Stigmatised, Marginalised, Excluded: A Multilevel Investigation of Migrant Mental Health Disparities

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September 2025

Abstract

This thesis investigates migrant mental health disparities through a multilevel lens informed by the Social-Ecological Model (SEM). While migration is often associated with increased risks of depression, anxiety, and trauma-related disorders, these outcomes are shaped not only by individual vulnerabilities but also by social relationships, post-migration conditions, and structural barriers.

The thesis adopts a multi-method design comprising a secondary data analysis of European populations, a scoping review of perinatal mental health among forced migrant women, a policy review of UK resettlement frameworks for Afghan and Ukrainian forced migrants, and an integrative discussion supported by a foundational chapter and a reflective chapter. Together, these components provide a layered account of how stigma, marginalisation, and exclusion operate at micro-, meso-, and macro-levels to shape migrant mental health.

The findings show that migrants experienced elevated risks of depression, with poorer outcomes associated with factors such as poor health, socioeconomic disadvantage, limited social support, and barriers to accessing care. Forced migrant women during the perinatal period emerged as a particularly vulnerable subgroup, with elevated rates of depression, anxiety, and post-traumatic stress disorder, alongside significant barriers to support. The policy review further showed that differences in resettlement policy shaped post-migration conditions relevant to mental health, including access to housing, healthcare, legal certainty, and social support.

By integrating these strands, the thesis offers a multilevel account of how migrant mental health disparities are produced and sustained across different domains of life. It demonstrates that migrant mental health cannot be addressed through clinical intervention alone, but requires action across social, service, and policy contexts. The thesis concludes by offering evidence-based recommendations for more culturally sensitive care, targeted support, improved data systems, and more equitable policy responses. Ultimately, it argues that recognising migrants in health and social systems is essential for dismantling the processes of stigma, marginalisation, and exclusion that underpin mental health inequalities.

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Preface

Rationale for the thesis

Migration, including both voluntary and forced migration, remains a global humanitarian and public health concern (Abubakar et al., 2018; WHO, 2018). Individuals who migrate may face numerous hardships such as acculturative stress, discrimination, and socio-economic disadvantage. Those who have been forcibly displaced, including refugees and asylum seekers, experience additional challenges arising from conflict, persecution, and forced displacement itself (Silove et al., 2017). These experiences have profound implications for mental health, including elevated risks of depression, anxiety, and trauma-related disorders (Steel et al., 2009).

Uncertainty in legal status, language barriers, and limited access to services can further complicate the pursuit of adequate healthcare, compounding psychological stress (Priebe et al., 2016). While considerable research has established that migrants may experience poorer mental health relative to host populations (WHO, 2025; Blackmore et al., 2020), important gaps remain in understanding how these disparities are produced. Individual, social, and structural factors may each play a role, yet the interactions between them remain complex and relatively underexplored.

This thesis examines disparities in mental health outcomes both between migrant and non-migrant populations, and within different migrant groups themselves, with particular attention to the distinct vulnerabilities faced by forced migrants. In particular, it considers three related contexts: migrant and non-migrant populations in Europe, forced migrant women during the perinatal period, and forced migrants affected by UK resettlement policies, with Afghan and Ukrainian forced migrants used as comparative case studies. Through a multilevel approach combining a foundational chapter, a quantitative secondary data analysis, a scoping review, and a policy analysis, the thesis explores how processes of stigma, marginalisation, and exclusion operate across individual, social, and structural levels to shape mental health risks in these populations.

Researcher positionality

My Ph.D. thesis on migrants' mental health has been shaped profoundly by my own experiences. I have lived through multiple displacements before arriving in the UK to begin this doctoral journey. Those experiences, along with the uncertainty of forced migration, provided first-hand awareness of the emotional and psychological toll that displacement can take on individuals and families. This aligns with a growing body of research highlighting how forced migration can disrupt multiple levels of psychosocial functioning and contribute to heightened vulnerability to mental illness, particularly in the context of uncertainty, displacement, and loss (Silove et al., 2017). Witnessing how mental health struggles often go unaddressed when formal support systems and familiar networks are absent led me to concentrate on the mental health challenges and mental health needs of migrant populations. Migrants often face multilevel barriers to mental health care, including stigma, legal uncertainty, and poor cultural responsiveness in services (Priebe et al., 2016).

I was born in Afghanistan in 1993, during a time when my country was torn apart by war. My earliest memories are those of displacement, though I was too young to fully grasp the magnitude of my family's forced migration. Fleeing to Pakistan as an infant, my family sought refuge from the chaos that had engulfed Afghanistan. We remained in exile until the fall of the previous Taliban regime in 2001, at which point we cautiously returned, believing that perhaps stability had returned to our homeland. However, history had other plans.

In 2021, the world watched as the Taliban once again seized control of Afghanistan, and for me, the cycle of forced migration began anew. This time, I was no longer a child caught in the tide of displacement but an adult, responsible not only for my own future but also for my wife's. As Kabul fell, we were forced to flee, once again crossing into Pakistan in search of safety. The weeks that followed were some of the most agonising of my life. We were stranded in Pakistan for 48 days, living in a constant state of uncertainty. Every day was a waiting game, filled with anxiety, fear, and the ever-present question: would we be sent back to Afghanistan? Our visas to remain in Pakistan were only valid for two months. My Ph.D. admission in the UK had been my only ticket out, but waiting for our visas was excruciating. Luckily, we obtained

our UK visas just before the end of two months. The fragility of our circumstances made it clear that our journey to the UK was not simply an academic pursuit; it was an escape from danger, an act of survival.

When we finally arrived in the UK, relief was quickly overshadowed by new struggles. With no immediate place to stay, we lived in hotels for nearly a month before securing 'stable' housing. This period coincided with the start of my Ph.D. programme, which only deepened my stress. While other students settled into their academic routines, I was battling logistical uncertainties, struggling to catch up with my academic milestones while navigating the unfamiliar bureaucratic systems of a new country. The scholarship I had received from the University of York alleviated some of our financial worries, but the emotional weight of forced migration was not easy to make go away. At the same time, I could not shake the constant anxiety about my family, who were still in Afghanistan under an increasingly oppressive regime. While my body was in the UK, my mind was split between two worlds: one of academic obligations and another of looming fear for those I had left behind. Research has shown that mental health struggles in forced migrants are not necessarily resolved upon arrival but can persist through post-migration stressors such as integration difficulties, family separation, and cultural dislocation (Lindencrona et al., 2008).

Looking back, I realise that the experience of forced migration did not end with our arrival in the UK. It merely changed form. In Afghanistan, we lived with the fear of persecution and violence. In Pakistan, we endured the agony of waiting, the uncertainty of whether we would be granted visas or sent back. In the UK, the struggles were different but no less real: loneliness, psychological distress, and the weight of an unfamiliar society, where my wife and I had no safety net beyond each other.

Around August 2024, anti-migration riots broke out across parts of the UK. Hotels housing asylum seekers were attacked, windows smashed, and tensions ran high as police clashed with rioters (Reuters, 2024). Although the unrest lasted only a short time, the impact on us felt immediate and profound. The hostility and confrontations we faced during that time were deeply unsettling. We had already been carrying the burden of displaced lives, so encountering open displays of discrimination and xenophobia felt particularly challenging. My

wife, alarmed by the sheer spitefulness of these demonstrations, began to seriously consider an improbable idea: returning to Afghanistan despite the life-threatening risks that had driven us out in the first place. The intensity of her reaction underscored how quickly a sense of relative safety could be shaken.

Amidst this turbulence, life took an unexpected turn. We found that we were expecting a child. The news was a moment of pure joy, but it came with a heavy mix of emotions. We were thrilled, yet deeply anxious. My wife and I were alone in a foreign country, far from our families, and without the traditional support networks that most expecting parents rely on. In many ways, her pregnancy became symbolic of our migration journey, an experience marked by hope, resilience, and overwhelming uncertainty.

The UK healthcare system provided us with excellent maternity care. The doctors and midwives were supportive, and in terms of medical attention, my wife received good services. However, this may largely be because we both had the advantage of speaking English fluently, which allowed us to communicate effectively with healthcare providers, navigate the system with relative ease, and advocate for my wife's needs. But I was fully aware that for many other migrants, this was not the case. Language barriers can create an entirely different experience, one where access to care is hindered, crucial information is lost in translation, and patients feel less confident in making decisions about their own health (Olani et al., 2023). Linguistic exclusion is a well-documented barrier that can complicate access to health information and affect the quality of healthcare (Satinsky et al., 2019).

Yet, despite receiving good medical care, something was missing, something that no healthcare system could provide. The absence of family, friends, and a strong social support system during this life-changing period was deeply isolating. Pregnancy is often a time when women lean on their mothers, sisters, and close friends for emotional and physical support. For my wife, there was no one. No familiar faces to reassure her, no home-cooked meals from loved ones, no shared excitement from relatives eagerly awaiting the baby's arrival. It was just the two of us, navigating this immense transition on our own. I tried to be there for her in every way I could, but I, too, was struggling. The demands of my Ph.D. were relentless, and I

found myself torn between academic deadlines, financial worries, and my responsibility as a husband and soon-to-be father.

After childbirth, the lack of support became even more apparent. Sleepless nights, exhaustion, and the sudden, overwhelming responsibility of caring for a newborn without any help took a significant toll on both of us. For my wife, it was especially devastating. She sought mental health support through the NHS, hoping to find guidance and relief, but after a few sessions, she found it neither practical nor helpful. The advice felt generic, lacking the cultural understanding and tailored support that she truly needed.

These experiences deepened my awareness of the psychological consequences of migration and of the ways in which displacement, uncertainty, isolation, and limited support can shape mental health and well-being. More importantly, they reinforced my conviction that migrant mental health must be understood not only through structural and policy frameworks, but also through the lived realities of exile, family life, and the everyday challenges of rebuilding a life in unfamiliar surroundings.

Aims and objectives

The primary aim of this thesis is to investigate the mental health challenges experienced by migrants, and to identify the key drivers behind these challenges, with particular attention to the heightened vulnerabilities of forced migrants. More specifically, the thesis aims to:

- Investigate, through quantitative secondary data analysis, differences in depression prevalence and depression severity between migrant and non-migrant populations in Europe.
- Examine, through quantitative secondary data analysis, how sociodemographic, social, and structural factors intensify or mitigate depression-related mental health risks among migrant and non-migrant populations in Europe.
- Synthesise current evidence, through a scoping review, on perinatal mental health among forced migrant women, including prevalence, risk and protective factors, barriers to care, and research gaps.
- Evaluate, through policy analysis, how key UK resettlement policies shape post-migration conditions relevant to forced migrants' mental health, using Afghan and Ukrainian resettlement policies as comparative case studies.
- Identify, across the thesis as a whole, the multilevel factors shaping the mental health outcomes examined among migrant and forced migrant populations.
- Generate evidence-based recommendations for improving healthcare access, mental health interventions, and policy frameworks relevant to migrant and forced migrant populations through the integration of findings across the thesis.

Research questions

To achieve these aims, the thesis engages with the following key research questions, which are mapped across the Social-Ecological Model (SEM) and synthesised in the final discussion chapter (**Figure 1**):

1. What differences in depression prevalence and depression severity are observed between migrant and non-migrant populations in Europe? (Addressed in Chapter 2)
2. Which sociodemographic, social, and structural factors intensify or mitigate depression-related mental health risks among migrant and non-migrant populations in Europe? (Addressed in Chapter 2)
3. What is currently known in the global literature about the prevalence, risk and protective factors, barriers to care, and key research gaps in perinatal mental health among forced migrant women? (Addressed in Chapter 3)
4. In what ways do UK resettlement policies shape post-migration conditions relevant to forced migrants' mental health, and how do these policies differ in their treatment of Afghan and Ukrainian forced migrants? (Addressed in Chapter 4)
5. What multilevel factors emerge across the thesis as shaping the mental health outcomes examined among migrant and forced migrant populations? (Synthesised in Chapter 5)
6. What recommendations for research, policy, and practice emerge from synthesising findings across the Secondary Data Analysis, the Scoping Review, and the Policy Review? (Synthesised in Chapter 5)

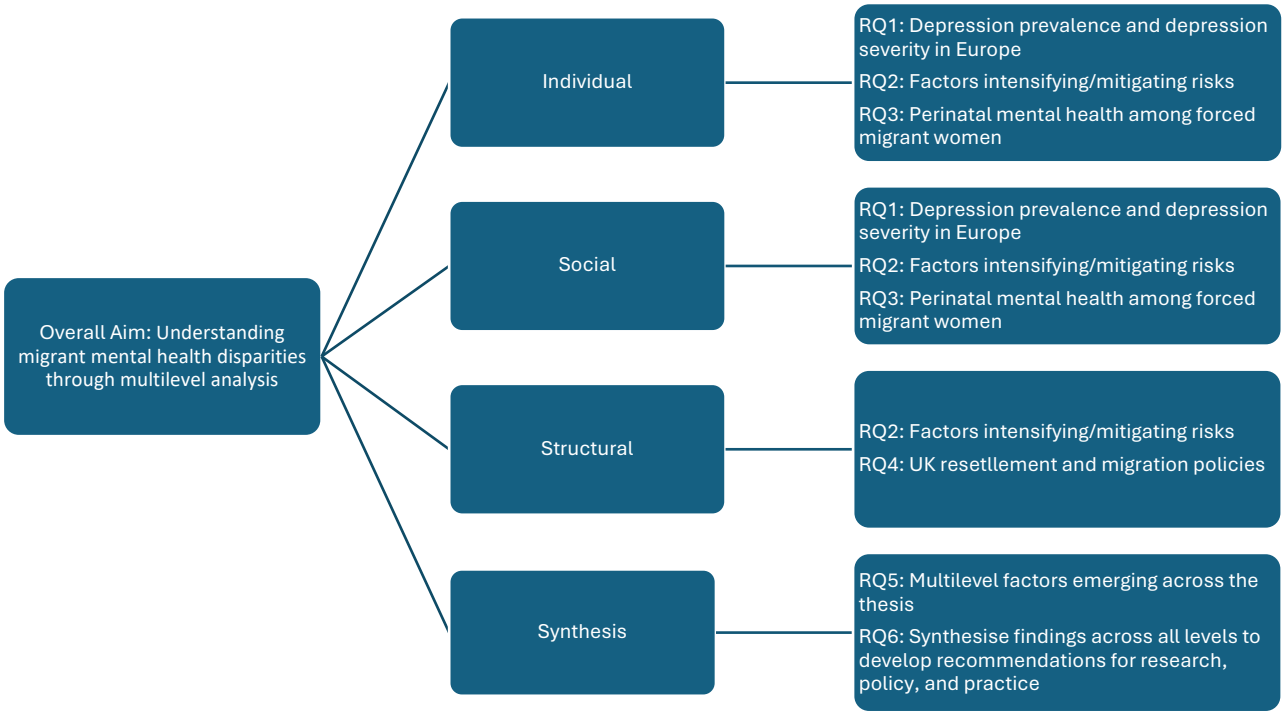


Figure 1 | Research questions mapped to Social-Ecological Model levels within the thesis framework.

Navigating this thesis

This thesis argues that migrant mental health disparities arise from the intersecting influences of individual, social, and structural factors that generate processes of stigma, marginalisation, and exclusion. By adopting a multilevel approach, the thesis presents a comprehensive understanding of these disparities through a foundational chapter, a secondary data analysis, a scoping review, a policy review, a final discussion chapter, and a reflective chapter.

The thesis is composed of six chapters, each contributing a distinct perspective on how migration intersects with mental health:

1. **Foundational Chapter (Chapter 1):** Lays the groundwork for understanding the broader context of migration and mental health, with particular focus on forced migration. It introduces conceptual frameworks, including the Social-Ecological Model, to explain why migrants may experience heightened psychological distress, and uses this model to outline three levels of analysis (individual, social, structural) that guide the thesis.
2. **Secondary Data Analysis (Chapter 2):** Draws on large-scale European data to assess depression prevalence and depression severity among migrant and non-migrant populations. It provides broader insights into how migration status relates to mental health indicators, identifying potential risk and protective factors at individual, social, and structural levels.
3. **Scoping Review (Chapter 3):** Focuses on perinatal mental health among forced migrant women. It synthesises evidence on prevalence, risk and protective factors, barriers to care, and research gaps, highlighting a particularly vulnerable subgroup.
4. **Policy Review (Chapter 4):** Examines how UK resettlement policies shaped post-migration conditions for Afghan and Ukrainian forced migrants. It considers how policy frameworks though not always directly targeting mental health, operate at the structural level in ways that can have major implications for individuals' mental health and well-being.

