of Leeds. However, this study is funded by the Directorate General of Resources for Technology and Higher Education, RePrimary of Indonesia.

Who has reviewed this study?

Ethical approval has been granted by both the School of Healthcare Research Ethics Committee (SHREC) the University of Leeds and the Ethics Committee of the Faculty of Medicine, Universitas Muhammadiyah (UMS) of Surakarta Indonesia. Ethical approval means that an independent panel of University staff have reviewed the study for its potential risks and benefits to participants for applicant of HREC 20-022 (the researcher ethic number).

If you agree to take part in this study, would like more information, or have any questions or concerns about the study, please contact:

Name	Winarsih Nur Ambarwati
Status	Ph.D. student
Telephone	+62 81225941697
Email address	hcwna@leeds.ac.uk

Should you have a complaint about the way this study is being conducted, please contact the researcher's supervisor.

The Chief Investigator	Professor Linda McGowan
Email address	l.McGowan@leeds.ac.uk

Thank you very much for taking the time to read the information.

Appendix 18: Consent Form for Interview with the Service Providers

School of Healthcare Faculty of Medicine and Healthcare

UNIVERSITY OF LEEDS

Concern Form for Interview

Consent to take part in "Exploring the Concept and Nature of Premarital Preconception Care in Indonesia: A Qualitative Comparative Case Study Design"	Add your initials next to the statement if you agree
I confirm that I have read and understood the information sheet version 3, 13 October 2021, explaining the above research study, and I have had the opportunity to ask questions about the study.	
I understand that my participation is voluntary and that I am free to withdraw my participation at any time and without any reason and any negative consequences. I will be given up to one week to withdraw my data. Otherwise, data cannot be withdrawn once the analysis has been conducted. In addition, I am free to decline if I do not wish to answer any particular question or questions. To withdraw, please get in touch with the lead researcher: Winarsih Nur Ambarwati, 081225941697.	
I understand that research team members have access to my anonymised responses. I understand that my name will not be linked with the research materials, and I will not be identified or identifiable in the report or reports that results from the research.	
I understand that my responses will be kept strictly confidential by the researcher and the professional translator.	
I understand that the data collected from me will be stored and used in relevant future research in an anonymised form, or I understand that after the study is completed, the data I provide will be stored on the Research Data Leeds Repository.	
I understand that relevant sections of the data collected during the study may be looked at by auditors from the University of Leeds or relevant regulatory authorities for my participation in this	

research.	
I understand that I can ask the study findings if I wish.	
I agree to participate in the individual interview and give permission to the researcher to record the interview.	
I agree to inform the lead researcher should my contact detail change	

Name of participant	
Participant's signature	
Date	
Name of lead researcher	Winarsih Nur Ambarwati
Signature	
Date	

Appendix 19: Consent Form for Observation with the Service Providers

School of Healthcare Faculty of Medicine and Healthcare

UNIVERSITY OF LEEDS

Consent Form for Observation

Consent to take part in "Exploring the Concept and Nature of Premarital Preconception Care in Indonesia: A Qualitative Comparative Case Study Design"	Add your initials next to the statement if you agree
I confirm that I have read and understood the information sheet version 3, 13 October 2021, explaining the above research study and I have had the opportunity to ask questions about the study.	
I understand that my participation is voluntary and that I am free to withdraw my participation at any time and without any reason and any negative consequences. However, the observational data will still be used, the data cannot be withdrawn once the observation has started. To withdraw, please get in touch with the lead researcher: Winarsih Nur Ambarwati, 081225941697.	
I understand that research team members have access to my anonymised responses. I understand that my name will not be linked with the research materials, and I will not be identified or identifiable in the report or reports that results from the research.	
I understand that my responses will be kept strictly confidential by the researcher and the professional translator.	
I understand that the data collected from me will be stored and used in relevant future research in an anonymised form, or I understand that after the study is completed the data, I provide will be stored on the Research Data Leeds Repository.	
I understand that relevant sections of the data collected during the study may be looked at by auditors from the University of Leeds or relevant regulatory authorities for my participation in this research.	
I understand that I can ask the study findings if I wish.	

I agree to participate in the observation of routine counselling of preconception premarital care.	
I agree to inform the lead researcher should my contact detail change	

Name of participant	
Participant's signature	
Date	
Name of lead researcher	Winarsih Nur Ambarwati
Signature	

Appendix 20: Example of Interview Schedule

Interview Topic Guide for Manager of PPCC

Data Demographics:

Participants code	:
Gender	: □ Male □ Female
Current Role	:
Education	:
Profession	:
Length of work as the health professional	:
Experience in managing and delivering the PPCC services	:
Primary Health Centre	: □ Kenanga □ Melati
Date	:

Interview Schedule

Opening	
1.	Establish Rapport (Welcome/greeting/thank you) Hello, I am is the researcher. My name is Winarsih Nur Ambarwati, I am a PhD student at the University of Leeds, United Kingdom. I would like to say thank you for seeing me today and offering to take part in the study.
2.	Purpose First, I would like to outline the objectives of the interview and make it clear what topic areas will be addressed so that you are able to decide whether you wish to proceed further. The interview is conducted to explore your views as a manager of premarital preconception care (PPCC). I will ask some questions related to PPCC management include the implementation of PPCC, explore the facilitators and barriers identified are addressed with a view to improve PPCC services. Interview will be recorded using encrypted audio recording. All information you provide will be strictly confidential. You can also withdraw the data 24 hours after the interview. If you decide to participate in the study, you will need to sign consent form × 2 (one for participant and information sheet, one for interviewer).
3.	Potential Benefits

	Your views will be valuable to help us understand the problems, experiences, and needs related to PPCC services.
4.	Timeline The interview will last approximately one hour to one half hours. Please feel free to ask questions at any stage during the interview. I might make a few notes in case I want to come back to something later.

Body (Main Questions)

The questions are more of guidance, the questions will be developed based on the participants' responses.

1. Topic: The implementation of PPCC
   a. What the definition of PPCC?
      If No: Probing
      - What do you know about PPCC?
      - Would you please tell me your understanding about PPCC?
   b. What the components of PPCC?
      If No: Probing
      - What kind of services include in the PPCC?
      - Is there any clinical guidance in delivering PPCC?
      - What sort of considerations in developing components of PPCC?
      - Who decided the components include?
   c. Tell me about the regulations related PPCC both from the central government and the Primary health centers?
      If No: Probing
      - What regulation is about?
      - What regulations based on?
      - What kind of considering to implement PPCC in this Puskesmas?
      - What benefits in implementing PPCC for the Puskesmas?
2. Topic: The barriers and facilitators and how to address to improve PPCC
   a. What the barriers in implementing of PPCC?
      If No: Probing
      Staffing:
      - Tell me what are the obstacles in setting up a professional healthcare professional for PPCC.
      - What efforts have been made to overcome it?
      - Would you please tell me how to decide who to be counsellor PPCC?

	Training: • Are there any special training/requirements to become a PPCC counsellor? • Who provides the training? • Have all PPCC counsellors received special training? • Tell me what are the obstacles if not all counsellors are trained? How to deal with it? Facility: • What facilities are needed in implementing PPCC? • Who provides the facilities? • Are the facilities available at your center adequate? • What are the constraints in the provision of facilities? Funding: • Where are the sources of funds for the implementation of PPCC in your Puskesmas? • Are the available funds sufficient? • What is the basis for determining the size of the budget? • How to overcome the limited funds? b. What are the facilitators in implementing PPCC? If No: Probing • What resources in the Puskesmas support the implementation of PPCC?
Do you think anything else that the interviewee feels has been missed and anything that they did not get a chance to discuss fully?	
Do you think anyone else that would be useful to speak to?	
Closing	
1.	(Summarise) (Summarise the main issues discussed during the interview and discuss the next course of action to be taken). Do you have any questions before I end the interview?
2.	(Maintain Rapport) I appreciate the time you took for this interview. (Remind about anonymity and confidentiality).