5. **Discussion Chapter (Chapter 5):** Synthesises findings from the preceding chapters to examine how migrant mental health is influenced by interacting individual, social, and structural factors. It positions the findings within the existing literature, evaluates strengths and limitations, and identifies implications for research, policy, and practice.
6. **Reflective Chapter (Chapter 6):** Provides a methodological reflection on the research process, ethical challenges, and personal insights gained throughout the research process. It discusses obstacles such as data availability and participant recruitment, explaining how these constraints prompted adaptations in the thesis design.

The penultimate Discussion Chapter integrates these insights, proposing pathways to more equitable, culturally sensitive mental health care for migrant populations, and highlighting implications for those going through pregnancy and motherhood in the context of forced migration. Through this comprehensive approach, the thesis contributes valuable evidence to inform research, policy, and practice in migrant mental health.

Acknowledgements

This Ph.D. journey has been a long and challenging one, marked by both professional and personal growth. I am deeply grateful to the many people who have supported me throughout this process.

To begin, I would like to express my deep appreciation to my supervisors, Dr. Amanda Mason-Jones and Ms. Ada Keding, whose guidance, patience, and encouragement have been instrumental in completing this research. Their expertise and feedback have helped me navigate the complexities of this project, especially during moments when I faced setbacks and challenges. Without their continuous support and dedication, this thesis would not have been possible.

I am also immensely thankful to my thesis advisory panel members, Marie-Clare Balaam and Dr. Sarah Blower, for their insightful contributions and constructive feedback during the different stages of my Ph.D. Their commitment to my progress has been a source of motivation and has enriched the quality of this thesis.

On a personal note, I owe a deep debt of gratitude to my family: to my wife, Mariam, whose unwavering support, understanding, and patience have been essential during the most stressful times; and to my parents and my wife's parents, for their constant encouragement and belief in me, as well as their invaluable support throughout this journey.

A special acknowledgement goes to my two-year-old son, Yusuf, who was born in the midst of my Ph.D. journey. His presence has been a source of pure joy and motivation, reminding me of the bigger picture and giving me the strength to persevere, even when balancing research and family responsibilities became challenging.

I would also like to express my sincere gratitude to the University of York for providing me with a Ph.D. scholarship that made this research possible. The financial support was invaluable, enabling me to dedicate myself fully to my studies and pursue my research interests without financial burden. I am thankful for the trust and investment the university placed in me.

Lastly, I wish to thank all those who contributed to and supported this study, including the organisations, communities, and individuals who offered their time and resources. Their involvement and openness were invaluable and greatly enriched this research journey.

Thank you all for your incredible support and encouragement. This accomplishment is as much yours as it is mine.

Author's declaration

I declare that this thesis is a presentation of original work and I am the sole author. This work has not previously been presented for a degree or other qualification at this University or elsewhere. All sources are acknowledged as references.

Material from this thesis has been prepared and submitted for publication. A condensed version of the scoping review presented in Chapter 3 has now been published in the International Journal of Public Health (DOI: https://doi.org/10.3389/ijph.2026.1608845) (Aria et al., 2026). The secondary data analysis described in Chapter 2 is being developed into two separate manuscripts focusing on depression prevalence and depression severity. In addition, the policy review in Chapter 4 is also in preparation for journal submission. All manuscripts are being tailored to the specific guidelines and word count requirements of the relevant journals.

1 Foundational Chapter: Understanding Forced Migration and Global Health Perspectives

1.1 Chapter overview

This chapter provides a comprehensive exploration of migration, starting from the fundamental definitions and classifications of migration to its historical development and contemporary implications. The discussion begins by examining how migration has been defined over time by various scholars, highlighting the challenges of arriving at a universally accepted definition. It then outlines key types of migration, including internal and international migration, voluntary and forced migration, and categories such as refugees, asylum seekers, and internally displaced persons, in order to clarify the different forms that migration can take.

Next, the chapter delves into the drivers of migration, exploring key push and pull factors such as violence, socioeconomic status, political instability, corruption, and environmental challenges. Following this, global trends in forced migration are explored in detail, with a focus on refugees, asylum seekers, and internally displaced persons. Attention is then given to the health risks associated with migration and forced displacement, particularly the general health and mental health challenges that disproportionately affect this group.

A substantial portion of the chapter is dedicated to the mental health implications of migration, with an emphasis on the prevalence of disorders such as depression, anxiety, post-traumatic stress disorder (PTSD), psychosis, and substance use disorders. These are discussed in relation to the various phases of migration: pre-flight, during flight, and post-flight. Barriers to accessing mental health care, such as language difficulties, cultural understandings, stigma, and discrimination, are also examined alongside approaches to improve access to care.

The chapter then narrows its focus to vulnerable subpopulations in the migration context, particularly women. It examines migration and forced displacement among women, before discussing maternal health and perinatal mental health among migrant and forced migrant women. Finally, the chapter introduces the Social-Ecological Model (SEM) as the central theoretical framework guiding the thesis, and shows how it will be used to examine migrant mental health across individual, social, and structural levels.

1.2 Migration

1.2.1 Introduction – What is migration?

According to the International Organization for Migration (IOM), the term migration is defined as "*the movement of persons away from their place of usual residence, either across an international border or within a State*" (IOM, 2022, p. 1449). This definition, commonly used in modern international contexts, is essential for agencies like IOM because it emphasises the geographical movement of people without making strict distinctions between internal and international migration. However, using this definition, it is difficult to understand who qualifies as a migrant. Furthermore, it raises questions such as: If people move from one house to another within the same city, do they become migrants? How long should individuals be away from their 'usual residence' before they are considered migrants?

A substantial amount of literature has been published on the concept of migration. Nonetheless, there is little to no consensus on a universal definition of migration in the scientific world.

In earlier migration studies, Lee (1966) defined migration as a "*permanent or semipermanent change of residence*" (Lee, 1966, p. 49). Lee's definition reflects a focus on long-term mobility, particularly in economic migration, where individuals or groups sought better living conditions or job opportunities. However, he argues that not all sorts of spatial mobility are considered migration. Recurrent movements of nomads or short-term seasonal movements, in his view, do not constitute migration (Lee, 1966). This is reflective of his emphasis on settlement and economic gain rather than temporary movements. Similarly, Eisenstadt (1953) contextualised migration within broader social changes, viewing it as a "*physical transition from one society to another*", usually in groups (Eisenstadt, 1953, p. 169).

Zelinsky (1971) described migration as a "*spatial transfer from one social unit or neighborhood to another, which strains or ruptures previous social bonds*" (Zelinsky, 1971, pp. 225-226). His definition highlights the social consequences of migration, which can often include the breakdown of community ties. In his opinion, there is an element of permanent or semi-

permanent change in people's residence for it to be called migration and not '*circulation*'. He defined circulation as recurrent and short-term movements that do not follow permanent change in one's residence (Zelinsky, 1971). For example, going on holidays, commuting to and from work, shopping, and business trips – these were labelled circulation because they lacked the long-term societal disruption that migration entails (Zelinsky, 1971). Zelinsky's contribution to the migration discourse was to distinguish between temporary and permanent forms of mobility. In the same vein, Rubenstein (2018), in his book, distinguishes between migration and cyclical and short-term movements (circulation), and he defines migration as a permanent move to a new place (Rubenstein, 2018).

In 1985, Ghosh wrote in his book, *Fundamentals of Population Geography*, that the act of migration is not merely the shift of one's house, but rather of their home. He further noted that the change of residence in migration is for "*almost a long, stable period*", and may also include crossing political boundaries (for example, crossing of international borders, state lines, etc.) (Ghosh, 1985, p. 34). In his book, however, there is no clarification of how many years or months is considered a long and stable period. Ghosh's view reflects population movements that took place in the post-colonial world, where migration often meant relocation to entirely new socio-political environments. His inclusion of political boundaries is particularly significant, as it addresses the geopolitical factors that drive migration, such as wars, independence movements, and newly established national borders (Ghosh, 1985).

More recently, Weeks (2020) adopted the definition from Goldscheider (1971) which defines migration as the "*detachment from the organization of activities at one place and the movement of the total round of activities to another*" (Goldscheider, 1971, p. 64) and called it a permanent change in one's residence (Weeks, 2020). According to Weeks, leaving your room, commuting to and from work, seeking temporary paid work in another country, and even the permanent change of residence to a nearby location without changing your round of activities are examples of mobility (circulation) and not migration (Weeks, 2020). Similar is the idea of Clark (1985), who defined migration as "*a change of residence that disrupts the basic ties with the local community and is a move that prevents commuting at least at any reasonable cost*" (Clark, 1985, p. 17).

Migration is a term frequently used in the literature, but to date there is no consensus amongst the scholars about the definition of this term. There is currently no universal definition of migration that can apply to all different situations. This shows a need to be explicit about what exactly is meant by the term migration. However, it is beyond the scope of this thesis to identify the most appropriate definition for migration.

1.2.2 Types of migration

Although many studies have classified migration using different criteria, there is a broad consensus in the literature on these classifications. These distinctions are important because migration is not a single, uniform phenomenon. People may move within or across borders, voluntarily or under coercive circumstances, and with very different legal statuses and entitlements. Clarifying these categories at the outset helps to distinguish between different migration experiences and the forms of vulnerability that may accompany them.

Most studies classify migration into two main groups: internal and international migration, both of which involve crossing some form of political boundary. Internal migration refers to movement within a country (e.g., crossing a state or regional border), while international migration involves crossing a national border (Weeks, 2020; Rubenstein, 2018; Ghosh, 1985). People migrating into a country are referred to as immigrants, whereas those leaving a country are termed emigrants (Rubenstein, 2018).

Internal migration refers to the permanent relocation of an individual or individuals within the same country. It can be further divided into two categories: interregional migration and intraregional migration. Interregional migration refers to movement from one region to another within the same country, such as rural-to-urban migration. In contrast, intraregional migration refers to movement within the same region (Rubenstein, 2018).

Another widely used classification distinguishes between voluntary migration and forced migration (Erdal and Oeppen, 2018). Voluntary migration occurs when individuals or groups make a conscious decision to relocate. By contrast, forced migration refers to situations in which people are displaced against their will due to extreme circumstances such as war,

persecution, and natural disasters (Chatty, 2013). Importantly, the literature also highlights a distinctive overlap between voluntary and forced migration, as many migrants may experience elements of both throughout their journeys (Bakewell, 2021; Erdal and Oeppen, 2018).

The International Organization for Migration (IOM) defines displacement as follows:

"*The movement of persons who have been forced or obliged to flee or leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict, situations of generalized violence, violations of human rights or natural or human-made disasters*" (IOM, 2022).

The term displacement is an umbrella term used to describe various forms of involuntary or forced population movements due to a range of factors. These movements can occur either within the country of residence or across international borders.

Displacement is typically divided into the following main categories:

Refugees: A refugee, as described in the '1951 United Nations Convention relating to the status of refugees' is someone who has fled their country of nationality and is unable or unwilling to return due to a "*well-founded fear*" of persecution based on race, religion, nationality, membership of a particular social group, or political opinion (UNHCR, 2019).

Asylum seekers: An asylum seeker is a person seeking international protection but whose claim for refugee status has not yet been determined (UNHCR, 2006).

Internally displaced persons (IDPs): IDPs are individuals forced to flee their homes due to armed conflict, generalised violence, human rights violations, or natural and human-made disasters. However, they remain within their country's borders and do not cross into another state (UNHCR, 2004).

Other populations of concern: In addition to refugees, asylum seekers, and IDPs, other groups affected by forced migration may include Venezuelans displaced abroad, undocumented

immigrants, unaccompanied minors, and stateless people, all of whom have been forced to leave their homes for various reasons (UNHCR, 2021b).

Migration can also occur in the form of irregular migration, also referred to as undocumented, unauthorised, or illegal migration, which is defined as migration that occurs "*outside of the legal-institutional frameworks established by states*" (Baldwin-Edwards, 2008, p. 1449).

1.2.3 History of human migration

> *"The impulse to migrate is inherent in human nature – an instinctual and inborn disposition and inclination to wonder and to wander in search of new opportunities and new horizons. Indeed, the separation of the human species into its myriad ethnic, cultural, linguistic, and racial groups was – and remains – an outcome of migration" (Marsella and Ring, 2003, p. 3).*

The history of human migration is not a recent phenomenon. The history of human migration can be traced back as far as 2.5 million years, when the extinct members of the genus *Homo*, e.g., *Homo erectus* and Neanderthals, scattered across Africa and then into Eurasia (Bellwood, 2014). It is believed that before they went extinct, *Homo erectus* had migrated through Southeast Asia, eventually reaching regions as far as Indonesia and China (Groeneveld, 2017).

As we move closer to anatomically modern humans—our ancestors from the species *Homo sapiens*, who had a similar appearance to modern humans with a rounded skull, there is a large body of published archaeological and genetic studies providing substantial evidence that *Homo sapiens* first originated in Africa (Nielsen et al., 2017; Jakobsson et al., 2008; Ramachandran et al., 2005; McDougall et al., 2005; White et al., 2003; Stringer, 2002; Cann et al., 1987). Although some previous models suggested a non-African, multiregional origin for *Homo sapiens* (Wolpoff, 2020; Wolpoff et al., 1994; Thorne and Wolpoff, 1992), more recent studies using mitochondrial DNA (mtDNA) sequencing link the origin of modern humans to a single source in Africa (Stoneking, 1993; Hedges et al., 1992; Vigilant et al., 1991).

Migration has played a major role in the dispersal of *Homo sapiens* across the globe. Current evidence suggests that *Homo sapiens* began migrating out of Africa approximately 120,000 years ago, successfully spreading across all continents except Antarctica by around 10,000 years ago (Bellwood, 2014). This rapid and far-reaching spread is often described as one of the most remarkable achievements of any species. As McNeill (1984) notes in his paper, "*No dominant species had ever spread so far so fast before … no matter what conditions prevailed in the environment at large*" (McNeill, 1984, p. 1).

In modern history, an estimated 1.5 million Europeans migrated to the Americas between 1500 and 1800 (Altman et al., 1991). During this same period, approximately 8 million Africans were forcibly transported to the Americas to work as slaves (Manning, 2012), marking one of the darkest chapters in human migration history. Migration continued to be a defining feature of the 19th and early 20th centuries. This period saw an additional 50 million Europeans leave their homes, moving to the Americas and further across the Atlantic to Australia and New Zealand. Simultaneously, across South and East Asia, around 80 million people migrated during these centuries (Manning, 2012).

Several mass migrations have occurred in more recent history. For example, millions migrated from China to Hong Kong and Taiwan in the 1940s after the Chinese communist revolution (Skeldon, 1996). The U.S. military withdrawal from Vietnam in 1975 triggered another significant migration event, as hundreds of thousands of Vietnamese fled the country, fearing persecution under the new communist regime (Nguyen, 2019). Forced migration has also been a recurring theme in Afghanistan, where over 2 million Afghans fled to neighbouring Pakistan and Iran during the Soviet invasion in the 1980s and the civil war in the 1990s (Dimitriadi, 2013). More recently, the U.S. withdrawal from Afghanistan in 2021 prompted another wave of mass displacement, as the Taliban regained control of the country. Millions of Afghans sought refuge in neighbouring countries, while many others sought asylum in Europe, the United States, and beyond, fearing persecution, especially among vulnerable groups such as women and ethnic minorities (UNHCR, 2023).

In 2022, Europe witnessed one of its largest refugee crises since World War II with the Russian invasion of Ukraine. This conflict forced millions of Ukrainians to flee their homes in search of

safety, primarily to neighbouring countries such as Poland, Hungary, and Romania. As of January 2024, an estimated 3.7 million people were displaced within Ukraine, with 6.3 million people registering as refugees globally, making it one of the most significant forced migration events in recent history (UNHCR, 2024d).

It is indisputable that humans have always migrated from one place to another. Data from the International Organization for Migration (IOM) report shows that by the end of 2020, there were approximately 281 million migrants worldwide, accounting for nearly 3.6% of the global population (IOM, 2021). This figure includes both voluntary and forced migrants, ranging from economic migrants to refugees fleeing persecution and violence. Despite this, migration remains relatively rare, as the majority of the world's population does not migrate.

Thus, it is crucial to understand what drives individuals or groups to leave their homes or, in some cases, their homelands. Are the same factors that motivated our early *Homo sapiens* ancestors to migrate responsible for migration today? The next section will explore the key factors that have driven human migration throughout history, both in the past and in the modern era.

1.2.4 Key factors associated with human migration

Migration of any type is commonly associated with "*push*" and "*pull*" factors. "*Push*" factors are any damaging or undesirable forces that drive individuals or groups out of their current place of residence. "*Pull*" factors, on the other hand, are the positive or promising aspects of a new location that attract people to move there (Rubenstein, 2018, p. 92). Both push and pull factors often work together, creating a complex interplay of motivations that lead to migration (Kline, 2003).

As for the early human migrations, there is currently no definitive evidence in the literature that fully explains why species like *Homo erectus* and early *Homo sapiens* began migrating out of Africa. However, several theories have been proposed by experts in the field, though many remain highly debated. One prevailing theory suggests that climate change played a critical role, with warmer temperatures and increased humidity serving as a pull factor. These climatic

conditions may have facilitated the migration of Homo sapiens from Africa, enabling them to cross the Sahara Desert into Eurasia. This migration likely occurred between 120,000 and 50,000 years ago (Tierney et al., 2017; Timmermann and Friedrich, 2016; Drake et al., 2011).

Much of the current literature on migration focuses on the factors influencing migration patterns from the late 20th century onwards. Migration today—defined here as migration from the late 20th century to the present—has become increasingly complex due to a combination of political, economic, environmental, and social factors. These factors simultaneously push individuals out of their home countries while pulling them toward new destinations (De Haas et al., 2019). Scholars have identified several key drivers of migration in this contemporary era. The following sections will explain these key factors in more detail, drawing on examples from recent research.

It is important to note that much of the evidence discussed in this section relates to migration aspirations, intentions to migrate, or broader migration patterns in mixed populations, rather than to realised migration among specific migrant categories.

1.2.4.1 Conflict, war, violence, insecurity, and political instability

Large-scale conflicts, such as world wars, civil wars, and political upheavals, are among the most significant drivers of migration, especially forced migration. The World Wars of the 20th century led to the displacement of millions of people across the globe.

World War II (1939-1945) caused the largest forced displacement in modern history. By the war's end, approximately 60 million people had been displaced across Europe and Asia (Stola, 1992). The war created millions of refugees, particularly in Eastern Europe, as borders shifted, and entire populations were uprooted. This period also saw significant forced migration through the Nazi regime’s persecution and genocidal policies, which displaced millions of Jews and other minority groups (Stola, 1992). Similarly, World War I (1914-1918) displaced millions of people across Europe, as refugees fled the destruction of warfare and the collapse of empires (Gatrell, 2013). An estimated 10 million civilians were displaced during and after the war, many of whom sought refuge in neighbouring countries (Gatrell, 2013).

Beyond the world wars, other large-scale conflicts such as civil wars and regional wars have also driven forced migration. A study by Hatton and Williamson (2003) on annual data from 40 Sub-Saharan African countries between 1987 and 1992 demonstrated that civil wars and coups d'état were key drivers of forced migration. Their study found that civil wars displaced 36 people per 1,000 population, while coups d'état displaced 38 people per 1,000 population (Hatton and Williamson, 2003). This displacement often resulted from the direct violence of the conflict, as well as the destruction of homes, infrastructure, and livelihoods. Naudé (2010) also provides evidence that conflict, along with pursuit for job opportunities, were the most significant factors relating to forced migration among Sub-Saharan African countries during the period of 1965–2005 (Naudé, 2010).

The Lebanese Civil War (1975–1990) provides another key example of conflict-induced migration. The war forced nearly one million people—about 40% of the population—to flee the country, seeking refuge from the violence and destruction that engulfed the nation (Tabar, 2009). In addition to the loss of life, many Lebanese fled due to the loss of their homes, employment, and educational opportunities (Tabar, 2009).

In more recent history, the Syrian Civil War, which began in 2011, has led to the displacement of over 14 million Syrians (UNHCR, 2024c). This conflict has created one of the largest refugee crises of the 21st century, with millions seeking asylum in Europe and neighbouring countries such as Turkey, Lebanon, and Jordan. Similarly, Afghanistan has seen multiple waves of forced migration over the last few decades, but the most recent and significant surge followed the Taliban's takeover in 2021. After the withdrawal of U.S. forces, the Taliban swiftly regained control, leading to mass displacement as millions of Afghans fled the country, fearing persecution (UNHCR, 2023). In Europe, the Russian invasion of Ukraine in 2022 has resulted in one of the largest displacements since World War II. By January 2024, more than 6 million Ukrainians had fled the country (UNHCR, 2024e). The invasion has displaced millions within Ukraine and created a large refugee population, significantly impacting migration trends in Eastern Europe.

While large-scale conflicts like these displace millions, smaller-scale violence and local insecurity also play a critical role in migration. The World Health Organization (WHO) defines

violence as: "*The intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, that either results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment or deprivation*" (WHO, 2002, p. 5). There is strong evidence in the literature to suggest that people who experience violence and insecurity have a higher tendency to migrate (Naudé, 2010; Mafukidze, 2006; Hatton and Williamson, 2003).

A study by Wood et al. (2010) used data from the Latinobarometro public opinion survey to examine the effect of violence and crime on the migration aspirations of approximately 49,000 participants from 17 different countries (mainly South America), between 2002 and 2004. The study found that the tendency to migrate internationally was 30% higher among participants who had experienced, or had family members who had experienced, some forms of criminal violence in the years prior to the survey (Wood et al., 2010).

Although local violence may not lead to displacement on the same scale as wars, it still drives significant migration, especially when compounded by broader political instability. Dustmann and Okatenko (2014) analysed data from the first wave of Gallup World Poll (GWP) survey. The first wave of GWP survey collected data from 129 countries with approximately 1,000 participants per country during 2005 and 2006. In the study by Dustmann and Okatenko (2014), data from only three regions, namely Sub-Saharan Africa, Latin America, and Asia were included in their analyses. The study found that "*area security*" had a statistically significant effect (p-value < 0.01) on migration aspirations across Sub-Saharan Africa, Latin America, and Asia. People in regions with better security were less likely to aspire to migrate, while those in insecure environments showed a stronger desire to leave (Dustmann and Okatenko, 2014). Several other studies also identify violence and insecurity as one of the key reasons behind people's intentions to migrate (Blacklock et al., 2014; Nieri et al., 2012; Vigh, 2009).

More recently, a systematic review by Aslany et al. (2021) pooled data from 10 studies examining violence and insecurity as independent factors influencing migration aspirations. All 10 studies reported a positive correlation between violence and the desire to migrate, underscoring the role of insecurity—whether from war, civil unrest, or crime—in driving migration decisions (Aslany et al., 2021).

Finally, political instability in a country or region also drives migration. A study by Etling et al. (2020), surveying 8,000 young adults in Egypt, Lebanon, Morocco, and Tunisia, found that migration aspirations were significantly associated with political factors like political corruption, political violence, lack of democracy, and political influence (Etling et al., 2020). Participants from politically unstable environments were more likely to aspire to migrate, while those in more democratic countries were less likely to express such aspirations (Etling et al., 2020). Other studies similarly found a positive correlation between good governance and a reduced tendency to migrate (Hiskey et al., 2014; Timmerman et al., 2014).

1.2.4.2 Corruption

The Cambridge Dictionary defines corruption as an "*… illegal, bad, or dishonest behaviour, especially by people in positions of power*" (Cambridge Dictionary, 2022). High levels of corruption can potentially lead to significant social and economic problems, such as bribery, unemployment, and abuse of power, all of which are expected to increase the likelihood of migration among affected individuals.

A study by Ariu and Squicciarini (2013) examined migration data from Docquier et al. (2009) to assess the relationship between corruption and the migration inflows and outflows of highly skilled workers with post-secondary education across 123 countries during the years 1900 and 2000. They measured corruption using the International Country Risk Guide (ICRG) corruption index, which assigns scores ranging from 0 (highest corruption) to 6 (no corruption). To facilitate their analysis, they rescaled the index so that higher values indicated greater corruption (Ariu and Squicciarini, 2013). This allowed them to assess the relationship between corruption and migration on a continuous scale. Their findings revealed that corruption has a significant impact on both inflows and outflows of highly skilled workers (Ariu and Squicciarini, 2013).

After controlling for GDP per capita, Ariu and Squicciarini (2013) found that each unit increase in corruption led to a 0.32% decrease in net migration flows. This means that more corrupt countries tend to experience a net loss of highly skilled workers, with more people leaving than arriving. For inflows specifically, the study showed a 0.15% decrease in the migration of

highly skilled workers for every unit increase in corruption (Ariu and Squicciarini, 2013). This indicates that highly skilled workers are less likely to migrate to highly corrupt countries. On the other hand, corruption also drives the outflow of highly skilled workers, as the study found a 0.18% increase in emigration for every additional unit of corruption (Ariu and Squicciarini, 2013). This suggests that highly skilled workers from corrupt countries are more likely to leave in search of opportunities in countries with less corrupt environments.

In the same vein, other studies have also found a strong association between people's perception or experience of corruption and their tendency to migrate out of corrupt areas (Crisan et al., 2019; Dimant et al., 2013).

These findings align with other studies on the relationship between corruption and migration. For example, Aslany et al. (2021) conducted a systematic review that analysed seven studies on corruption and migration aspirations. Out of these studies, five studies found a statistically significant positive association between high levels of corruption and increased migration intentions. The remaining two studies found no statistically significant association between corruption and migration aspirations (Aslany et al., 2021).

1.2.4.3 Socioeconomic status (SES)

It is perhaps evident from the term itself, socioeconomic status is defined as "*a measure of one's combined economic and social status*" (Baker, 2014, p. 1). The relationship between SES and migration follows a non-linear pattern, commonly described as an inverted U-shape (De Haas, 2020). This means that individuals in the middle socioeconomic tiers are more likely to migrate, whereas migration is less common among both the most deprived and the wealthiest populations. De Haas (2010) observed that this pattern applies not only to individuals but also at the country level, where migration levels rise during early phases of development and decline as the country becomes more economically stable. (De Haas, 2010).

However, not all studies support this model. For example, in Van Dalen et al.'s (2005) study of international migration surveys between 1997 and 1998 across Turkey, Morocco, Egypt, Senegal, and Ghana, found that in Ghana, people from both the lowest and the highest

socioeconomic statuses were more likely to emigrate compared to those in the middle SES (Van Dalen et al., 2005).

In a study by Wood et al. (2010), socioeconomic status had a statistically significant positive effect on migration aspirations (odds ratio (OR) = 1.21, p-value < 0.05) after controlling for demographic and educational factors (Wood et al., 2010). This study suggests that individuals with higher SES are more likely to migrate, regardless of their age, gender, or educational background.

Sadiddin et al. (2019), using data from 2014 Gallup World Poll (GWP) survey across Sub-Saharan Africa assessed the relationship between food insecurity and decisions to migrate (Sadiddin et al., 2019). The study found that individuals experiencing severe food insecurity had a 5.2% increase in migration aspirations (p-value < 0.01), indicating a strong desire to leave when facing extreme deprivation. However, the same study found that severe food insecurity had a 9.6% decrease in the ability to make migration decisions (p-value < 0.05), suggesting that while the desire to migrate is high, the ability to realise those aspirations is significantly hindered due to the lack of resources needed for migration (Sadiddin et al., 2019).

1.2.4.4 Demographic-related factors

Demographic factors influencing migration primarily include variables such as age, gender, marital status, ethnicity, religion, and sexuality. These factors are key in shaping migration aspirations and decisions (De Leo and Krysinska, 2008).

Age plays a significant role in migration aspirations and broader migration patterns. Nearly all the studies included in the systematic review by Aslany et al. (2021) revealed that younger people consistently report higher migration aspirations (Aslany et al., 2021). However, the role of age can vary. The study by Groenewold et al. (2012) highlighted that in certain regions, such as parts of Africa, older individuals have an increased tendency to migrate (Groenewold et al., 2012).

Gender also plays an important role, with men typically showing higher migration aspirations than women. For instance, in a study by Groenewold et al. (2012), men were nearly three

times more likely to aspire to migrate than women (OR = 2.82, p <0.01) (Groenewold et al., 2012). Similarly, several other studies have shown that the desire to migrate is significantly higher among men compared to women (Smith and Floro, 2020; Chindarkar, 2014; Hoffman, 2014; Hiskey et al., 2014; Graham and Markowitz, 2011).

Regarding marital status, the literature consistently shows that single individuals are more likely to migrate than those who are married (Crisan et al., 2019; Sadiddin et al., 2019; Manchin and Orazbayev, 2018; Otrachshenko and Popova, 2014; Chindarkar, 2014; Agadjanian et al., 2008).

Sexuality is another important demographic factor, particularly for LGBTQ+ individuals. People facing persecution due to their sexual orientation or gender identity are often forced to migrate from countries where LGBTQ+ rights are not recognised, or where they face violence and discrimination (UNHCR, 2021c).

Lastly, religion also plays a significant role in shaping migration patterns, serving both as a push and pull factor (Ager and Ager, 2016). Religious persecution or conflict often leads to forced migration, with examples such as the displacement of religious minorities such as Christians and Muslims from regions experiencing religious violence. However, religion also acts as a support system for migrants, particularly in destination countries where religious communities provide essential resources like food, shelter, and spiritual support (Ager and Ager, 2016).

1.2.4.5 Education and employment status

The relationship between higher education and migration aspirations is well-documented across various studies, with a consensus that individuals with higher educational attainment are more likely to migrate. Some studies have measured education on a continuous scale, such as the total number of years of schooling, while others categorise education into specific levels (e.g., primary, secondary, and tertiary). Regardless of how it is measured, a positive association is consistently observed between education level and migration aspirations or broader migration likelihood.

For instance, Migali and Scipioni (2019) analysed data from the Gallup World Poll (GWP), which surveyed people in over 150 countries between 2010 and 2015 (Migali and Scipioni, 2019). The study included participants aged 15 and older. The study found a statistically significant positive effect of education on migration aspirations, with individuals holding secondary (adjusted OR (aOR) = 1.12, p-value < 0.05) and tertiary education (aOR = 1.22, p-value < 0.01) statistically significantly more likely to express a desire to migrate compared to those with only primary education (Migali and Scipioni, 2019). This finding aligns with the broader literature, where higher educational attainment is often linked to higher migration intentions (Etling et al., 2020; Smith and Floro, 2020; Williams et al., 2018; Chindarkar, 2014; Graham and Markowitz, 2011; Wood et al., 2010).

Similarly, employment status plays a critical role in shaping migration decisions. Numerous studies show that unemployment significantly increases the likelihood of migration aspirations. Migali and Scipioni (2019) reported that unemployed individuals were 1.4 times more likely to express migration aspirations (OR = 1.4, p-value < 0.01) (Migali and Scipioni, 2019). Similarly, other studies have shown a strong relationship between unemployment and the desire to migrate (Etling et al., 2020; Migali and Scipioni, 2019; Agadjanian et al., 2008; Kalchev et al., 2004).

1.2.4.6 Previous migration history

According to Carballo and Nerukar (2001), the process of migration is considered highly risky and involves "*uprooting, being separated from family and traditional values, and being placed in new social and cultural situations where job and legal security may be minimal*" (Carballo and Nerukar, 2001, p. 557). Therefore, for individuals with previous migration experience, the psychological and practical barriers to future migration episodes may be reduced, as they are already familiar with the complexities of the process (Aslany et al., 2021).