	(Remind that participants can withdraw the data 24 hours after the interview).
3.	(Action to be taken) I should have all the information I need. Would it be alright to call you if I have any more questions?
4.	Thank the respondent for his or her time.

B. Interview Topic Guide for the staff who deliver PPCC

Data Demographics:

Participants code	:
Gender	: □ Male □ Female
Current Role	:
Education	:
Profession	:
Length of work as the health professional	:
Experience in delivering PPCC	:
Primary Health Centre	: □ Kenanga □ Melati
Date	:

Interview Schedule

Opening	
1	Establish Rapport (Welcome/greeting/thank you) Hello, I am is the researcher. My name is Winarsih Nur Ambarwati, I am a PhD student at the University of Leeds, United Kingdom. I would like to say thank you for seeing me today and offering to take part in the study.
2	Purpose First, I would like to outline the objectives of the interview and make it clear what topic areas will be addressed so that you are able to decide whether you wish to proceed further. The interview is conducted to explore your views as the health professionals who deliver premarital preconception care (PPCC). I will ask some questions on how PPCC is being carried out, views about PPCC services, and explore the facilitators and barriers identified are addressed with a view to improve PPCC services and the involvement of

	men in PPCC. Interview will be recorded using encrypted audio recording. All information you provide will be strictly confidential. You can also withdraw the data 24 hours after the interview. If you decide to participate in the study, you will need to sign consent form twice (one for participant and information sheet, one for interviewer).
3	Potential Benefits Your views will be valuable to help us understand the problems, experiences, and needs related to PPCC services.
	Timeline The interview will last approximately one hour to one half hours. Please feel free to ask questions at any stage during the interview. I might make a few notes in case I want to come back to something later.

Body (Main Questions)

The questions are more of guidance, the questions will be developed based on the participants' responses.

1. Topic: The implementation of PPCC
    a. What the definition of PPCC?

        If No: Probing

        - What do you know about PPCC?
        - Would you please tell me your understanding about PPCC?

    b. What the components of PPCC?

        If No: Probing

        - What kind of services (components) include in the PPCC?
        - Is there any clinical guidance in delivering PPCC?
        - Do you as a counselor have a role in determining the components of the PPCC?

    c. How the procedure of PPCC?

        If No: Probing

        - Would you please tell how PPCC is being carried out?

- Why is the implementation of PPCC in each Puskesmas different?

2. Topic: The barriers and facilitators and how to address to improve PPCC

   a. What the barriers in delivering of PPCC

      If No: Probing

      Time:

      - Would you please tell me what are the obstacles related to the timing in delivering PPCC?
      - How to deal with time constraints?
      - Do you have sufficient time to carry out your duties as a PPCC counsellor?

      Workload:

      - Would you please tell me a problem related to your workload?
      - How do you cope with your workload problem?
      - Would you please tell me have you received adequate training to serve as a counsellor?
      - Is your duty as a counsellor a burden on your work or do you enjoy your job as a PPCC counsellor?
      - What is needed to solve these problems?

      Motivation:

      - What motivated and unmotivated you as a PPCC counsellor?
      - What do you need to be a good PPCC counsellor?

      Evaluation:

      - Would you please tell me how so far, the PPCC evaluation has been carried out?
      - Do you think the current PPCC model is correct/appropriate?
      - As a counsellor, what are the obstacles faced with the current model?
      - What is needed to improve PPCC services?

   b. What the facilitators in delivering PPCC?

If No: Probing

- Would you please tell me what factors facilitate the delivery of PPCC?

3. Topic: The involvement of couples

a. What the determinant factors (belief, social value, culture) of the involvement of couples?

If No: Probing

- Would you please tell me what belief in your community related the involvement of couples in PPCC?
- Would you please tell me what social value in your community related the involvement of couples in PPCC?
- Tell me how the involvement of couples in PPCC in your culture?

b. What the barriers involving men in PPCC?

If No: Probing

- Would you please tell me what is the role of men in maternal and child health care in the local culture?
- Would you please tell me how to involve men in the PPCC?
- Would you please tell me the extent of men's roles in the PPCC?
- What is needed to be able to involve men effectively in your community!

c. What are the relative outcomes of the involvement of couples in PPCC?

If No: Probing

- What benefits do you see from involving men in PPCC from a service point of view?
- What benefits do you see for women and men involved in PPCC?

Do you think anything else that the interviewee feels has been missed and anything

that they did not get a chance to discuss fully?	
Do you think anyone else that would be useful to speak to?	
Closing	
1	(Summarise) (Summarise the main issues discussed during the interview and discuss the next course of action to be taken). Do you have any questions before I end the interview?
2	(Maintain Rapport) I appreciate the time you took for this interview. (Remind about anonymity and confidentiality). (Remind that participants can withdraw the data 24 hours after the interview).
3	(Action to be taken) I should have all the information I need. Would it be alright to call you if I have any more questions?
4	Thank the respondent for his or her time.

C. Interview Topic Guide for the Couples

Data Demographics:

Participants code	:
Age	Male: Female:
Education	:
Ethnicity	:
Profession	:
Primary Health Centre	: □ Kenanga □ Melati
Date	:

Interview Schedule

Opening	
1.	Establish Rapport (Welcome/greeting/thank you) Hello, I am is the researcher. My name is Winarsih Nur Ambarwati, I am a PhD student at the University of Leeds,

	United Kingdom. I would like to say thank you for seeing me today and offering to take part in the study.
2.	Purpose First, I would like to outline the objectives of the interview and make it clear what topic areas will be addressed so that you are able to decide whether you wish to proceed further. The interview is conducted to explore your views as a couple who referred to premarital preconception care (PPCC). I will ask some questions related to your knowledge, experiences, and needs to the PPCC services. Interview will be recorded using encrypted audio recording. All information you provide will be strictly confidential. You can also withdraw the data 24 hours after the interview. If you decide to participate in the study, you will need to sign consent form twice (one for participant and information sheet, one for interviewer).
3.	Potential Benefits Your views will be valuable to help us understand the problems, experiences, and needs related to PPCC services.
4.	Timeline The interview will last approximately one hour to one half hours. Please feel free to ask questions at any stage during the interview. I might make a few notes in case I want to come back to something later.
Body (Main Questions) **The questions are more of guidance, the questions will be developed based on the participants' responses.**	
1. Topic: The knowledge about PPCC What is PPCC means to you (men and women)? If No: Probing • Would you please tell me what do you know about PPCC? • Would you please tell me your views are about the PPCC services? • What the value of PPCC for you? • Would you please tell me the belief in your community related to PPCC? **1. Topic: The involvement of couples** What aspect related to the involvement of couples? If No: Probing • What determinant factors related to the involvement of couples in the	

PPCC?
- What barriers in involving men in PPCC?
- What relative outcomes (for women, men) of PPCC that involved the couples?

3. Topic: The service users views to improve PPCC services

What steps to be done to improve PPCC services?