Research has consistently shown that both a history of migration and migration networks (such as having family or friends in the destination country) statistically significantly influence an individual's willingness to migrate again (Méndez, 2020; Etling et al., 2020; Smith and Floro, 2020; Berlinschi and Harutyunyan, 2019; Migali and Scipioni, 2019; Tabor et al., 2015;

Otrachshenko and Popova, 2014; Timmerman et al., 2014; Ivlevs, 2013; Nieri et al., 2012). Méndez (2020) used data from the National Adolescence and Youth Survey (NAYS) in Uruguay, which surveyed adolescents and young adults aged 12 to 29 in urban areas with over 5,000 residents. In the study, data from 2,331 participants aged 18 and older were analysed, and the results showed a statistically significant relationship between previous migration history and the intention to migrate again (aOR = 1.07, p-value < 0.05) (Méndez, 2020). This finding suggests that individuals who have already migrated are more likely to consider migrating in the future.

1.2.4.7 Environmental factors

Environmental factors including shortage of water, loss of agricultural land, famine, natural disasters, and climate change are long-established drivers of displacement from habitual residences (IOM, 2008).

Many studies have explored the relationship between environmental factors and migration patterns (Naudé, 2009; Barrios et al., 2006; Beine and Parsons, 2017; Spencer and Urquhart, 2018). However, the results of these studies have produced mixed results. Some studies have shown a positive relationship between environmental change and increased migration, while other studies have reported a negative effect or no effect at all (Cattaneo et al., 2020; Berlemann and Steinhardt, 2017; Hunter et al., 2015; Black et al., 2011; Piguet, 2010). A recent meta-analysis by Hoffmann et al. (2020) found substantial heterogeneity in the relationship between environmental changes and migration across different regions and time periods. While environmental factors do influence migration, they are typically accompanied by other drivers, such as conflict, economic instability, and political factors (Hoffmann et al., 2020).

1.3 Forced migration in context

1.3.1 Global trends in forced migration

Based on the most recent data from UNHCR, the total number of forced migrants worldwide reached a record high of approximately 123.2 million by the end of 2024, more than triple the 2010 figure of around 41 million (UNHCR, 2021a; UNHCR, 2025c). This total includes refugees, asylum seekers, internally displaced persons (IDPs), and Palestinian refugees under the mandate of UNRWA. Currently, an estimated 1.5% of the world's population is forcibly displaced (UNHCR, 2025b), and this figure does not include undocumented forced migration. While the overall trend in forced migration has been rising for over a decade, the COVID-19 pandemic temporarily disrupted cross-border movements. The number of refugees and asylum seekers in 2020 was approximately 1.5 million fewer than anticipated (1.6 million instead of the expected 3.1 million) (UNHCR, 2021a).

IDPs make up the largest proportion of the forcibly displaced population, accounting for approximately 73.5 million people (around 60% of the total). Refugees account for 42.7 million, which includes 5.9 million Palestinian refugees under UNRWA's mandate (UNHCR, 2025b). Asylum seekers make up 8.4 million, representing about 7% of the total forcibly displaced population (UNHCR, 2025b).

As of 2024, the top countries of origin for asylum seekers globally included Sudan, Venezuela, Syria, Colombia, and Afghanistan (UNHCR, 2025c). The largest recipients of new asylum applications in 2024 were the United States, Egypt, Germany, and Canada, accounting for over half of all new asylum applications (UNHCR, 2025c).

By the end of 2024, the largest refugee-producing countries included Syria (6 million), Palestine (5.9 million), Afghanistan (5.8 million), Ukraine (5 million), South Sudan (2.3 million) and Sudan (2.1 million) (UNHCR, 2025c). Collectively, these countries account for more than two-thirds of all refugees worldwide. On the receiving side, nearly half of the world's refugees were hosted in just five countries: Iran (3.5 million), Türkiye (2.9 million), Colombia (2.8 million), Germany (2.7 million), and Uganda (1.8 million) (UNHCR, 2025c).

As of the end of 2024, approximately half of all forced migrants were female, a near-equal gender distribution. Additionally, around 40% of forced migrants were children under the age of 18, and only 7% were aged over 60 (UNHCR, 2025c).

1.3.2 General health risks across the migration journey

The process of migration, particularly in the case of forced migration, exposes individuals to numerous health risks during different stages of their migration journey: pre-flight (in the country of origin), during flight (while fleeing), and post-flight (upon arrival in the host country) (Gushulak and MacPherson, 2000). It may also involve carrying health risks from the country of origin or from countries passed through on the way to the destination (Gushulak and MacPherson, 2004). These risks can become even more pronounced among refugees and undocumented migrants, who may be exposed to prolonged stays in refugee camps with limited access to healthcare (Health and Services, 1992), or in the case of undocumented migrants, to smuggling or human trafficking, which can add further complexity to their health needs (Gushulak and MacPherson, 2000).

Evidence from the WHO European Region indicates that the standardised mortality ratio for communicable and blood-related diseases is higher among migrants and refugees compared to host populations, although migrants overall exhibit lower rates of non-communicable diseases (WHO, 2018). However, certain forced migrant subgroups may still be at elevated risk for specific chronic conditions. In a cohort study, the causes of death of 242,075 people in Finland who died between 1971 and 2010 were analysed to identify differences among the causes of death between the displaced and host populations. The study found that both mortality due to cardiovascular diseases (RR = 1.11, 95% CI 1.08-1.15) and all-cause mortality (RR = 1.03, 95% CI 1.01-1.05) were statistically significantly higher among forced migrants compared to the host populations (Haukka et al., 2017).

The risk of infectious diseases is also considerably elevated among migrants and refugees (Eiset and Wejse, 2017; Hammer, 2017; Eonomopoulou et al., 2017). Poor living conditions during transit and in refugee camps, combined with inadequate access to healthcare, can further increase the risk of infectious disease transmission (Eiset and Wejse, 2017; Williams

et al., 2016). A study by Ikram et al. (2016) analysed mortality data from France, the UK, Denmark, the Netherlands and Spain to compare differences in causes of death among migrant groups and host populations (Ikram et al., 2016). The study reported that mortality from infectious diseases, particularly tuberculosis (TB), was significantly higher among migrants, with the exception of migrants from East Asia, Eastern Europe, and Turkey, where no significant differences were observed (Ikram et al., 2016). Furthermore, lower vaccination rates among refugees and migrants, especially children, may expose them to higher risk of vaccine-preventable diseases. A systematic review found that migrant children in Germany were three times more likely to be unvaccinated against measles, making them more susceptible to contracting the disease. Similar findings were reported for migrant children in Spain and Italy (Mipatrini et al., 2017).

1.3.3 Mental health among forced migrants

1.3.3.1 Prevalence of mental health disorders

The prevalence of mental health disorders among forced migrants varies significantly across studies and different migrant groups. This disparity in reported rates of mental health conditions may be due to several factors, including the large heterogeneity within migrant populations, diverse risk factors, and varying research methodologies used in the studies (Turrini et al., 2017; Hollander et al., 2016; Bogic et al., 2015; Fazel et al., 2005). Forced migrants, in particular, are more vulnerable to developing mental health disorders compared to both the host populations and other migrant groups (Hough et al., 2019). This may be largely due to their increased exposure to multiple risk factors, which significantly increase their susceptibility to conditions such as PTSD, depression, and anxiety.

The complex nature of forced migration involves multiple stages where individuals are exposed to traumatic experiences that shape their mental health outcomes. However, trauma exposure alone does not fully account for the distress experienced by forced migrants. Miller and Rasmussen (2010) argue that post-migration stressors, or the ongoing daily stressors associated with displacement and resettlement, such as legal insecurity, poverty, family separation, and social marginalisation, are also important determinants of mental health,

which can maintain or exacerbate psychological distress after arrival in a host setting (Miller and Rasmussen, 2010). As shown in **Table 1**, these stages include the pre-flight, during flight, and post-flight phases. Each stage is associated with distinct risk factors that may contribute to the development of mental health disorders, from persecution and violence to uncertainty and social isolation.

Table 1 | Risk factors associated with the development of mental health disorders in forced migrants.

Migration process	Risk factors associated with the development of mental health disorders among forced migrants
Pre-flight	- Persecution or fear of persecution (Opaas and Varvin, 2015; Lindert et al., 2009; McColl and Johnson, 2006; Cabral Iversen and Morken, 2003). - Armed conflicts (Priebe et al., 2013a; Kalt et al., 2013; Lindencrona et al., 2008; McColl et al., 2008; Lie, 2002). - Economic hardship (Priebe et al., 2013a; Morgan, 2008).
During flight	- Sexual violence, exposure to infectious diseases, human trafficking, and unsafe journeys (Mohamud, 2010; Bell and Zech, 2009). - Separation from family members (Hebebrand et al., 2016; Morgan, 2008).
Post-flight	- Uncertainty about the asylum application (Firenze et al., 2016; Heeren et al., 2014; Teodorescu et al., 2012; Drozdek et al., 2003). - Detention (Hebebrand et al., 2016; Pfortmueller et al., 2016; Procter et al., 2011; Johansson Blight et al., 2009; Cohen, 2008; McColl and Johnson, 2006; Iversen and Morken, 2004). - Reduced social integration and post-migration stressors (Bogic et al., 2015; Hollander, 2013; Crumlish and O'Rourke, 2010; Steel et al., 2009; Bell and Zech, 2009; Toar et al., 2009; Gerritsen et al., 2006).

The mental health challenges faced by forced migrants are often compounded by cumulative trauma across these stages. Pre-flight experiences, such as persecution or armed conflict, lay the foundation for long-lasting psychological effects (Opaas and Varvin, 2015; Lindert et al., 2009; McColl and Johnson, 2006; Cabral Iversen and Morken, 2003). Once migrants begin their journey, during flight, they may encounter additional traumatic events, including sexual violence, disease, and dangerous travel conditions (Mohamud, 2010; Bell and Zech, 2009). These experiences can leave deep psychological scars, making the post-flight adjustment process even more difficult.

In the post-flight phase, forced migrants often face uncertainty surrounding their legal status and, in some cases, experience detention (Hebebrand et al., 2016; Pfortmueller et al., 2016; Procter et al., 2011; Johansson Blight et al., 2009; Cohen, 2008; McColl and Johnson, 2006; Iversen and Morken, 2004). The challenges of social integration further compound their mental health risks, as migrants may feel isolated from the host society, lacking adequate social support or access to mental health services (Bogic et al., 2015; Hollander, 2013; Crumlish and O'Rourke, 2010; Steel et al., 2009; Bell and Zech, 2009; Toar et al., 2009; Gerritsen et al., 2006). Studies (see **Table 1**) suggest that these factors significantly contribute to the higher rates of mental health disorders in forced migrant populations compared to the general population in host countries.

Depression and anxiety

Numerous studies have shown that the prevalence of depression and anxiety is significantly higher among forced migrants compared to other migrant groups and the general population. A meta-analysis of 35 studies revealed that the prevalence of depression ranged from 3% to 81%, while anxiety rates varied between 5% and 90% (Lindert et al., 2009). Importantly, this review showed that forced migrants exhibited nearly double the prevalence of depression (refugees = 44%; labour migrants = 20%) and anxiety (refugees = 40%; labour migrants = 21%) compared to labour migrants (Lindert et al., 2009). Another systematic review conducted in 2016 found similarly broad ranges of depression (5%-44%) and anxiety (4%-40%) among forced migrants, much higher than the general population, where the prevalence of depression and anxiety stood at approximately 8%-12% and 5%, respectively (Close et al., 2016).

However, there are some variations in reported rates. For example, a review by Fazel et al. (2005) reported lower rates, with only 5% of forced migrants diagnosed with depression (Fazel et al., 2005). This is notably close to the WHO estimate, which reports that 5% of adults globally suffer from depression (WHO, 2021).

Among Syrian refugees, some studies have reported an even higher prevalence rate of mental health disorders. A study conducted among Syrian adults residing in a refugee camp in Turkey

reported that 37.4% of the Syrian refugees were suffering from depression (Acarturk et al., 2018). Similarly, a population-based survey of refugees from Syria resettled in Sweden found that 40.2% experienced depression, while 31.7% were affected by anxiety (Tinghög et al., 2017).

Several studies have linked poor socioeconomic conditions with a higher rate of depression and anxiety among forced migrants (Priebe et al., 2016; Bogic et al., 2015; Steel et al., 2009; Ryan et al., 2008). Additionally, prolonged waiting periods for asylum application processing were strongly associated with higher prevalence rates of both depression and anxiety, even after controlling for other risk factors (Laban et al., 2008).

Post-traumatic stress disorder (PTSD)

PTSD is another prevalent mental health condition among forced migrants, with studies consistently showing high rates across different migrant groups. In a systematic review by Morina et al. (2018), the prevalence of PTSD ranged from as low as 2.2% to as high as 88.3% in 30 studies (Morina et al., 2018). This wide variation highlights the considerable heterogeneity among different migrant populations and the diverse methodologies used in assessing PTSD prevalence.

Additionally, a review by Fazel et al. (2005), which examined 7,000 refugees resettled in western countries, reported that 9% of the participants were diagnosed with PTSD. Nonetheless, the review identified considerable heterogeneity between the studies (Fazel et al., 2005). Other studies have also shown a wide range in the prevalence of PTSD among forced migrants. For example, the prevalence of PTSD among forced migrants is reported to range from 9% to 36%, compared to a significantly lower 1%-2% in the general population (Priebe et al., 2016; Close et al., 2016). Moreover, studies suggest that experiences of previous trauma are related to an even higher prevalence of PTSD among forced migrants (Alpak et al., 2015).

Syrian refugees, in particular, are found to have a higher prevalence rate of PTSD than other forced migrants. Nearly 30% of Syrian refugees in Sweden were found to suffer from PTSD (Tinghög et al., 2017), while the prevalence of PTSD was as high as 83.4% among Syrian

refugees in Turkish refugee camps (Acarturk et al., 2018). These figures suggest that specific migrant groups, especially those escaping from severe conflict zones, are disproportionately affected by PTSD.

There is also a significant degree of comorbidity between PTSD and depression in forced migrant populations. In the review by Fazel et al. (2005), 71% of participants diagnosed with depression were also found to suffer from PTSD. Similarly, 44% of those diagnosed with PTSD also experienced depression. However, Fazel and colleagues caution that this high comorbidity rate may partly be attributed to diagnostic inaccuracies and small sample sizes in some of the studies included in the review (Fazel et al., 2005).

Psychotic disorders

Evidence on psychotic disorders among forced migrants is more limited and less consistent than the evidence on depression, anxiety, and PTSD. Several studies conducted among migrants more broadly have reported elevated risks of psychotic disorders compared to the general population (Dapunt et al., 2017; Hollander et al., 2016). A meta-analysis conducted in 2005 found that migrants had a statistically significantly higher risk of developing schizophrenia, with a relative risk (RR) of 2.9 (95% CI 2.5-3.4) compared to the host populations (Cantor-Graae and Selten, 2005). The subgroup analyses in this review revealed an even higher risk among migrants from developing countries (RR = 3.3, 95% CI 2.8-3.9) and migrants of black racial background (RR = 4.8, 95% CI 3.7-6.2), highlighting the intersectionality of race and migration status in mental health vulnerability (Cantor-Graae and Selten, 2005).

Similarly, a review of 21 studies by Bourque et al. (2011) reported that both first- and second-generation migrants had more than a two-fold increase in the risk of developing psychotic disorders compared to the general population (Bourque et al., 2011). In contrast, the largest meta-analytic review by Fazel et al. (2005) found that the prevalence of psychotic disorders among refugees was only 2%, which was comparable to rates seen in the general population, with no significant difference between the two (Fazel et al., 2005).

Substance use disorders

There is a growing, though still heterogeneous, body of evidence on substance use among forced migrants. A systematic review by Horyniak et al. (2016), which examined substance use among forced migrants, found substantial variation in substance use patterns across studies (Horyniak et al., 2016). Among the studies, hazardous or harmful alcohol use ranged from 17% to 36% in camp settings and from 4% to 7% in community settings, while few studies collected validated measures of illicit drug use. The review also found that alcohol-related problems tended to be more common in camp settings than in community settings, and that male sex, trauma exposure, and symptoms of mental illness were commonly identified correlates of substance use (Horyniak et al., 2016). Similarly, earlier work on harmful alcohol use among forced migrants highlighted that alcohol-related problems are a relevant concern in some refugee and conflict-affected settings, while also showing that the evidence base remains uneven and "extremely weak" (Roberts et al., 2011; Weaver and Roberts, 2010, p. 2340).

Beyond the literature focused specifically on forced migrants, studies on migrant populations more broadly have reported mixed findings. Some studies have reported higher rates of smoking among migrants compared to the general population, whereas alcohol and other substance use have not been found to be uniformly higher across all migrant groups (Salama et al., 2018; Manhica et al., 2017). For example, evidence from the United States has suggested a "refugee paradox", whereby refugees were less likely than native-born Americans to meet criteria for several substance use disorders, and in some cases also less likely than non-refugee immigrants (Salas-Wright and Vaughn, 2014, p. 1). In addition, smoking prevalence appears to be strongly associated with gender, with migrant women tending to have significantly lower smoking rates compared to non-migrant women, while migrant men have higher smoking rates than non-migrant men (Khlat and Guillot, 2017; Melchior et al., 2015; Hanna, 1995).

1.3.3.2 Barriers to mental health care faced by forced migrants

Forced migrants often face significant barriers to accessing mental health care in their host countries, preventing them from receiving the care and support they need. Reviews have highlighted a range of barriers, including language difficulties, lack of awareness of services, stigma, cultural understandings of distress, and negative attitudes towards providers and by providers (Van der Boor and White, 2020; Satinsky et al., 2019). **Table 2** summarises some of the main barriers identified in the literature.

Table 2 | Barriers to mental health care among forced migrants.

Barrier	Description
Lack of knowledge of the availability of healthcare services in host countries	Many forced migrants are unaware of their rights to access mental health services (Reko et al., 2015; Brendler-Lindqvist et al., 2014; Dorn et al., 2011).
Language difficulties	Language barriers can impede effective communication between migrants and healthcare professionals, which in turn can disrupt the diagnostic process (detection/diagnosis of mental illness, management/treatment of the illness) (Bell and Zech, 2009).
Cultural understandings and stigma	Diverse cultural and religious beliefs may impact mental health treatment uptake (Brendler-Lindqvist et al., 2014).
Discrimination and exclusion	Experiences of discrimination in healthcare settings can deter forced migrants from seeking care or result in lower-quality services (Thornicroft et al., 2016; Hacker et al., 2015).

Each of these barriers poses unique challenges to forced migrants in their attempts to access care. Lack of knowledge about healthcare services, both on the part of forced migrants and healthcare workers, remains a significant issue. Studies have shown that many forced migrants are unaware of their entitlement to healthcare services (Priebe et al., 2013b; Priebe et al., 2011), while general practitioners may also not fully understand the healthcare rights of this group (Bäärnhielm et al., 2014; Woodward et al., 2014; Dauvrin et al., 2012). Reviews have also emphasised that difficulties in navigating unfamiliar health systems and negotiating access to care can themselves become important barriers (Van der Boor and White, 2020).

Moreover, language barriers further complicate access to care, particularly in the early stages of resettlement (Hebebrand et al., 2016; Brendler-Lindqvist et al., 2014; Dorn et al., 2011; Toar et al., 2009). These barriers disrupt the diagnostic process and prevent effective communication, which can delay or even prevent proper treatment (Bell and Zech, 2009). Additionally, cultural differences in understanding mental health, along with social stigma, can further distance migrants from seeking help (Brendler-Lindqvist et al., 2014).

Discrimination and exclusion from services also represent critical barriers. Forced migrants may experience discrimination within healthcare settings, leading to mistrust of providers, lower quality of care, or avoidance of seeking help altogether (Thornicroft et al., 2016; Hacker et al., 2015). Such experiences can reinforce social marginalisation and worsen mental health outcomes.

1.3.3.3 Approaches to improving access to mental health care

A range of approaches have been proposed to address the barriers that prevent forced migrants from accessing mental health care. These include outreach and service coordination, broader social integration measures, and the use of interpreters to address language barriers. **Table 3** provides a concise overview of these approaches.

Outreach and service coordination are important because many forced migrants are unaware of the mental health support available to them. These approaches can help identify mental health needs and provide information on how to access available support (Martinez et al., 2015). Non-governmental organisations (NGOs) are often crucial in delivering such support, providing both information and practical assistance to those in need (Woodward et al., 2014; Dauvrin et al., 2012; Dorn et al., 2011; Betancourt, 2005). In addition, coordination between outreach services and mental health services is important to ensure that forced migrants can access more continuous and comprehensive care. Studies have shown that effective collaboration between these services enhances the efficiency of healthcare delivery (Giacco et al., 2014; Priebe et al., 2013b; Priebe et al., 2011; McColl and Johnson, 2006).

Table 3 | Approaches to improving access to mental health care provision among forced migrants.

Approach	Description
Outreach and service coordination	Outreach can help identify mental health needs among forced migrants and provide crucial information about how to access support (Martinez et al., 2015). Non-governmental organisations (NGOs) often play an important role in delivering information and facilitating access (Woodward et al., 2014; Dauvrin et al., 2012; Dorn et al., 2011; Betancourt, 2005). Coordination between outreach, primary care, and mental health services is essential to ensure continuity of support (Giacco et al., 2014; Priebe et al., 2013b; Priebe et al., 2011; McColl and Johnson, 2006).
Social integration measures	Social integration may be promoted through partnerships between sectors such as mental health, social care, and voluntary sectors, enhancing education, job opportunities, and housing (UNHCR, 2013; Beirens et al., 2007).
Use of interpreters	Interpreters can help address language barriers, improve communication between migrants and healthcare professionals, and support more effective access to mental health services (Johansson Blight et al., 2009).

Social integration measures are also important for improving mental health outcomes among forced migrants. Promoting integration through education, employment opportunities, housing, and community support can create a greater sense of stability and belonging, which is crucial for mental well-being (Craig, 2015; Beirens et al., 2007). Partnerships between the mental health sector, social care services, and voluntary organisations can help ensure that migrants can access not only healthcare but also broader forms of support (UNHCR, 2013; Beirens et al., 2007).

Finally, the use of interpreters is an important practical response to the language barriers that many forced migrants face, helping to improve communication and access to appropriate care (Johansson Blight et al., 2009).

1.3.4 Vulnerable subpopulations in the migration context

While migration and forced displacement can affect health across populations, these risks are not distributed evenly. Certain subpopulations may experience compounded vulnerabilities due to their life stage, gender, or social position, resulting in distinct health and mental health challenges (Kadir et al., 2019; Virgincar et al., 2016). The following section, therefore, narrows the discussion to women, whose migration experiences, particularly in the context of forced migration, raise important concerns in relation to health and well-being.

1.4 Migration, risks, and health challenges among migrant and forced migrant women

1.4.1 Migration and forced displacement among women

Women constitute a significant portion of the global migrant population. According to UNHCR, 50% of global migrants are women (UNHCR, 2025c). While family reunification remains a common reason for migration among women, an increasing number are now migrating independently, driven by factors such as economic opportunities, education, and social mobility (UN WOMEN, 2023). This highlights that women's migration is not limited to dependence on family members or partners, but also involves aspiration and independent decision-making.

However, forced migration among women requires separate attention. The challenges of forced migration—driven by conflict, persecution, violence, and disasters—are often more complex and shaped by multiple layers of vulnerability. The reasons behind female forced migration are multifaceted and may include fleeing armed conflicts, escaping domestic violence or gender-based violence, and responding to the effects of natural disasters and severe economic instability (IOM, 2024). In some cases, conflict and displacement also push women into precarious forms of migration in search of survival and income-generating opportunities, often in domestic work, healthcare, or other caregiving roles, where they may remain exposed to exploitation, abuse, and human trafficking (Tastsoglou et al., 2021). In fact, 71% of all human trafficking victims globally are women and girls (UNODC, 2016).

The physical and psychological toll on forced migrant women is significant (UN WOMEN, 2023). In Central America, for example, many women migrating through dangerous routes such as the Darién Gap face a high risk of rape, violence, and assault during their journey (Fonju and Amadou, 2024). These experiences are important to recognise because they show that women within forced migrant populations may encounter distinct risks that differ from those of migrant women more broadly.

1.4.2 Maternal health and perinatal mental health among migrant and forced migrant women

While much of this chapter has addressed general health and mental health risks among migrants, it is also important to highlight specific subpopulations who may face compounded vulnerabilities. The perinatal period is a critical example of how migration-related risks can intersect with women's health needs and mental well-being. Pregnancy and matrescence (the psychological and social transition to motherhood) may introduce additional vulnerabilities that intensify the health and mental health risks associated with migration and displacement (Athan, 2024; Tankink et al., 2024). This section provides a brief overview of the evidence on maternal and perinatal health outcomes, as well as perinatal mental health, among migrant women, before considering the more limited evidence relating specifically to forced migrant women.

According to a 2016 WHO review, migrant women experience significantly poorer pregnancy outcomes compared to non-migrant women (Keygnaert et al., 2016). A systematic review analysing data from 12 European countries between 1966 and 2004 similarly found that migrant women experienced poorer perinatal outcomes compared to the host populations, including a higher incidence of delivering low birthweight babies (aOR = 1.43, 95% CI 1.42-1.44, p-value < 0.01), pre-term deliveries (aOR = 1.24, 95% CI 1.22-1.26, p-value < 0.01), perinatal mortality (aOR = 1.50, 95% CI 1.47-1.53, p-value < 0.01), and congenital malformations (aOR = 1.61, 95% CI 1.57-1.65, p-value < 0.01) (Bollini et al., 2009). These outcomes may be attributed to a range of factors, including poor access to prenatal care, malnutrition, and stress during migration.

Furthermore, a study in Sweden reported that the odds ratio of neonatal deaths was 18 times higher among African migrant women compared to Swedish mothers (Essén et al., 2002). Additionally, multiple studies have found that pregnant migrant women are more likely to give birth to low birthweight infants compared to non-migrant women (Juárez et al., 2019; Villalonga-Olives et al., 2017; Khanolkar et al., 2015). However, some studies have reported a protective effect of migrant status, showing lower rates of preterm delivery and low birthweight among certain groups of migrant women (Urquia et al., 2012; Kirby, 2011). Such

findings may reflect a 'healthy migrant effect' or factors such as higher socio-economic status among specific subgroups, rather than a universal protective influence of migrant status itself (Domnich et al., 2012). Preterm deliveries also appear to be more common among displaced women, with studies reporting higher rates of preterm birth in this population (Sosta et al., 2008; Harding et al., 2006).

Maternal mortality is another critical issue, with migrant women showing significantly higher mortality rates compared to indigenous-born women. A meta-analysis covering 4,995 maternal deaths in 42 million pregnancies in Western Europe found that maternal deaths were twice as high among migrant women (RR = 2.00, 95% CI 1.72-2.33) compared to non-migrants (Pedersen et al., 2014). Similarly, a study in England and Wales analysed data from 1970–1985 on maternal mortality in more than 10 million pregnancies. The results showed that migrant women were 2.37 times more likely to die due to pregnancy-related causes than non-migrant women (95% CI 2.11-2.66) (Ibison et al., 1996). Moreover, a study in the Netherlands reported an even higher rate of maternal mortality among migrants compared to non-migrant women (RR = 3.87, 95% CI 2.62-5.71), with particularly high rates among migrants from the Caribbean (RR = 4.6, 95% CI 3.8-5.7) and West Africa (RR = 10.3, 95% CI 8.0-13.2) (Schuitemaker et al., 1998). Evidence also suggests that maternal mortality may be particularly elevated among displaced pregnant women (Acunzo et al., 2018; Barona-Vilar et al., 2014).

Alongside these physical and obstetric risks, the perinatal period may also represent a time of heightened mental health vulnerability among migrant women. Earlier reviews suggest that migrant women are at increased risk of depression during pregnancy and the postnatal period, with Collins et al. reporting that postnatal depression may affect up to 42% of migrant women, compared with around 10%–15% of native-born women (Collins et al., 2011). Fellmeth et al. similarly identify a high burden of perinatal depression among migrant women from low- and middle-income countries (Fellmeth et al., 2017). In addition to depression, anxiety and trauma-related symptoms are also reported among migrant women during the perinatal period. For example, Gagnon et al. (2013) found that 20.9% of immigrant women in Canada experienced symptoms of depression, somatisation, or anxiety, while 15% reported symptoms of PTSD (Gagnon et al., 2013). More broadly, Iliadou (2019) notes that migrant women

constitute a particularly vulnerable group to mental disorders during the perinatal period (Iliadou et al., 2019).

However, the evidence is less developed for forced migrant women specifically. Collins et al. note that relatively little evidence examines postnatal depression among refugee and asylum-seeking women (Collins et al., 2011). Giscombe et al. similarly state that research into the mental health needs of perinatal refugee and asylum-seeking women is limited (Giscombe et al., 2020). Taken together, these findings suggest that while perinatal mental health among migrant women receives increasing attention, evidence focusing specifically on forced migrant women remains relatively sparse and fragmented. These gaps are explored further later in the thesis, in Chapter 3, which presents a scoping review of perinatal mental health among forced migrant women.

1.5 Migration trends to Europe

This section offers only a brief overview of recent migration trends to Europe, establishing context for the regional focus in the subsequent chapter of the thesis. A more detailed analysis of European migration patterns and their mental health implications will be presented in the next chapter, which uses large-scale survey data to explore disparities between migrants and non-migrant populations.

Europe has experienced significant shifts in migration patterns over recent years. In 2022, the European Union (EU) recorded 5.1 million immigrants from non-EU countries, more than doubling the 2.4 million reported in 2021 (Eurostat, 2024). Despite these increases, irregular migration into the EU has seen fluctuations. In 2024, approximately 199,200 irregular border crossings were detected, a decrease from 270,700 in 2023 (UNHCR, 2025a).

As of 2020, Europe hosted nearly 87 million international migrants, marking a 16% increase since 2015. Notably, over half of these individuals (44 million) were born in Europe but resided elsewhere within the region, while the remainder originated from non-European countries (IOM, 2025).

1.6 Understanding migrant mental health and well-being through theoretical frameworks

Building on the earlier discussion of migration, this thesis adopts the Social-Ecological Model (SEM) as its central theoretical framework for examining migrant mental health and well-being disparities. The SEM was chosen for this thesis because it provides a multilevel perspective, recognising that health outcomes result from dynamic interactions across individual, social, and structural factors (McLeroy et al., 1988; Bronfenbrenner, 1979). This multilevel approach is widely used in public health to identify how risk and protective factors are distributed and to design interventions that address underlying determinants of health inequalities (Golden and Earp, 2012; Trickett et al., 2011).

Alternative theoretical perspectives were also considered in developing this thesis. Goffman's Stigma Theory offers useful insight into how negative labels and discrediting processes operate at the individual and interpersonal levels (Goffman, 1990, p. 14); Social Identity Theory helps explain in-group and out-group dynamics and how these may reinforce exclusion (Tajfel and Turner, 1978); Insider/Outsider Theory highlights structural inequalities between those with secure social membership and those positioned at the margins (Lindbeck and Snower, 2001); and intersectionality draws attention to how migration status may intersect with gender, race, class, and legal status to shape unequal experiences (Crenshaw, 1989). These perspectives are valuable for understanding specific mechanisms of exclusion and are drawn upon where relevant in later chapters. However, none of them alone provides a sufficiently broad organising framework for a thesis that spans multiple levels of influence. The SEM was therefore selected as the overarching framework because it enables these processes to be situated within a single multilevel structure linking individual, social, and structural determinants of mental health.