If No: Probing

- Would you please tell me about your experience in receiving PPCC services?
- How do you think about the socialization of PPCC services?
- What should be done to increase the socialization?
- Would you please tell me about the counsellor whether you feel comfortable with the counsellor!
- Do you think the counsellor is competent?
- In your opinion, how are the PPCC facilities?
- Do you think the knowledge conveyed in the PPCC helps you in preparing for maternal, child and family health?

Anything else that the interviewee feels has been missed and anything that they did not get a chance to discuss fully.

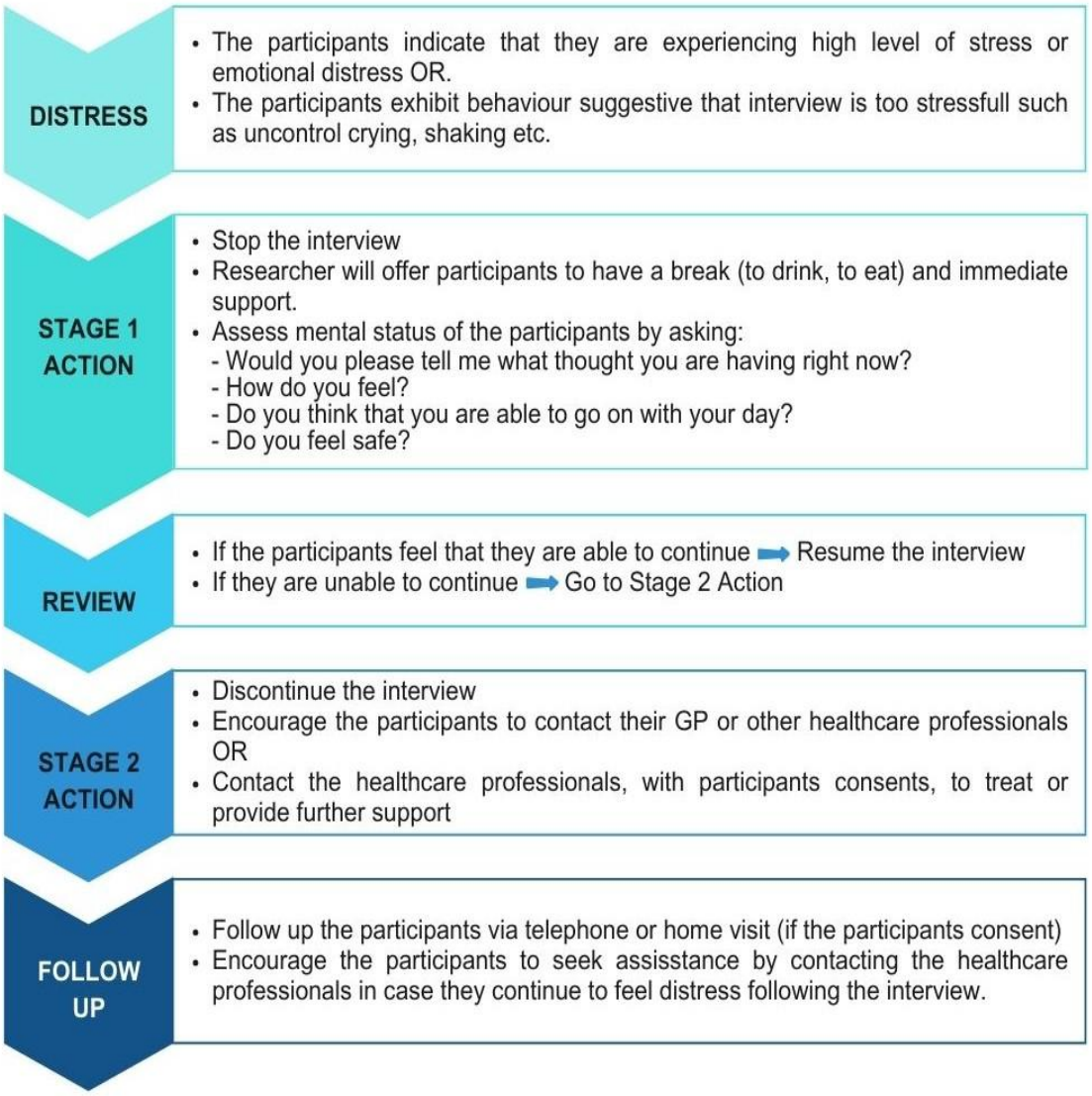
Anyone else that would be useful to speak to.

Closing

1.	(Summarise) (Summarise the main issues discussed during the interview and discuss the next course of action to be taken). Do you have any questions before I end the interview?
2.	(Maintain Rapport) I appreciate the time you took for this interview. (Remind about anonymity and confidentiality). (Remind that participants can withdraw the data 24 hours after the interview).
3.	(Action to be taken) I should have all the information I need. Would it be alright to call you if I have any more questions?
4.	Thank the respondent for his or her time.

Appendix 21: Distress Protocol

The protocol was modified from: Draucker, C. B., Martsolf, D. S. and Poole, C. (2009) Developing Distress Protocols for research on Sensitive Topics. Archives of Psychiatric Nursing 23 (5) pp 343-350.



Appendix 22: Protocol to Reduce Hawtorn Effects

Protocol to reduce Hawtorn effects Adopted from Oswald et al. (2014)

Steps	Strategies
1. Gauge the person	Familiarizing with all setting area by visiting regularly study sites.
2. Create a non-threatening perception	Engaging with the participants by interacting and having informal conversations using a non-formal Indonesian language mixed with local language. Wear casual clothes that are familiar with the local custom. Identify a clear role and behaviour of the researcher.
3. Introductions to the participants	Being interested in participants roles. Respect the setting.
4. Establishing rapport	Building a friendly relationship by showing an approachable and friendly manner. Using appropriate body language and maintaining contact eyes.
5. Relaxed signal	Use a light-hearted comments or jokes.
6. Linking to the conversation area	Change the topic of conversation to the researcher's interest area.

Appendix 23: Observation Sheet

The observation sheet was adopted from Spradley (1980)

Participant Code & Initial	:
Date	:

No.	**Components**	**Description**			
1.	SPACE	Can you describe in details all the places?			
2.	OBJECT	Where are objects located?			
3.	ACT	Where do acts occur?			
4.	ACTIVITY	What are all the places activities occur?			
5.	EVENT	What are all the places events occur?			
6.	TIME	Where do times periods occur?			
7.	ACTOR	Where do actors place themselves?			
8.	GOAL	Where are goals sought and achieved?			
9.	FEELING	Where do the various feeling states occur?			

Appendix 24: Translation Confidential Agreement

UNIVERSITY OF LEEDS

Translator/Interpreter Confidentiality Agreement

I have been contracted to translate or interpret interviews as part of a research study being conducted by Winarsih Nur Ambarwati, School of Healthcare Faculty of Medicine and Healthcare University of Leeds United Kingdom.

During the course of interpreting, I will refrain from expressing any personal opinions, or doing anything else that might be considered an activity other than interpreting.

Confidentiality

I agree to respect the confidentiality of any conversation I interpret. I will not communicate, publish, or share any information from the research study with any individual or organization other than the researcher named above.

Accuracy and Completeness

To the best of my ability, I will execute a complete and accurate translation/interpretation, not omitting or changing anything discussed in the course of the interview. I will not provide any explanation without a specific request from the interviewee or Winarsih Nur Ambarwati.