In the context of migration and mental health, the SEM offers a structured way to examine how processes of stigma, marginalisation, and exclusion can operate at different levels to produce and sustain disparities. This thesis applies the SEM through three key levels of analysis:

- Micro-level (individual): This level focuses on personal experiences of trauma, mental health needs, and resilience. It includes pre-migration stressors such as conflict and violence, experiences during migration journeys, and post-migration adjustment (Scharpf et al., 2021). This level also recognises how individual perceptions of stigma or internalised exclusion can affect mental well-being (Scharpf et al., 2021). This micro-level mechanism helps explain why migrants may experience heightened psychological distress, often shaped by feelings of shame, isolation, or being labelled as outsiders.
- Meso-level (social/interpersonal): This level considers social networks, community relationships, and cultural contexts. It examines how interpersonal interactions can reinforce or mitigate experiences of discrimination and social exclusion. Processes such as social support, community integration, and cultural norms can either buffer or exacerbate mental health risks (Oppedal and Idsoe, 2015). At this level, experiences of stereotyping and marginalisation within communities become critical for understanding mental health outcomes.
- Macro-level (structural): This level focuses on policy, legal status, institutional barriers, and access to services. It recognises that structural determinants such as restrictive immigration policies, limited access to healthcare, or socioeconomic inequality might shape the broader environment in which migrants navigate their mental health needs. These structural conditions can institutionalise exclusion and sustain health inequities by creating barriers to essential resources and opportunities.

Although presented separately, these levels are closely interconnected. For example, stigma may be experienced at the individual level, reinforced through social and group processes, and institutionalised through policy and service structures.

This framework has been applied in migration health research to map multilevel influences on mental health, highlighting how individual experiences intersect with social relationships and institutional contexts (Scharpf et al., 2021; Chynoweth et al., 2020). By using the SEM, this thesis examines the interplay between micro, meso, and macro factors that produce mental health disparities among migrants.

The SEM also guides the structure and analytical approach of the thesis. Chapter 1 (this chapter) sets out the SEM concepts that guide the remainder of the work. Chapter 2 applies the SEM to large-scale European survey data, comparing migrant and non-migrant mental health outcomes while considering individual, social, and structural-level factors. Chapter 3 uses the SEM to examine perinatal mental health among forced migrant women through a scoping review, focusing on how vulnerabilities and protective factors operate across different levels. Chapter 4 examines macro-level determinants by evaluating UK resettlement policies for Afghan and Ukrainian forced migrants and their implications for mental well-being. Chapter 5 synthesises insights across chapters to develop recommendations for research, policy, and practice.

By adopting the SEM, the thesis acknowledges that migrant mental health disparities cannot be understood through single-level explanations. Instead, it recognises the importance of analysing how stigma, marginalisation, and exclusion operate across micro, meso, and macro levels to produce complex patterns of vulnerability and resilience. This comprehensive, multilevel perspective aims to inform research, policy, and practice that address these intersecting risks in a holistic and sustainable manner.

1.7 Conclusion

This chapter has outlined the conceptual and historical foundations of migration, examined the drivers and types of movement, and explored the unique risks and health challenges faced by migrants. It has also introduced the SEM as the theoretical framework for the thesis, highlighting how stigma, marginalisation, and exclusion operate across micro (individual), meso (social/interpersonal), and macro (structural) levels to shape mental health outcomes for migrants.

Given the prominence of the European region as a key destination and its sizeable migrant population, the next chapter will present a Secondary Data Analysis (SDA) that narrows the focus on migration and mental health to the European context. This analysis will investigate mental health disparities between migrant and non-migrant populations in Europe, helping to establish a regional context for understanding the multilevel drivers of migrant mental health to inform subsequent discussions on policy and intervention.

2 A European Lens on Migrant Mental Health Outcomes: A Secondary Data Analysis

2.1 Chapter overview

Understanding how migration status impacts mental health outcomes is central to this thesis. While existing literature recognises the elevated mental health risks faced by migrants, large-scale analyses remain limited, particularly those that examine how migration intersects with broader social determinants of health. This chapter addresses this gap by using data from the European Health Interview Survey (EHIS) Wave 3 (2018) to explore the relationship between migration status and the prevalence of depression and depression severity across the eligible European countries.

Building on the foundational chapter, this secondary data analysis (SDA) serves a dual purpose: first, to quantify disparities in the prevalence of depression and depression severity between migrants and non-migrants in Europe; and second, to examine how these outcomes are shaped by key sociodemographic, social, and structural factors such as healthcare access, socioeconomic status, and social support. This chapter, therefore, contributes to a deeper understanding of the multilevel factors associated with depression-related outcomes and helps explain the disparities observed across migrant and non-migrant populations.

In doing so, this chapter addresses Thesis Research Question 1, which asks what differences in depression prevalence and depression severity are observed between migrant and non-migrant populations in Europe, and Research Question 2, which examines which individual, social, and structural factors intensify or mitigate these risks.

By identifying key risk factors and vulnerabilities, this chapter provides an essential empirical foundation for discussions on migrant mental health throughout the thesis. The findings offer critical insights into disparities in depression-related outcomes between migrants and non-migrants, laying the groundwork for further exploration in subsequent chapters.

2.2 Background

Migration within and into Europe has risen substantially in recent decades, transforming both the demographic profile and the social policy landscape of many European countries (McAuliffe and Triandafyllidou, 2021). While many migrants arrive in search of better socio-economic opportunities and safety, they often confront a range of challenges including language barriers, discrimination, housing instability, and limited social networks, which can profoundly affect their mental health (Olorunlana, 2019; Spallek et al., 2011).

Although migrants in Europe can experience a "*healthy migrant effect*", whereby new arrivals often report better physical health indicators than the native-born population, such advantages may not extend to mental health (Norredam et al., 2014; Domnich et al., 2012). The scientific literature points to higher prevalence of common mental disorders among migrant groups compared to non-migrants (Turrini et al., 2017; Close et al., 2016). Factors associated with these vulnerabilities include pre-migration stressors such as exposure to conflict or severe socio-economic hardship, peri-migration hardships like unsafe transit, and post-migration barriers that can undermine social integration (Priebe et al., 2016).

Social determinants such as employment status, language proficiency, social support, and healthcare access prominently affect migrant mental health outcomes (Hynie, 2018; Mladovsky, 2009). Yet policy frameworks and healthcare services often fail to accommodate migrants' unique needs, resulting in unmet mental health care needs and poorer outcomes (World Health Organization, 2018; Rechel et al., 2013). Moreover, large-scale analyses of these issues remain relatively scarce, partly due to a lack of standardised, disaggregated data across European countries (Spallek et al., 2011). In particular, distinctions between diverse migrant subgroups (forced vs. non-forced, recent vs. long-term) are frequently absent in routine health data.

Despite the complexity of migrant health needs, large-scale and cross-national evidence on depression-related outcomes among migrants in Europe remains limited. Routine health information systems in many European countries do not consistently collect or include

migration-specific variables such as country of birth, legal status, migration pathway (forced versus voluntary), or length of stay (Bozorgmehr et al., 2023). Broader analyses that capture a range of sociodemographic, economic, and healthcare-related variables can shed light on the interplay between migration status and depression-related outcomes, offering insights for more responsive policies.

In this context, the European Health Interview Survey (EHIS) Wave 3 was selected as the most suitable dataset for this chapter. EHIS provides large-scale, cross-national, and harmonised health data across European countries and includes a validated measure of depressive symptoms (Patient Health Questionnaire-8 (PHQ-8)), together with a broad range of sociodemographic, health, healthcare access, and social support variables. This makes it particularly well suited to examining both differences in depression outcomes between migrant and host populations and the wider determinants associated with these outcomes.

Within this broader field of migrant mental health, depression was selected as the focus of this chapter because it is the mental health outcome that can be examined most robustly and consistently using EHIS Wave 3. The dataset includes a harmonised and validated measure of depressive symptoms, which makes it possible to assess both depression prevalence and depression severity across countries in a comparable way. This is particularly important for cross-national secondary data analysis, where the use of a standardised outcome can strengthen comparability between migrant and host populations. In addition, this focus aligns most closely with Thesis Research Questions 1 and 2:

RQ1: What differences in depression prevalence and depression severity are observed between migrant and non-migrant populations in Europe?

RQ2: Which individual, social, and structural factors intensify or mitigate depression-related mental health risks among migrant and non-migrant populations in Europe?

Accordingly, this study aims to investigate the association between migration status and depression-related outcomes, particularly depression prevalence and depression severity, while considering key sociodemographic, social support, and health-related factors.

To achieve these aims, this chapter has the following objectives:

1. Summarise the EHIS Wave 3 data for migrants (including settled and non-settled migrants, defined later in the chapter) and home populations across the eligible European countries (Austria, Cyprus, Germany, Estonia, Italy, Luxembourg, Portugal, Sweden, and Slovenia).
2. Compare the prevalence and severity of depression between migrants and home populations.
3. Explore the associations between migration status and depression prevalence and severity, adjusting for sociodemographic characteristics, social support, and health-related factors.
4. Identify high-risk groups with higher prevalence of depression or greater depression severity.
5. Examine interaction effects between migration status and other determinants of depression-related outcomes.
6. Ensure robustness and inform future data collection and policy recommendations.

2.3 Methods

2.3.1 Research design

This study employed a cross-sectional secondary data analysis design using data from the European Health Interview Survey (EHIS) Wave 3 (Eurostat, 2018a) to examine depression-related outcomes among migrant and home populations across nine European countries. The primary focus was to explore relationships between depression-related outcomes, migration status, and other individual, social, and structural factors. A secondary data analysis approach was appropriate because it allowed the use of an existing large-scale, harmonised, and population-based dataset to investigate cross-national patterns that would not have been feasible to generate through primary data collection within the scope of this thesis. Such an approach is particularly valuable when examining health inequalities across multiple countries, as it enables the analysis of large samples and standardised measures while making efficient use of existing data resources (Johnston, 2014).

2.3.2 Data source

The data for this study were drawn from the EHIS Wave 3, which was conducted across all EU Member States (Eurostat, 2018b). EHIS consists of four modules covering health status, health determinants, healthcare, and sociodemographic characteristics. It is administered every five to six years, with Wave 3 carried out in 2019 for most countries, in 2018 for Belgium, and in 2020 for Germany, Albania, and Malta. Previously, Wave 1 was conducted between 2006 and 2009 in 17 EU Member States, Switzerland, and Turkey, and Wave 2 was conducted between 2013 and 2015 in all EU Member States, Iceland, Norway, and Turkey (Eurostat, 2018b).

During the scoping stage, other potentially relevant sources of data on migrant populations were also explored, including UNHCR microdata. However, no accessible alternative dataset was identified that offered the same combination of cross-national coverage, harmonised measurement, information on migration-related proxies, a validated depression measure, and relevant sociodemographic and healthcare variables required for the present analysis. EHIS Wave 3 was therefore selected as the most appropriate available dataset for addressing the

research questions of this chapter. Its main strengths were its large cross-national coverage, standardised data collection, and inclusion of a harmonised measure of depressive symptoms alongside a wide range of socioeconomic and health-related variables. The implications of these strengths, alongside the dataset's limitations, are discussed further in Section 2.5.1.

2.3.3 Data collection and sampling

The European Health Interview Survey (EHIS) Wave 3 was designed as a nationally representative probability sample, meaning every individual in the target population had a known, non-zero chance of selection (Eurostat, 2018a). The survey targeted individuals aged 15 and over residing in private households within participating countries (Eurostat, 2018a). National authorities were responsible for implementation and for ensuring that the selected samples reflected their respective populations.

Data collection was conducted using a combination of methods, including face-to-face interviews, telephone interviews, and self-administered questionnaires (postal and web-based formats), depending on national capacity and logistics (Eurostat, 2018a). Data collection took place over at least a three-month period between 2018 and 2020, with one mandatory month falling between September and December in each country's data collection year. This scheduling was designed to account for seasonal variations in health status and healthcare utilisation (Eurostat, 2018a).

Sampling was based on single- or multi-stage probability designs, tailored to national population registers or household listings (Eurostat, 2018a). Where direct lists of individuals were not available, a multi-stage sampling approach was employed, first selecting households or dwellings, and then randomly selecting one eligible individual per household using predefined random selection (Eurostat, 2018a). Stratification techniques were applied to improve precision by ensuring representativeness across key demographic (e.g., age, sex) and geographic (e.g., region, urbanisation) variables (Eurostat, 2018a).

In case of non-response, interviewers made at least three contact attempts before classifying a household or individual as non-responding. These attempts were documented by field staff,

including date, mode of contact (e.g., phone or in-person), and outcome, as part of national quality control procedures (Eurostat, 2018a).

For more details on the EHIS data collection and sampling process, see the EHIS Wave 3 Methodological Manual (Eurostat, 2018a).

2.3.4 Ethics and process of obtaining and using data

Access to the dataset was obtained through a formal data request submitted to Eurostat, the statistical office of the European Union. The application process included submission of a comprehensive application form (see **Appendix B**) outlining the intended use and agreement to Eurostat's data usage regulations (see **Appendix C**). Access to the dataset was granted after the data request was approved by Eurostat.

Prior to submission, relevant variable lists and documentation provided by Eurostat online were reviewed to identify data items aligned with the research questions. Specific variables were requested based on their relevance to migration status, mental health, sociodemographic, and associated health-related factors.

The original data were provided in .csv (comma-separated values) format. The dataset was fully anonymised and provided under Regulation (EC) No 223/2009 on European statistics, which governs access to confidential data for research purposes. All researchers involved, including the principal researcher (myself) and academic supervisors (Amanda Mason-Jones and Ada Keding), signed Eurostat's Confidentiality Declaration form. This declaration outlined strict data protection measures, including restricted access, secure data storage, and an agreement to destroy the data after project completion.

Because of full anonymisation and adherence to confidentiality provisions, no additional institutional ethical approval was required.

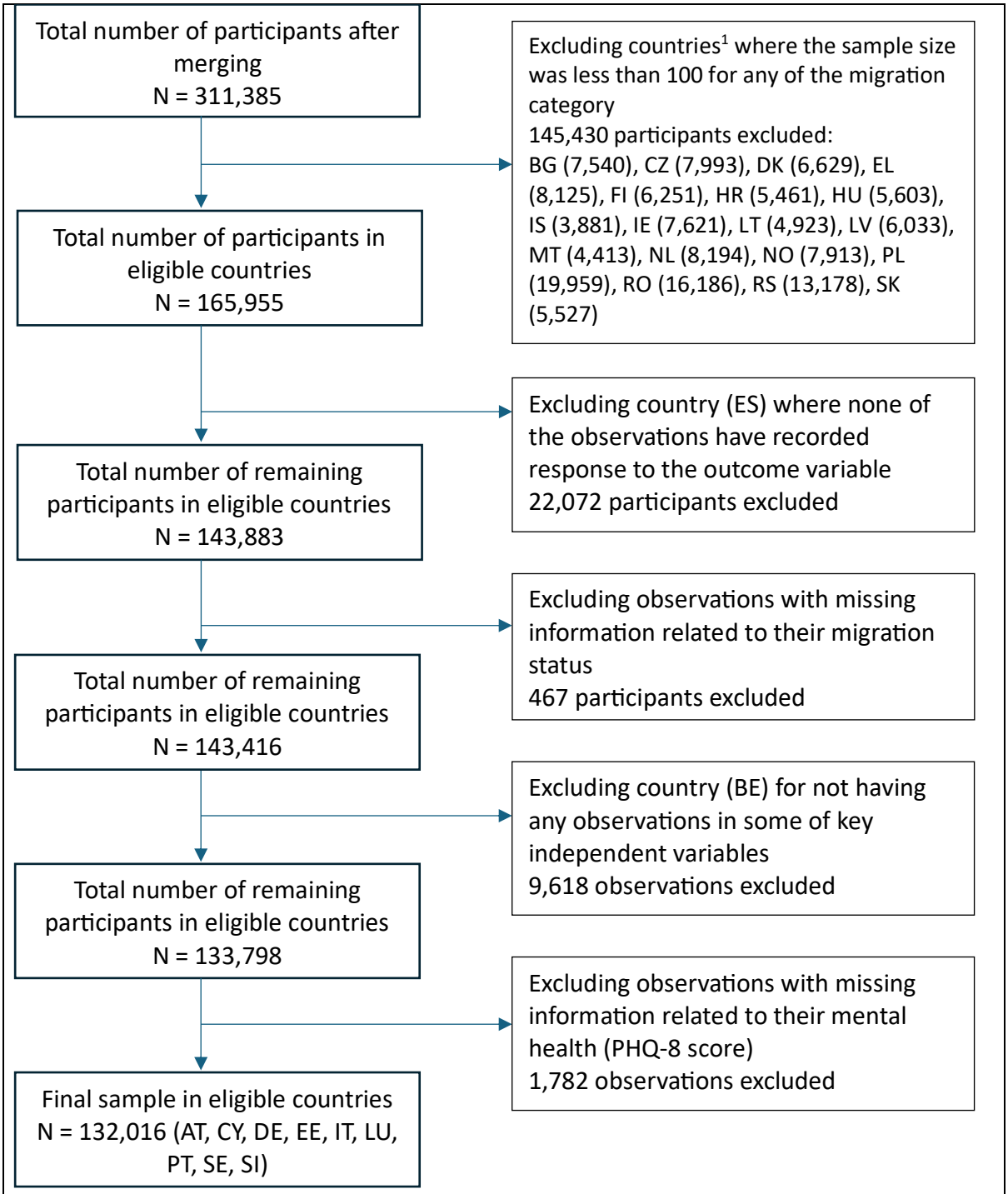
2.3.5 Data management

2.3.5.1 Data selection and preparation

The datasets obtained from Eurostat were provided as individual .csv files for each of the 29 participating countries. These files were first converted to .dta (STATA) format. Following this, the datasets were merged using STATA. Since the variables were harmonised across all country files, the merging process was straightforward. The merging procedure, as well as code for data cleaning, analysis, and all other relevant steps, can be found in the project's GitHub repository (https://github.com/Yamma-Aria/EHIS-Wave-3).