Impartiality

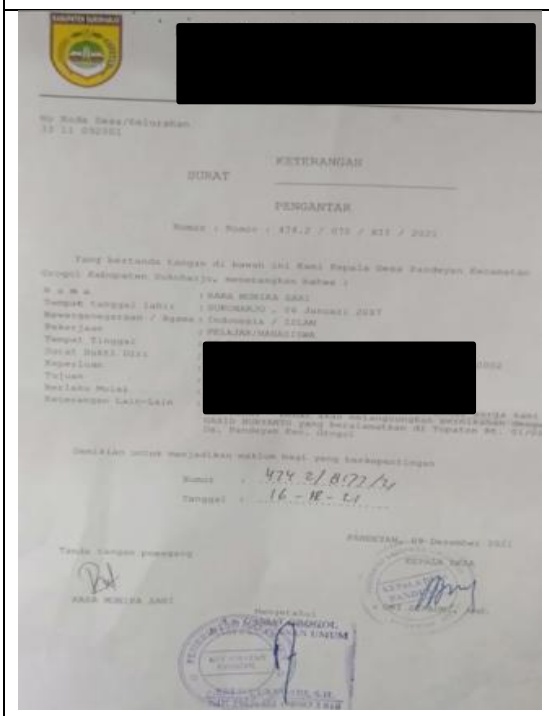
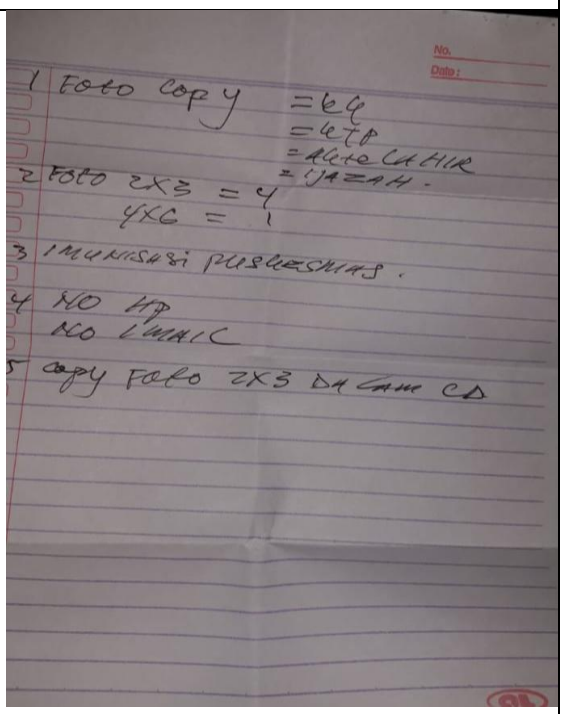
At no time will my personal opinions be allowed to interfere with any communication, and any unsolicited comments or suggestions will be made strictly to improve the quality of communication.

Sukoharjo, 24 November 2021

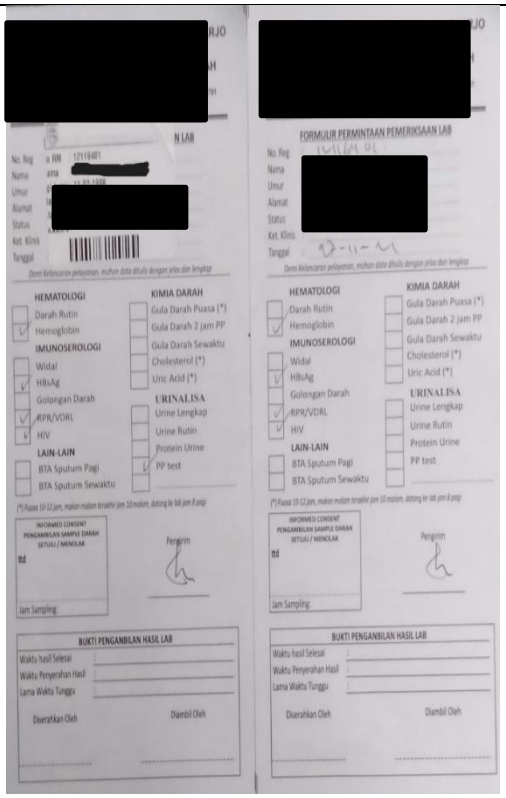
Translator/Interpreter's Printed Name: ACHMAD FARID

Translator/Interpreter's Signature

Appendix 25: Documents of the PPCC Services Used in the Routine Practice at Two Puskesmas

Melati Puskesmas	Kenanga Puskesmas
1. Example of cover letter from Kelurahan to get TT Vaccination	
	
The cover letter example from Melati Puskesmas illustrates that the letter was officially issued by a sub-district officer. It documented the prospective bride's identity and confirmed her residency. Notably, the letter was intended to introduce the bride to TT vaccination but did not facilitate access to PPCC services. It was required for registration at the Puskesmas. In contrast, Kenanga Puskesmas, while also issuing the same cover letter, did not require it for PPCC service registration. Kenanga Puskesmas utilised social media more effectively, often communicating directly with women through WhatsApp and sending photos and notes regarding the necessary documents.	

2. An example of referral letter for laboratory checks



FORMULIR PERMINTAAN PEMERIKSAAN LAB

HEMATOLOGI
- Darah Rutin
- Hemoglobin

IMUNOSEROLOGI
- Widal
- HBsAg
- Golongan Darah
- RPR/VDRL
- HIV

LAIN-LAIN
- BTA Sputum Pagi
- BTA Sputum Sewaktu

KIMIA DARAH
- Gula Darah Puasa (*)
- Gula Darah 2 jam PP
- Gula Darah Sewaktu
- Cholesterol (*)
- Uric Acid (*)

URINALISA
- Urine Lengkap
- Urine Rutin
- Protein Urine
- PP test

(*) Puasa 10-12 jam, makan malam terakhir jam 10 malam, datang ke lab jam 8 pagi

INFORMED CONSENT PENGAMBILAN SAMPLE DARAH SETUJU / MENOLAK

ttd

Pengirim

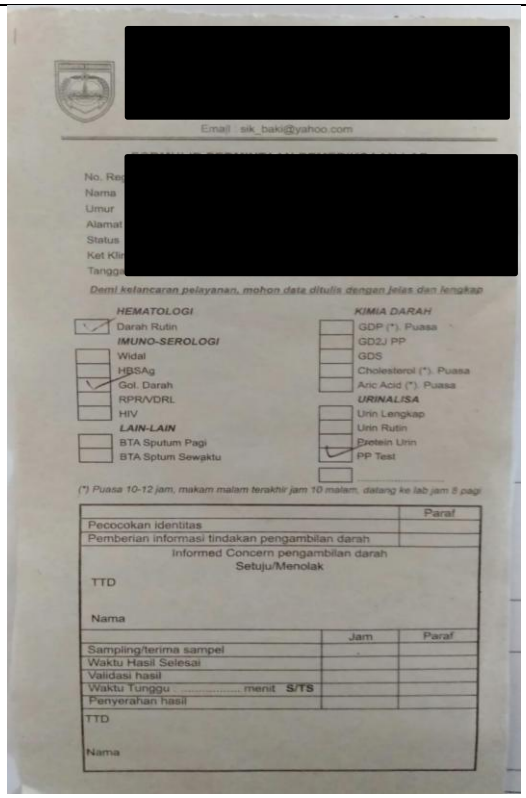
Jam Sampling:

BUKTI PENGAMBILAN HASIL LAB

Waktu hasil Selesai :
Waktu Penyerahan Hasil :
Lama Waktu Tunggu :