A decision was made to exclude countries with fewer than 100 individuals in any of the migrant groups due to concerns regarding statistical reliability and representativeness. Small sample sizes can lead to unstable estimates and reduced generalisability of findings (Tipton et al., 2017). The detailed sample selection process, including country-level and participant-level exclusions, is presented in **Figure 2**.

Missing data were assessed across all analytical variables before model fitting. Most variables showed very low levels of missingness, generally below 2% in the final eligible-country dataset. Observations with missing information on key variables central to the analysis, particularly migration status and the PHQ-8 outcome, were excluded from the final analytic sample. However, where a participant was missing a response to only one PHQ-8 item, individual mean imputation was used to derive a complete scale score from the remaining seven items. This approach was considered appropriate because the PHQ-8 items measure the same underlying construct, imputation was restricted to cases with only a single missing item, and individual mean imputation has been shown to perform well in multi-item depression scales when missingness is limited (Shrive et al., 2006). In such cases, the participant's responses to the remaining observed items provide sufficient information to estimate the missing response more plausibly than deleting the case entirely. By contrast, observations with more substantial missingness on the PHQ-8 were excluded from the final analysis.



Note: Austria (AT), Belgium (BE), Bulgaria (BG), Croatia (HR), Cyprus (CY), Czech Republic (CZ), Denmark (DK), Estonia (EE), Finland (FI), Germany (DE), Greece (EL), Hungary (HU), Iceland (IS), Ireland (IE), Italy (IT), Latvia (LV), Lithuania (LT), Luxembourg (LU), Malta (MT), Netherlands (NL), Norway (NO), Poland (PL), Portugal (PT), Romania (RO), Serbia (RS), Spain (ES), Slovakia (SK), Slovenia (SI), and Sweden (SE).

Figure 2 | Flow chart of the number of included participants with reasons for exclusions.

2.3.5.2 Data cleaning and variable derivation

The original variable names were often numeric or abbreviated (e.g., ss1) and were renamed to more meaningful labels (e.g., num_socialsupport) to improve clarity. Yes/No responses were recoded to 0 = No and 1 = Yes for consistency.

Variables of interest and variable selection

Variable selection was informed a priori by empirical evidence and by the Social-Ecological Model (SEM), which was used to ensure that determinants operating across individual, social, and structural levels were represented in the analysis. Accordingly, the analysis included variables reflecting individual characteristics and health states, social support, and broader socioeconomic and healthcare-access factors. This allowed the study to examine whether differences in depression prevalence and depression severity were associated not only with migration status, but also with determinants operating across multiple levels.

Depression outcome and related mental health covariates

Information relevant to mental health in this study was derived from three key variables. The primary outcome measure was self-reported symptoms of depression based on the Patient Health Questionnaire-8 (PHQ-8) (Kroenke et al., 2009). In addition, two mental health-related variables were included as covariates: whether the participant had received a diagnosis of depression in the past 12 months, and whether they had consulted a psychologist or psychiatrist in the past 12 months. While the analysis in this chapter focuses on depression prevalence and depression severity derived from the PHQ-8, these additional variables were included to account for prior diagnosis of depression and recent mental healthcare use.

The PHQ-8 is a modified version of the Patient Health Questionnaire-9 (PHQ-9), excluding the ninth item, which assesses suicidal ideation (Kroenke et al., 2009). The PHQ-9 is a widely used measurement tool for screening, diagnosing, and measuring the severity of depression (Manea et al., 2015). The PHQ-9 consists of nine items, each corresponding to one of the DSM-IV criteria for depressive disorder (American Psychiatric Association, 2000). The PHQ-9 has been validated in numerous studies across diverse populations and settings. It has

demonstrated a high sensitivity (88%) and specificity (88%) for diagnosing depression (PHQ-9 ≥ 10) (Kroenke et al., 2001). Similarly, several studies have demonstrated the validity and reliability of the PHQ-8 as a robust measure for assessing depression. For instance, in the systematic review by Kroenke et al. (2010), a nearly perfect correlation (r = 0.998) was found between PHQ-8 scores and PHQ-9 scores (Kroenke et al., 2010). As a result, the review by Kroenke et al. (2010) recommended using an identical cut-off score for both measures.

Taken together, these features make the PHQ-8 a suitable measure for this study. Its close correspondence with the more widely used PHQ-9 supports comparability with the broader depression literature, while the omission of the suicidal ideation item makes it particularly practical for large-scale population surveys where immediate risk assessment is not feasible. In addition, the use of the standard cut-off score of ≥10 for probable depression is consistent with prior PHQ-8 research and supports comparability across countries in a harmonised dataset such as EHIS (Kroenke et al., 2009). More recent evidence also suggests that the PHQ-8 demonstrates adequate reliability, supporting its use in cross-national analyses (Wu et al., 2020).

The PHQ-8 consists of eight items measuring the frequency of core symptoms of depression over the past two weeks. Responses to these items were coded from 1 to 4 (1 Not at all; 2 Several days; 3 More than half the days; 4 Nearly every day) in the dataset, rather than the standard coding of 0 to 3 used in PHQ-8/PHQ-9 (0 Not at all; 1 Several days; 2 More than half the days; 3 Nearly every day). Therefore, these were recoded into new variables (mh1a_new to mh1h_new) to align with the standard scoring method. The new variables were then summed to create the PHQ-8 score, providing information related to participants' symptoms of depression.

The depression diagnosis variable (cd_depress_12m) recorded whether participants had been diagnosed with depression in the past 12 months. Prior research has shown that a history of depression is a strong predictor of current mental health status (Hasin et al., 2005; Kessler et al., 2003; Lewinsohn et al., 1999). Including this variable allows the analysis to control for the potential confounding effect of prior depression on the current symptoms of depression among participants.

The psychological consultation variable (last_psycho_12m) captured whether participants had consulted a psychologist or psychiatrist in the past 12 months. Engagement with mental health professionals is associated with better management of mental health conditions and improved outcomes (Mojtabai, 2009; Wang et al., 2005). This variable was therefore included as a covariate reflecting recent mental healthcare use.

Migration status

There were no directly relevant migration status variables available in the dataset. However, the variables for 'Birthplace' and 'Citizenship' were combined to serve as proxies for three different migration status categories (i.e., home population, settled migrants, and non-settled migrants) (**Table 4**). In the absence of direct indicators such as migration pathway, legal status, or length of stay, secondary analyses of routine health datasets often need to rely on proxy variables to distinguish broad migration-related categories (Bozorgmehr et al., 2023). Birthplace and citizenship were therefore used in combination to derive broad migration-status categories that could reflect meaningful differences in likely settlement and integration patterns within the limits of the available data. Although this approach cannot capture the full complexity of migration experiences, it provides a pragmatic and transparent way of distinguishing between home populations, migrants with EU citizenship (settled migrants), and migrants without EU citizenship (non-settled migrants), which was sufficient for the comparative aims of this chapter. These variables were initially categorised as follows:

- Birthplace: 'born in host country'; 'born in EU countries'; 'born in non-EU countries'.
- Citizenship: 'citizen of host country'; 'citizen of an EU country'; 'citizen of a non-EU country'.

Table 4 | Migration status derived from 'Birthplace' and 'Citizenship' variables in the dataset.

Migration status	Birthplace	Citizenship
Home population	EU country (host-born or EU-born)	EU country (host-citizen or EU-citizen)
Settled migrants	Non-EU country	EU country
Non-settled migrants	Non-EU country	Non-EU country

Note: The fourth possible combination (EU country-born/non-EU citizen) had zero observations in the final analytic sample and was therefore not included as a separate migration category.

Sociodemographic characteristics

The survey included numerous demographic variables. Those selected for the analysis were chosen to control for known determinants of mental health. These included sex, age, residential area, education, employment, marital status, household composition, and income level.

Sex and Age: Sex and age were retained in their original formats. In the dataset, age was grouped into 5-year bands (15–19, 20–24, 25–29, 30–34, 35–39, 40–44, 45–49, 50–54, 55–59, 60–64, 65–69, 70–74, 75–79, 80–84, 85+), and sex was coded 1 = Male and 2 = Female. These variables fall under the micro-level of the SEM, as they are individual attributes that shape one's susceptibility to mental health outcomes. Gender differences in mental health are well-documented, with women typically reporting higher rates of depression and anxiety than men (Kuehner, 2017; Parker and Brotchie, 2010; Nolen-Hoeksema and Hilt, 2016). Age is also a critical factor, as mental health can vary significantly across different life stages (Blazer et al., 1994).

Individuals aged under 18 were included because the EHIS sampling frame covers persons aged 15 years and over living in private households, and the accessible age variable was already grouped into 5-year bands beginning at 15-19. Excluding those aged under 18 would therefore also have required excluding participants aged 18-19, which would have reduced the representativeness of the youngest age group available in the dataset. In addition, this study used fully anonymised secondary data obtained from Eurostat, and no individual participants were directly recruited or contacted by the researcher. As such, no additional ethical concerns arose beyond those already addressed through Eurostat's data governance and confidentiality procedures.

Geographical area: Residential area was used as provided in the dataset, distinguishing between whether participants lived in cities, towns and suburbs, or rural areas. This variable represents a meso-level factor within the SEM, as it reflects the characteristics of the immediate environments where social interactions occur, such as neighbourhoods and communities (Golden and Earp, 2012; McLeroy et al., 1988). Residential area was not included on the assumption that either urban or rural settings are uniformly more protective or more harmful for mental health. Rather, it was treated as a contextual factor that may shape mental health in different ways. Urban areas may offer greater access to healthcare and other services, but may also be associated with stressors such as crowding, social fragmentation, or economic pressure. Rural areas, by contrast, may be associated with stronger community ties in some settings, but also poorer access to mental health services and other forms of support. The variable was therefore included to capture possible contextual differences in depression-related outcomes across residential settings (Peen et al., 2010).

Educational attainment: Education levels in the dataset were aligned with the ISCED classification (0 No formal education; 1 Primary education; 2 Lower secondary education; 3 Upper secondary education; 4 Post-secondary education; 5 Short-cycle tertiary education; 6 Bachelor's or equivalent level; 7 Master's or equivalent level; 8 Doctoral or equivalent). To standardise this variable, a new variable was generated where lower and upper secondary education levels were combined to form 'Secondary education', and short-cycle tertiary, bachelor's, master's, and doctoral were combined to form 'Tertiary education'. The final variable had the following categories: 0 No formal education; 1 Primary education; 2 Secondary education; 3 Post-secondary education; 4 Tertiary education.

Higher educational attainment is consistently associated with better mental health outcomes, likely due to improved socioeconomic status, health literacy, and access to resources (Bjelland et al., 2008; Cutler and Lleras-Muney, 2006). Within the SEM, educational attainment is primarily conceptualised as an individual factor (micro-level), as it reflects the individual's acquired knowledge and skills (McLeroy et al., 1988). However, given that educational opportunities are shaped by institutional and social environments (e.g., schools), it may also reflect meso-level influences in certain contexts (McLeroy et al., 1988).

Employment status: Employment status was detailed across several categories such as employed, unemployed, retired, unable to work due to long-standing health problems, student, fulfilling domestic tasks, and a general 'Other' category. Unemployment and unstable job conditions are strongly linked to higher rates of depression and anxiety (Paul and Moser, 2009; McKee-Ryan et al., 2005; Dooley et al., 1994). Within the SEM, employment status is classified as a meso-level factor, as it reflects the individual's interaction with broader institutional structures and economic systems, such as the labour market and workplace environment (McLeroy et al., 1988).

Marital status: This variable captured legal marital status, categorised as single, married or in a registered partnership, widowed, and divorced. Being married or having a partner generally provides emotional support and stability, which can potentially protect against mental health problems (Simon, 2002; Kiecolt-Glaser and Newton, 2001). Within the SEM, marital status is typically situated at the meso-level, as it reflects an individual's close social and familial relationships. These interpersonal dynamics, particularly the presence or absence of supportive partnerships, can influence mental health through mechanisms such as emotional support, social integration, and shared coping resources (Umberson et al., 2012; McLeroy et al., 1988).

Household size and composition: The household size variable (hhsize) and the variable indicating the number of persons aged 13 or younger (n_under14) were collected in a continuous form. Household type (hhtype) was categorised into one-person household, lone parent with children under 25, couple without children, couple with children under 25, and couple with children, and a general 'Other' category. These variables were included to account for the impact of family structure and caregiving responsibilities on depression-related outcomes. Larger households or those with dependent children may experience different levels of emotional support, financial pressure, or caregiving burden, all of which are known to affect mental health outcomes (Milkie et al., 2008).

Within the SEM, household size and composition are considered meso-level factors, as they reflect the immediate social and familial environment surrounding the individual. This level

captures how interactions within the household can influence mental health through mechanisms of support, strain, and daily social interaction (McLeroy et al., 1988).

Income level: The (hhincome) variable quantified the net monthly equivalised income and was categorised into five income quintiles: 1st quintile (lowest), 2nd quintile, 3rd quintile, 4th quintile, and 5th quintile (highest). Economic status is a critical determinant of mental health, with lower income levels being associated with higher stress and mental health issues (Lorant et al., 2003).

Within the SEM, income level is best understood as a macro-level factor. It reflects broader structural and policy-driven determinants, such as economic inequality, labour market conditions, and welfare systems, that influence individuals' access to health-promoting resources (WHO, 2010).

Health status

Self-perceived general health: The (hs_genhealth) variable was used as provided in the dataset, comprising five categories: "*Very good*", "*Good*", "*Fair*", "*Bad*", and "*Very bad*". This variable was not altered. This variable provides a subjective assessment of overall health, which is strongly associated with depression-related outcomes (Eriksson et al., 2001). Within the SEM, self-perceived health is best situated at the individual (micro) level, as it pertains to an individual's personal health beliefs, attitudes, and conditions.