Diserahkan Oleh

Diambil Oleh



Email : sik_baki@yahoo.com

No. Reg
Nama
Umur
Alamat
Status
Ket Klin
Tangg

Demi kelancaran pelayanan, mohon data ditulis dengan jelas dan lengkap

HEMATOLOGI
- Darah Rutin

IMUNO-SEROLOGI
- Widal
- HBSAg
- Gol. Darah
- RPR/VDRL
- HIV

LAIN-LAIN
- BTA Sputum Pagi
- BTA Sputum Sewaktu

KIMIA DARAH
- GDP (*). Puasa
- GD2J PP
- GDS
- Cholesterol (*). Puasa
- Aric Acid (*). Puasa

URINALISA
- Urin Lengkap
- Urin Rutin
- Protein Urin
- PP Test

(*) Puasa 10-12 jam, makam malam terakhir jam 10 malam, datang ke lab jam 8 pagi

	Paraf
Pecocokan identitas	
Pemberian informasi tindakan pengambilan darah	

Informed Concern pengambilan darah
Setuju/Menolak

TTD

Nama

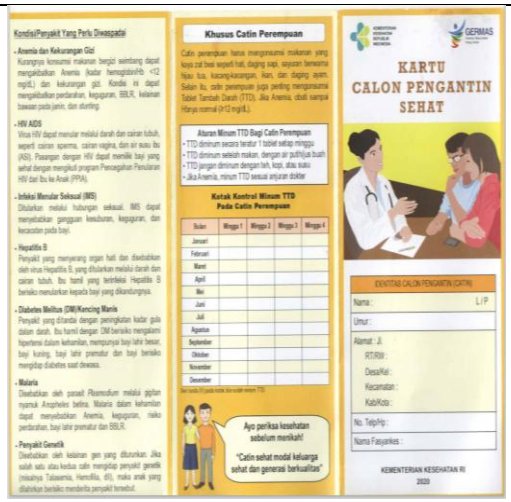
	Jam	Paraf
Sampling/terima sampel		
Waktu Hasil Selesai		
Validasi hasil		
Waktu Tunggu ..... menit S/TS		
Penyerahan hasil		

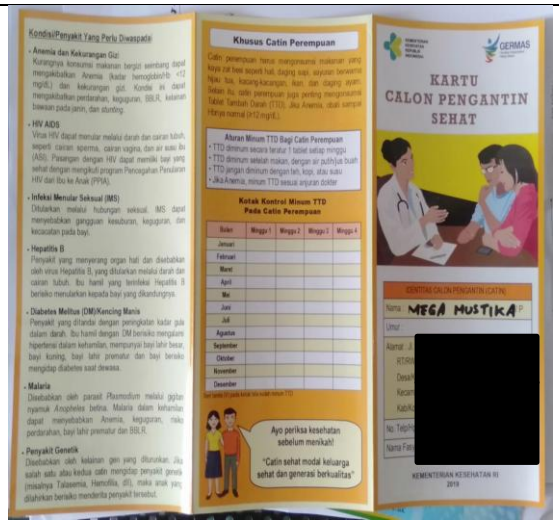
TTD

Nama

Based on the documents above, laboratory examinations at Melati Puskesmas were conducted for both males and females. For females, the examinations included a pregnancy test, haemoglobin examination, and a bundled screening package known locally as "triple elimination," which consists of VDRL, HIV, and HBsAg tests. For males, the examinations included haemoglobin level assessment and the "triple elimination" screening. In contrast, laboratory examinations at Kenanga Puskesmas were exclusively provided for females and included a pregnancy test, haemoglobin level assessment, and haematology tests.

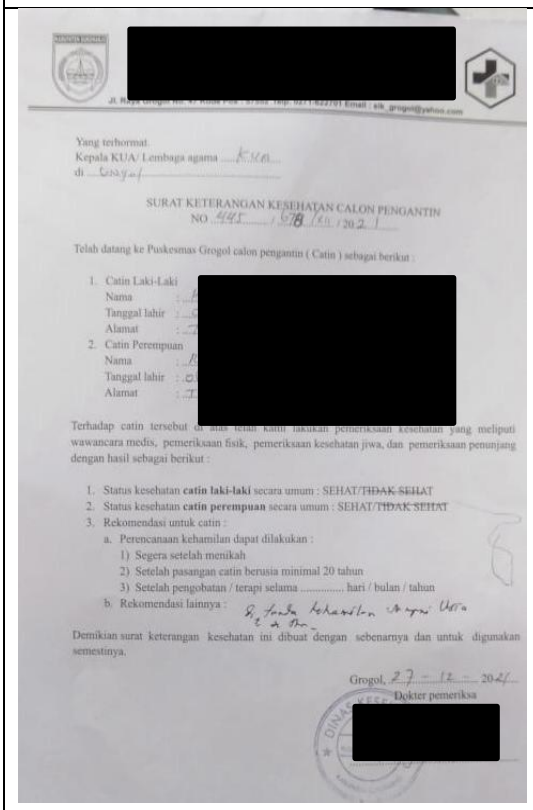
3. An Information leaflet for the bride and groom issued by the Ministry of Health





The image above shows the health examination card for prospective brides and grooms, issued by the Ministry of Health in 2019. This card also served as an educational leaflet for couples. At Melati Puskesmas, the card was typically given to couples upon completion of their premarital health check-up. It provided health information on topics such as the importance of pre-pregnancy health, pregnancy planning, sexually transmitted diseases, and family planning, and also functioned as a record for the premarital examination results. However, observations revealed that not all health providers at Melati Puskesmas filled out the examination results on the card, often leaving it blank. In contrast, at Kenanga Puskesmas, health providers consistently recorded examination results on the card and provided recommendations based on these results.

4. Example of a health certificate



Yang terhormat
Kepala KUA/ Lembaga agama .....
di .....

SURAT KETERANGAN KESEHATAN CALON PENGANTIN
NO 445 / 678 / 10 / 2021

Telah datang ke Puskesmas Grogol calon pengantin (Catin) sebagai berikut :

1. Catin Laki-Laki
   Nama : [redacted]
   Tanggal lahir :
   Alamat :
2. Catin Perempuan
   Nama :
   Tanggal lahir :
   Alamat :

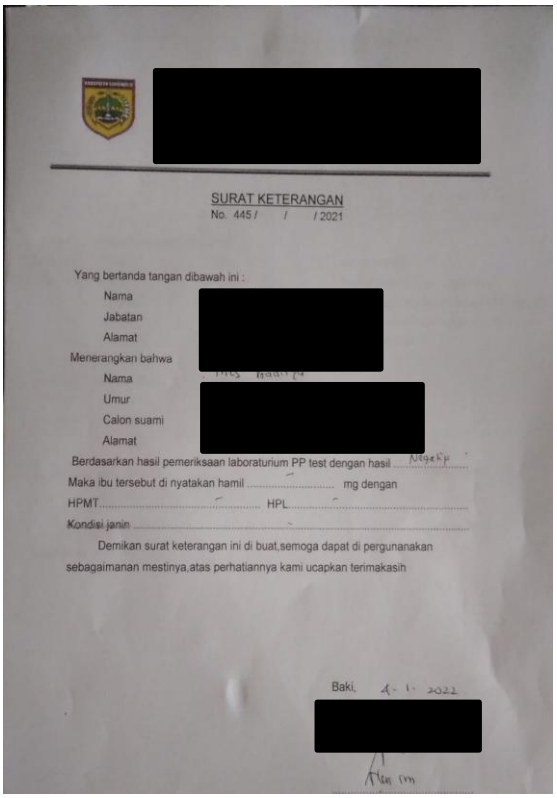
Terhadap catin tersebut di atas telah kami lakukan pemeriksaan kesehatan yang meliputi wawancara medis, pemeriksaan fisik, pemeriksaan kesehatan jiwa, dan pemeriksaan penunjang dengan hasil sebagai berikut :

1. Status kesehatan **catin laki-laki** secara umum : SEHAT/~~TIDAK SEHAT~~
2. Status kesehatan **catin perempuan** secara umum : SEHAT/~~TIDAK SEHAT~~
3. Rekomendasi untuk catin :
   a. Perencanaan kehamilan dapat dilakukan :
      1) Segera setelah menikah
      2) Setelah pasangan catin berusia minimal 20 tahun
      3) Setelah pengobatan / terapi selama ..... hari / bulan / tahun
   b. Rekomendasi lainnya :

Demikian surat keterangan kesehatan ini dibuat dengan sebenarnya dan untuk digunakan semestinya.

Grogol, 27 - 12 - 2021
Dokter pemeriksa

[redacted]



SURAT KETERANGAN
No. 445 / / 2021

Yang bertanda tangan dibawah ini :
Nama
Jabatan
Alamat
Menerangkan bahwa
Nama
Umur
Calon suami
Alamat

Berdasarkan hasil pemeriksaan laboraturium PP test dengan hasil
Maka ibu tersebut di nyatakan hamil ..... mg dengan
HPMT..... HPL.....
Kondisi janin .....

Demikan surat keterangan ini di buat,semoga dapat di pergunanakan sebagaimanan mestinya,atas perhatiannya kami ucapkan terimakasih

Baki, 4 - 1 - 2022

[redacted]

The example of the health certificate above highlights differences in format and content between the two Puskesmas. At Melati Puskesmas, the health certificate includes results for both female and male health check-ups, though couples receive only one certificate. If the examination results are normal, the certificate concludes with "HEALTHY." Deviations are noted as "UNHEALTHY," with recommendations for pregnancy planning, such as immediate conception, postponement due to age, or the need for medical treatment before conception. The certificate is signed by the attending doctor.

In contrast, Kenanga Puskesmas issues a certificate that only contains results from female health check-ups, as male check-ups are not required. This certificate lacks detailed explanations of physical assessments or laboratory results, providing only information about the pregnancy test. If the test is positive, the certificate includes gestational age and the estimated date of birth. No recommendations are given, and the certificate is signed by the midwife who conducted the examination.

Appendix 26. Summary of Findings of Two Cases

Table Summary of Findings of Two Cases

Puskesmas Melati	Puskesmas Kenanga
Findings from Interview and Observation Data	
Themes from the service users	
1. Knowledge and understanding about PPCC service	
• Lack of prior knowledge about the PPCC services due to limited information available • Participant self-report increased knowledge after accessed the service which include health and religious topics • Participants thought that PPCC might provide health benefits but some saw it as an administrative matter for marriage purposes	• PPCC services were not well known due to limited exposure before accessed the service • Some participants self-reported increased their knowledge, but only limited to health preparation before pregnancy • PPCC was understood as a means to improve health, but some thought it was not important because they did not see the benefits
2. Response to PPCC services	
• Response to the “kelas catin”: considered good but there were criticisms regarding the physical layout and delivery method being stiff and not involving participants as well as limited time. • Respond to premarital health check-up: some were satisfied but most were dissatisfied due to negative attitude and lack of skill the health professionals (Aura superiority the health professionals were shown by the use of commanding language, ignoring the psychological aspects of the couple, not interacting equally between men and women, as well as the lack of information and time provided). • In addition, there were also concerns regarding unconducive environment (noisy, crowded and lack of privacy and confidentiality) dan financial pressure.	• Participants only received the premarital health check-up • Expressing dissatisfaction with the services provided due to several problems such as uncomfortable rooms (noisy, lack of privacy and confidentiality), cost burdens, as well as negative attitudes and lack of skills of health service providers (midwife exemplified a power differential, this was shown by the layout of the room, the midwife looking down on the woman, the minimal information given, the uncaring tone and lack of engagement)
3. Perceived benefits of PPCC services	
• Benefits perceived by women: improved knowledge, gained insight into gender relations, strengthen relationships, clinically and psychological benefits. • Benefits perceived by men: increased knowledge, gained insight into a husband and father's roles, helped develop a positive attitude about health, and clinical benefits	• Benefits perceived mainly by women: increasing knowledge, identifying and modifying women's health behaviour before pregnancy, and health benefits.
4. Couple’s aspirational needs	
• Men's involvement is considered a facilitator in PPCC services (increasing motivation and strengthening relationships)	• Men's involvement was considered a facilitator in PPCC services (helping men realise their roles and for a sense of equality)

• Aspects that need to be improved, such as the availability of adequate information about services, consistency in including men, the ability and readiness of health professionals to work with couples, and the adequacy of premarital health check-up	• The availability of accurate and easily accessible information was very necessary • The efficacy of the service needs to be proven to convince the importance of PPCC services
5. Role of social-cultural and religious beliefs	
• Men and women must carry out their respective duties based on gender roles determined by religion and social values. • The roles and behaviour of men and women are set by social and cultural values in the research context	• Men were considered superior to women but both should work together based on their roles • Marriage and having children were considered sacred because both should be carried out in consistent with social and religious norms
Themes from the service providers	
1. Context of PPCC services	
• The aim of PPCC services is to reduce the incidence of sexually transmitted diseases and chronic energy deficiency in children and the ultimate goal is to reduce maternal and child mortality rates • The role of the central government is to set national policies regarding PPCC services and local governments set service rates. • The service provider (Puskesmas) plays a role in making decisions regarding the availability of PPCC services and is responsible for implementing services in routine practice. • Limited funds mean not all couples to receive "kelas catin" services, and the cost of premarital health examination services is borne by the couples. • There was no established reporting and documenting system • There was no regular and structure evaluation • Pregnancy test requirements from the Islamic Religious Affairs Office	• The aim of PPCC services is to reduce the incidence of anaemia in pregnant women and chronic energy deficiency in children and the ultimate goal is to reduce maternal and child mortality. • PPCC service delivery in this context is influenced by a set of regulations, understanding and perceptions of health professionals at the service provider level, as well as other interrelated factors such as the role of the Office of Religious Affairs. • Limited funding leading to not everyone has equal access to PPCC • There was no established reporting and documenting system • Weak system of supervision and monitoring of PPCC service programs • Pregnancy test to determine marriage laws
2. Model of PPCC services	
• The health professionals prioritise promotive and preventive approaches and considering couples involvement in PPCC is important. • PPCC services are provided at community health centers (Puskesmas) under the coordination of the maternal and child health service unit • PPCC services are delivered based on local SOPs using the resources and infrastructure available at the Puskesmas. • The service target was couples • The process of providing PPCC services is mainly carried out by midwives and doctors and involves stakeholders (Religious and sub-district Offices).	• The health professionals prioritise services for pregnant women and for PPCC services the current focus is on women. • Preconception health was considered important by the health professionals and they understood the importance of male involvement, the current service priority was on pregnant women, PPCC services only focus on women due to limitations at the service provider level such as limited laboratory examination capacity • PPCC services are provided at community health centres

• The 'Kelas Catin' services involved the role of stakeholders (Kelurahan and religious affair office) • The package of the premarital health check-up service (a bundle of several health services) consisted of 1) health screening which includes assessment, physical examination (blood pressure, height, weight, and upper left arm circumference), laboratory examination; TT vaccination; 3) education and counselling; 4) clinical medical services. • Mental health examinations have not been carried out due to unavailability of assessment tools and no training for health professionals.	(Puskesmas) under the coordination of the maternal and child health service unit. • The process of providing PPCC services involves various disciplines (doctors, dentists, nurses and midwives) but the main actors are midwives and stakeholders (Religious and District Offices). • The service target was women • Stigma that prioritised services, not reproductive health, and the influence of strong socio-cultural and religious values such as the obligation to marry have helped shape service deliver • Mental health examinations have not been carried out because assessment tools are not available and there is no training for health professionals, as well as the stigma that mental health problems are considered as personal problems as therefore talking about it means exposing the family to disgrace
3. Facilitators, barriers and needs for optimisation	
• The facilitators included the willingness of the health professionals, the available facilities such as hall, laboratory, and the potential roles of parent. • Barriers to involving men include the time needed to attend, the financial pressure, and the men personalities. • The barriers to PPCC services identified which include lack of funding, time constraints, insufficient training and learning sources for the health providers, and lack of infrastructure. • Lack of support from stakeholders (religious affairs office and sub-district offices) • Lack of monitoring and supervision system. • There was a stigma in society that TT vaccination causes infertility • To overcome limited funds, this was done by collaborating with religious offices to organise 'Kelas Catin'. • There needs to be training, guidelines, availability of learning resources • The need for policy support from local governments to improve PPCC services and encourage cross-sectoral synergy • The service providers must be friendly, knowledgeable, and skilled • The costs of PPCC services must be borne by the government or included in national insurance	• There were more barriers encountered than facilitators in the implementation of the PPCC services at the Kenanga Puskesmas. • The barriers to PPCC services identified which include work culture, time and financial constraints, insufficient training and learning sources for the health providers. • The facilitators included well-equipped hall, laboratory facilities even with limited capacities, and the potential roles of parent. • Issues related to unwilling to spent time, financial burden, inadequacy of services, men's personalities, and feeling healthy were factors that were considered barriers for involving men. • Policy support regarding stakeholder involvement in PPCC services • Lack of monitoring and supervison system. • Real support from the central, regional or district/city government to increase financing, competency of service providers and supporting facilities.
4. Roles and values of being counsellors	

• Becoming a counsellor is not just a professional responsibility but also because of personal motivation (passion) and religious values (good deeds).	• Even though there are many challenges, being a counsellor is considered a valuable task because it is a professional responsibility and provides intrinsic rewards such as pride and inner satisfaction (emphatic)
Documentary Analysis:	
✓ According to the MoH 2014 and 2021, the central, regional and district/city governments are responsible for guaranteeing the provision of PPCC services and monitor and evaluate regularly ✓ The use of documents in routine services is adapted to the policies and needs of the Melati Puskesmas, thereby reinforcing the findings from interviews and observational data regarding variations in PPCC services across different Puskesmas. ✓ The implementation documents used at Kenanga Puskesmas were conceptualised and adapted to align with local goals, models, and interests, including fulfilling marriage requirements, particularly for Muslims. This indicates a lack of clarity in the implementation of national guidelines, resulting in varying service practices. ✓ Puskesmas are responsible for providing and delivering the PPCC services in routine practices. ✓ The existence of variations in documents used in routine practice indicates inconsistency with implementation regulations and guidelines. ✓ The transition period and the impact of COVID-19 seem to have slowed down the transition to MoH 2021 from the previous regulations.	

Appendix 27. Example of Selecting, Focusing, and Simplifying Process

A. Example of Selecting, Focusing, and Simplifying Process for Themes in Service User Findings

Case One	Case Two
Themes from the service users	
1. Knowledge and understanding about PPCC service	
• Lack of prior knowledge about the PPCC services due to limited information available • Participants self-reported increased knowledge after accessing the service, which includes health and religious topics • Some participants perceived that PPCC might provide health benefits.	• PPCC services were not well known due to limited exposure • Some participants self-reported increased their knowledge, but it was only limited to health preparation before pregnancy • While PPCC was understood as a means to improve health, some thought it was not important due to perceived lack of benefits

B. Example of Selecting, Focusing, and Simplifying Process for Themes in Service Providers Findings

Themes from the service providers	
5. Context of PPCC services	
• The aim of PPCC services is to reduce the incidence of sexually transmitted diseases and chronic energy deficiency in children, and the ultimate goal is to reduce maternal and child mortality rates • The role of the central government is to set national policies for PPCC services and local governments set service rates. • The service provider (Puskesmas) plays a role in making decisions regarding the availability of PPCC services and is responsible for implementing services in routine practice. • Due to limited funds, not all couples receive "Kelas Catin" services, and the cost of premarital health examination services is borne by the couples. • There was no established reporting and documenting system • There is no regular and structured evaluation • Pregnancy test requirements are mandated by the Islamic Religious Affairs Office	• The aim of PPCC services is to reduce the incidence of anaemia in pregnant women and chronic energy deficiency in children and the ultimate goal is to reduce maternal and child mortality. • The delivery of PPCC service in this context is influenced by a set of regulations, understanding and perceptions of health workers at the service provider level, as well as other interrelated factors such as the role of the Office of Religious Affairs. • Limited funding • There is no established reporting and documenting system • There is no regular and structured evaluation • Pregnancy test requirements from the Islamic Religious Affairs Office are used to determine marriage laws

Appendix 28. The Patterns Emerging from Cases One and Two

<table>
<tr><th>Dimensions</th><th>Case One</th><th>Case Two</th></tr>
<tr><td rowspan="4">Experience in receiving PPCC services</td><td colspan="2">Similarities</td></tr>
<tr><td colspan="2">- Not well-informed about PPCC services
- Responses to PPCC services were varied but generally less positive, with the main concerns regarding uncomfortable conditions, rooms and environments (cramped, noisy and crowded, and no counselling rooms), cost burden, limited laboratory capacity, gaps in access to services, unfriendly attitudes (lack of emotional support, respect and dignity), and lack of competence of health professionals in providing services (one-way communication, unclear delivery of information), and different ways of providing services, as well as pathways unclear reference.
- Women's and couples' perspectives on family health, marriage, and having children are influenced by socio-cultural and religious beliefs.
- Men's role in PPCC is still limited, yet they have a pivotal role in the family.</td></tr>
<tr><td colspan="2">Differences</td></tr>
<tr><td>- Men feel undervalued by health professionals as they are ignored and not involved.
- Both men and women perceived many health benefits from accessing PPCC services and expressed that men’s involvement increased relationships.</td><td>- Some men do not perceive benefits from their involvement.
- The benefits are felt directly, especially by women.</td></tr>
<tr><td colspan="3">Initial synthesis 1:

Across both cases, users were generally less familiar with PPCC; they reported a less favourable experience with the services, often citing issues like unstructured service delivery, inadequate facilities, and unequal access. Many expressed that service quality was affected by inconsistent attitudes and behaviours of health professionals. However, users who participated as couples had a more positive experience, as the involvement of both partners contributed to stronger relational and health benefits. Despite social norms that limit men’s involvement in maternal health, this context—where religious and cultural beliefs position men as central figures in the family—suggests a potential for expanding men’s roles in supporting couples’ pre-pregnancy health and strengthening relationships.</td></tr>
<tr><td rowspan="2">Management and organisation of</td><td colspan="2">Similarities</td></tr>
<tr><td colspan="2">- Lack of coordination and communication of PPCC managers.</td></tr>
</table>

<table>
<tr><td>PPCC services</td><td>
- Most of the responsibility for providing PPCC services lies with the Puskesmas.
- Not all PPCC providers are aware of existing regulations and guidelines.
- There is no established reporting and recording system.
- Limited funds for ‘Kelas Catin’; women/couples have to pay service fees to access premarital health check-ups.
- The TT vaccination program for prospective brides and grooms involves the roles of the Ministry of Health and the Ministry of Religion.
- The regional policy includes pregnancy tests, which was rooted in Islamic values, in the PPCC service package.

Differences

- PPCC services are considered as important as other services for mothers and children by health professionals.
- Preconception services are given less priority than services for other mothers and children by health professionals.

Documentary Analysis:
✓ The new policy emphasises the important role of men, provides clear information about the provision of PPCC services, including mental health examinations, and is accompanied by implementation guidelines at the practice level.
✓ Puskesmas are responsible for providing and delivering PPCC services in routine practices.
</td></tr>
<tr><td colspan="2">Summary:

The organisation and management of PPCC services in both cases revealed substantial gaps, characterised by weak coordination among providers, limited oversight and monitoring, inadequate funding, and varying interpretations of PPCC services among health professionals. Additionally, the integration of sociocultural practices, deeply rooted in Islamic values, underscores the influence of religious organisations. These values shape both the approach and expectations for service delivery, indicating that effective PPCC management in this context requires a nuanced understanding of these cultural dynamics.</td></tr>
<tr><td>Provision of PPCC services</td><td>
Similarities
- The management and implementation of PPCC services are regulated by Minister of Health Regulation No. 97 of 2014, which was later updated to No. 21 of 2021.
- PPCC services are provided based on local SOPs using available resources and infrastructure.
- PPCC consists of two types of services: ‘Kelas Catin’ and premarital health check-ups, delivered using educational counselling and a simple clinical approach.
- Service delivery involves the roles and relationships between District Health Offices, Puskesmas, Religious Affairs Offices,
</td></tr>
</table>

	village officials, health cadres, community members, and women/couples. - National PPCC guidelines mandate the provision of comprehensive services and emphasise the importance of involving men. However, implementation varies among service providers depending on the available infrastructure, the understanding of health professionals in implementing PPCC services, and each health centre's needs. - Infrastructure and facilities are limited, with examples including inadequate laboratory testing capacity and insufficiently equipped rooms for premarital health check-ups. - The examination focuses on the physical aspect. - There are poor service delivery systems and mechanisms, including a lack of appropriately trained health professionals and insufficient infrastructure, such as uncomfortable rooms for premarital health check-ups and limited laboratory capacity. - PPCC services are part of the marriage application process. - The role of a counsellor is interpreted as a professional responsibility, as well as a humanitarian and religious duty.
	Differences
	- The service model involving couples - The service model focusing on women
	Documentary Analysis: ✓ The fee for a premarital health check-up is determined by local governments, leading to variations in service and costs. ✓ There are inconsistencies in the documents used in routine practice. ✓ The transition period and the impact of COVID-19 appear to have delayed the shift from the previous regulations to those outlined in MoH 2021.

Summary:

While PPCC service provision generally follows national guidelines, it is adapted locally to meet specific needs through a multisectoral collaboration involving education, counselling, and basic health checks. Nonetheless, these services often lack consistent structure and comprehensive scope, particularly regarding men's involvement, the content of health examinations, and the standardisation of documents. This inconsistency may stem from differing perspectives among health professionals about the role and scope of PPCC, as well as the transitional phase of national policy. The provision of PPCC services is also tailored to local cultural and religious contexts, including religiously aligned counselling and premarital health checks, reflecting how preconception services are embedded with cultural and religious significance in this setting.

Access to PPCC services	**Similarities**
	- The obligation to cover the cost of premarital health examination services from personal finances is perceived as burdensome by some women and couples. - The provision of "Kelas Catin" services is constrained by limitations in the number of available sessions, duration, and scope, which means that not everyone has equal access to PPCC. - Some individuals expressed barriers associated with geographical constraints and busy schedules such as work - Patriarchal system may limit men's involvement - The societal stigma surrounding issues such as vaccination and mental health poses additional barriers.
	Differences
	No differences

Summary:

Access to PPCC services remains limited due to several barriers, including inadequate funding, the financial burden on users, uneven service availability, geographic challenges, and cultural factors. These constraints result in significant inequalities in service access, highlighting the need for more structured, accessible, and equitable service delivery models that consider the socio-economic and cultural landscape.

Appendix 29. Dissemination Done and Publication Plan

A. Dissemination Done

No	Time	Name of Event	Description
1.	5 May 2021	Celebration of International Midwife Day	I presented the novel research proposal at an online event hosted jointly by UNISA University, Indonesia, and the School of Healthcare, University of Leeds, UK. Approximately 200 participants attended the presentation.
2.	25 November 2022	Visiting program by master's students in midwifery from UNISA University, Yogyakarta, Indonesia to the University of Leeds.	I presented the results of this PhD study at the International Practice Project (IPP).
3.	9 March 2023	The presentation was part of the theme group 'Global Research in the Faculty of Health: Examples from Today's PhD Students,' facilitated by Professor McGowan	I was invited to provide a guest lecture to discuss my research with undergraduate midwifery students during their module on Global and Cultural Insights into Maternal Health, the University of Leeds. This module is designed to ensure students understand global organisations and frameworks that address maternal mortality rates, particularly in Low and Middle-Income Countries (LMICs), and aim to enhance women's health and protect their rights during the prenatal period, childbirth, and postpartum

B. Publication Plan

Source	Target Audience	Message	Channel
Researchers	Professional or academic researchers, and healthcare staff in the field of preconception care services	Using scoping review to characterise research on preconception intervention and models of services at LMUICs.	Submission for publication in relevant scientific journals – examples are; 1. BMC Pregnancy and Childbirth Journal 2. International

			Journal of Evidence-Based Healthcare
Researchers	Professional or academic researchers, and healthcare staff in the field of preconception care services	Using a qualitative comparative case study design to explore experiences in premarital preconception care services from the perspective of both service providers and users in Indonesia.	Submission for publication in relevant scientific journals – examples are; 1. BMC Pregnancy and Childbirth Journal 2. Journal of Psychosomatic Obstetrics and Gynecology Midwifery 3. Midwifery Journal
Researchers	Professional or academic researchers, and healthcare staff in the field of preconception care services	1. The values of couple's involvement in premarital preconception care services in improving couple's pre-pregnancy health in Indonesia 2. The unique role of socio-cultural and religious beliefs in the provision of pre-marital preconception care services in Indonesia	Abstract submission for presentation at relevant conferences indexed by Scopus in 2025.
Researchers	Peers in affiliation institution (UMS)	Sharing experiences in conducting a qualitative comparative case study design to investigate PPCC service from the perspective of both service users and providers: data collection methods, managing extensive data, analysing data, presenting and interpreting data.	Internal workshops and teaching on undergraduate and postgraduate courses in the UMS faculty of health sciences.
Researchers	Professional networks e.g. nursing,	Key implication of this PhD study for practice, training,	Scientific meetings or discussions, webinars, and oral presentation.

	midwives public health, nutritionists, doctors, psychologists, religious experts, and cultural experts.	and education, as well as for future research.	
Researchers	Professional networks e.g. nursing, midwives public health, nutritionists, doctors, psychologists, religious experts, and cultural experts.	The uniqueness of preconception services in Indonesia	Social media and other online platform: facebook, google scholar, SINTA (Science and Technology Index)