Long-standing health problem and chronic conditions variables: The variable (hs_health_prob) was used to indicate whether the respondent reported having a long-standing health problem, with responses Yes or No. In addition, the dataset included a series of binary variables that captured whether the respondent had experienced any of the following chronic conditions in the past 12 months:

- Asthma (including allergic asthma)
- Chronic bronchitis, chronic obstructive pulmonary disease (COPD), or emphysema
- Myocardial infarction or its chronic consequences
- Coronary heart disease or angina pectoris

- High blood pressure
- Stroke or its chronic consequences
- Arthrosis (excluding arthritis)
- Low back disorder or other chronic back defect
- Neck disorder or chronic neck defect
- Diabetes
- Allergy (rhinitis, eye inflammation, dermatitis, food allergy excluding allergic asthma)
- Cirrhosis of the liver
- Urinary incontinence or bladder control problems
- Kidney problems
- Depression
- High blood lipids

Using these binary variables (with Yes/No response), a composite continuous variable was created representing the total number of chronic conditions reported by each respondent in the past 12 months. For descriptive purposes, an additional categorical variable was derived and grouped into three categories: no chronic conditions, <5 chronic conditions, and ≥5 chronic conditions. This categorisation facilitated clearer description of the variable. However, for inferential analysis (i.e., regression models), the continuous variable was used to preserve information and statistical power.

Chronic conditions are significant predictors of mental health outcomes. The co-occurrence of physical illness and mental distress is well-documented, with multi-morbidity contributing to higher psychological burden, functional limitations, and lower quality of life (Garin et al., 2016). Within the SEM framework, both long-standing health problems and chronic conditions are situated at the individual (micro) level, as they relate directly to the individual's physical health status, which in turn influences their psychological well-being (McLeroy et al., 1988).

Ability to afford medical and mental health services

The dataset included two questions assessing respondents' experiences with the affordability of healthcare services in the past 12 months:

- "*Could not afford medical examination or treatment in the past 12 months*"
- "*Could not afford mental health care (by a psychologist, psychotherapist or a psychiatrist for example) in the past 12 months*"

Responses to both questions were originally coded as 1 = "*Yes*", 2 = "*No*", and 3 = "*No need*". To improve clarity, two new binary variables were created to reflect the ability to afford care rather than the inability. Specifically, responses indicating "*No*" (i.e., the person could afford the care) and "*No need*" (i.e., the person did not require the service) were combined into a single category coded as 1 = Yes (able to afford care/no barrier). A "*Yes*" response to the original question (i.e., the individual could not afford the service) was coded as 0 = No (unable to afford care).

From the perspective of SEM, these variables are positioned at the macro-level, as they relate to structural inequities in health systems (McLeroy et al., 1988). Limited access to essential medical or psychological services due to cost has been consistently linked with poorer depression-related outcomes (Eimontas et al., 2022).

Health determinants

Body mass index (BMI): BMI was derived from the available weight and height variables, using the standard formula: weight in kilograms divided by height in metres squared. BMI is included as it is known to be associated with mental health, with both overweight and obesity linked to higher risks of depression (Luppino et al., 2010).

Social support

This variable measured perceived social support by asking respondents: "*Number of close people to count on in case of serious personal problems*". Responses were categorised as:

"*None*", "*1 or 2*", "*3 to 5*", and "*6 or more*". This variable was used as provided in the dataset and required no recoding.

Social support has long been established as a protective factor in mental health, serving to buffer the effects of stress and reduce the risk of depression and anxiety. Numerous studies have shown that individuals with greater perceived social support experience lower rates of psychological distress and depression (Thoits, 2011; Kawachi and Berkman, 2001; Cohen and Wills, 1985).

Within the SEM, this variable is situated at the social (meso) level, as it reflects the quality and quantity of social relationships and direct interactions with others. Supportive personal networks, including family, friends, and confidants, form a critical layer in the immediate social environment influencing mental well-being (Glanz et al., 2008; McLeroy et al., 1988).

2.3.6 Data analysis

This section details the analytical strategies employed to address the SDA study's research objectives, with each subsection describing the methodology applied to a specific objective.

Objective 1: Summarise the EHIS Wave 3 data for migrants and home populations across the eligible European countries

Descriptive and summary statistics were generated for all selected variables by migration status and by country. Frequencies and percentages were calculated for categorical variables, while means, medians, and standard deviations were computed for continuous variables. Clustered bar charts and boxplots were used for visualising group differences.

To test for statistically significant differences across migration groups in categorical variables, Pearson's chi-square (χ^2) tests were conducted. These tests assessed whether observed distributions of demographic and health-related characteristics varied statistically significantly by migration status. Chi-square values and corresponding p-values were reported in the sociodemographic and health status tables.

Objective 2: Compare the prevalence and severity of depression between migrants and home populations

To examine the prevalence of depression across migration groups, descriptive analyses were conducted using derived categorical variables based on the PHQ-8 score. First, a binary variable was created using a cut-off score of ≥10 to indicate the presence of depression, as established in prior validation studies of the PHQ-8 and PHQ-9 (Kroenke et al., 2010). Second, a categorical depression severity variable was constructed to capture the full spectrum of depression, classifying individuals into five levels: No depression (0–4), Mild (5–9), Moderate (10–14), Moderately Severe (15–19), and Severe (20–24). These categorisations were based on the thresholds established in the foundational validation studies of the PHQ-9, which the PHQ-8 closely follows (Kroenke et al., 2001).

These groupings allowed for both prevalence estimates and further analyses by severity level in subsequent regression models. Descriptive statistics for these derived categories were then calculated across migration statuses to compare rates of depression and its severity between migrants and home populations.

Objective 3: Explore the associations between migration status and depression prevalence and severity, adjusting for sociodemographic characteristics, social support, and health-related factors

Predicting case-level depression: Logistic regression analysis

To explore the relationship between migration status and depression (defined as PHQ-8 score ≥10), a univariate logistic regression was first conducted using migration status as the sole explanatory variable. Subsequently, multiple logistic regression models were utilised to assess adjusted associations between depression and a wider set of predictors, including migration status, sociodemographic characteristics, social support, and health-related behaviours. The first multiple logistic regression model included the full sample with all three migration groups. Additional models were then fitted separately for each migration group to examine whether the associations varied by migration status.

Logistic regression was selected because the primary outcome in this analysis was binary (presence or absence of probable depression), making it an appropriate method for estimating the association between migration status and the odds of depression while adjusting for multiple covariates (Hosmer et al., 2013).

All models applied the survey weights provided in the dataset by Eurostat in order to account for the complex sampling design and to improve the representativeness of the estimates for the broader population. In addition, country was included as a random effect to account for the clustering of individuals within countries and for potential unobserved country-level variation in depression-related outcomes. This modelling approach was considered appropriate given the structure of the data, with individuals nested within countries (Heeringa et al., 2017).

Independent variables, including sociodemographic characteristics, social support, and health-related factors, were selected a priori based on existing literature and the theoretical framework. This theory-driven specification was retained as the primary model throughout the analysis. To assess whether it also provided an appropriate fit to the data, additional forward selection and backward elimination procedures were explored only as model-checking exercises. These were not used as the basis for final model selection, but rather to evaluate whether a more statistically reduced specification would outperform the theory-driven model. The a priori model consistently showed lower Akaike (AIC) and Bayesian (BIC) information criterion values than the alternative stepwise models, supporting its retention as the final model.

Predicting depression severity: Multinomial logistic regression

To further investigate associations across varying levels of depression severity, a multinomial logistic regression approach was applied. Multinomial logistic regression was chosen because depression severity was analysed as a categorical outcome with more than two levels, allowing comparison of predictors across increasing severity categories without collapsing the outcome into a simple binary distinction (Long and Freese, 2006).

As with the binary models, a univariate multinomial regression was first conducted using migration status as the explanatory variable. Multivariable models were then utilised to include migration status, sociodemographic characteristics, social support, and health-related predictors. These analyses were performed on the full dataset and separately for each migration group. The same survey weighting strategy and country-level random-effects structure were applied in these models in order to account for the complex sample design, clustering, and between-country variation.

Objective 4: Identify high-risk groups with higher prevalence of depression or greater depression severity

High-risk groups were identified using the regression models described in Objective 3. These analyses focused on examining the impact of migration status on depression risk, while adjusting for sociodemographic characteristics, social support, and health-related factors.

Objective 5: Examine interaction effects between migration status and other determinants of depression-related outcomes

To explore whether the association between migration status and depression varies depending on other micro- and meso-level factors, interaction terms were included in the multiple logistic regression model. This objective builds on the SEM framework, which theorises that health outcomes are shaped by interdependent influences across micro (individual), meso (social), and macro (structural) levels (Bronfenbrenner, 1979). Accordingly, interactions were tested between migration status (a macro-level structural factor) and variables from the micro and meso levels, including sex, employment status, affordability of mental health care, and perceived social support.

Interaction terms were chosen based on theoretical relevance and empirical evidence suggesting that the effects of structural disadvantage (e.g., migration) may be moderated by social context (e.g., support networks) or individual characteristics (e.g., gender). For example, prior literature has documented gendered vulnerabilities in migration and mental health (Kuehner, 2017; Bhugra, 2004), and SEM theory underscores how the interplay between

structural and relational domains can influence well-being (McLeroy et al., 1988; Bronfenbrenner, 1979).

Statistical interaction terms were constructed using product terms between migration status and the selected moderator variables mentioned above. The inclusion of interaction terms allowed for the identification of subgroup-specific effects, such as whether the protective effects of social support differ between migrants and home populations, thus enabling a more nuanced understanding of how structural and social factors combine to influence depression risk. Interaction effects were further examined using marginal effects to aid interpretation.

Objective 6: Ensure robustness and inform future data collection and policy recommendations

Sensitivity analysis

Class imbalance can bias results by skewing estimates toward the majority class, potentially masking vulnerabilities in underrepresented groups (He and Garcia, 2009). To address the issue of class imbalance in the dataset, which consisted of over 100,000 home populations and approximately 4,000 participants in each of the migrant groups, a sensitivity analysis was performed using both undersampling and oversampling techniques. This approach was implemented to ensure a balanced representation across the different migration status groups, thereby mitigating potential biases that may have arisen due to the imbalanced data.

Undersampling involves reducing the number of instances in the majority class (in this case, home populations) to balance the dataset (Buda et al., 2018). This method helps to avoid the classifier being biased towards the majority class by providing it with more balanced data. Although undersampling can lead to the loss of potentially useful information, it is effective in handling large datasets where the majority class significantly outnumbers the minority classes (Fotouhi et al., 2019; Buda et al., 2018). Oversampling, on the other hand, increases the number of instances in the minority classes (here, the migrant groups) by duplicating existing data points (Kraiem et al., 2021).

In this study, a combination of undersampling and oversampling was applied to achieve a balanced dataset with a 2:1:1 ratio (Fotouhi et al., 2019; Kim and Jung, 2023). The number of home populations was reduced to 20,000, while the number of settled migrants and non-settled migrants was increased to 10,000 each. This ratio was selected to ensure equal total representation of migrant populations (20,000) relative to home populations (also 20,000). A fixed seed value of 1000 was used for resampling to ensure reproducibility. Resampling was conducted using stratified random sampling procedures available in STATA. This approach ensured that the dataset had a balanced representation of each group.

The balanced dataset was then used to re-run the logistic regression model to assess the factors associated with depression across different migration statuses. This sensitivity analysis aimed to verify the consistency of the findings and to ensure that the results were not disproportionately influenced by the original class imbalance.

Informing data collection and policy recommendations

While not directly addressed through modelling, the insights gained from these analyses may help guide future health monitoring and data collection. The identification of disparities and vulnerable groups could also inform targeted policy interventions to improve mental health equity across populations.

2.3.7 Statistical software and significance level

All analyses were conducted using STATA 18. Although a statistical significance threshold of p-value < 0.05 was assumed across all tests, it should be noted that most comparisons would likely be substantially overpowered due to the large sample size. Therefore, greater emphasis was placed on raw effect sizes and confidence intervals when interpreting the impact of an independent variable, ensuring that findings were not only statistically significant but also substantively meaningful (Gómez-de-Mariscal et al., 2021).

2.4 Results

Objective 1: Summarise the EHIS Wave 3 data for migrants and home populations across the eligible European countries

The participant selection process is summarised in **Figure *2***. The initial step involved merging datasets from 29 European countries, resulting in a combined total of 311,385 participants. The following countries were excluded due to having fewer than 100 participants in any of the migration categories: Bulgaria (BG), Czech Republic (CZ), Denmark (DK), Greece (EL), Finland (FI), Croatia (HR), Hungary (HU), Iceland (IS), Ireland (IE), Lithuania (LT), Latvia (LV), Malta (MT), Netherlands (NL), Norway (NO), Poland (PL), Romania (RO), Serbia (RS), and Slovakia (SK). This exclusion reduced the dataset to 165,955 participants.

Additionally, Spain (ES) was excluded because none of the observations contained recorded responses to the outcome variable, leading to the exclusion of 22,072 participants. Observations with missing information related to migration status were then excluded, accounting for 467 participants. Furthermore, Belgium (BE) was excluded because it did not contain any observations in some of the key independent variables, resulting in an additional exclusion of 9,618 participants. At this stage, 133,798 participants remained. A further 1,782 observations with missing PHQ-8 outcome data were then excluded, leaving a final analytic sample of 132,016 participants across the eligible countries.

The final analysis included the following eligible countries: Austria (AT), Cyprus (CY), Germany (DE), Estonia (EE), Italy (IT), Luxembourg (LU), Portugal (PT), Sweden (SE), and Slovenia (SI).

All variables were evaluated for completeness. The majority had very low rates of missingness (under 2%). Cases with missing data on key analytical variables, particularly migration status and the PHQ-8 outcome, were excluded from the final sample, while limited item-level missingness within the PHQ-8 was addressed using individual mean imputation, as described in Section 2.3.5.1.

Sociodemographic characteristics

The distribution of sociodemographic characteristics across migration status is summarised in **Table 5**. Overall, there was a statistically significant difference in each characteristic among the groups ($p < 0.01$).

Sex distribution showed a slightly higher proportion of females across all groups, with settled migrants having the highest percentage of females (55.53%). Both migrant groups were predominantly younger, with larger proportions in the 25–59 age group, whereas home populations featured a higher proportion aged 60 and above (39.91%) (**Figure *3***). Differences were also observed in residential area classification, with settled migrants and non-settled migrants more likely to reside in cities (44.62% and 47.85%, respectively) compared to home populations (30.92%).

Educational attainment varied among the groups, with secondary education being the most common level across all groups. Settled migrants showed the highest percentage of tertiary education (38.81%) and the lowest percentage with no formal education (0.76%), while non-settled migrants had the highest percentage with no formal education (2.39%) (**Figure *3***). Employment status differences were also evident. Settled migrants had a higher employment rate (56.46%), while non-settled migrants exhibited the highest unemployment rate (11.22%) and the lowest retirement rate (11.74%). In contrast, home populations had the highest proportion of retirees (30.07%), which corresponds to their larger proportion of older individuals.

Regarding marital status, both migrant groups were more likely to be married (approximately 60% for both groups) compared to home populations (52.65%). Migrants were also more likely to live in larger households (three or more members) compared to home populations. Household income distribution also reflected inequalities, with non-settled migrants more frequently in the lowest income quintile (33.63%), compared to home populations (16.25%) who were more evenly spread across all quintiles (**Figure *3***).

Table 5 | Sociodemographic characteristics of participants by migration status.

	Home populations	Settled migrants	Non-settled migrants
Characteristics	**N (%)**	**N (%)**	**N (%)**
Sex	**(Pearson chi2(2) = 10.31, p-value < 0.01)**		
Male	57,118 (46.65)	2,254 (44.47)	2,117 (47.03)
Female	65,328 (53.35)	2,815 (55.53)	2,384 (52.97)
Age groups *(in years)*	**(Pearson chi2(4) = 1.3e+03, p-value < 0.01)**		
60+	48,870 (39.91)	1,476 (29.12)	782 (17.37)
25 – 59	61,623 (50.33)	3,239 (63.90)	3,199 (71.07)
15 – 24	11,953 (9.76)	354 (6.98)	520 (11.55)
Residential area classification	**(Pearson chi2(6) = 1.2e+03, p-value < 0.01)**		
Cities	37,618 (30.92)	2,243 (44.62)	2,146 (47.85)
Towns and suburbs	46,411 (38.15)	1,903 (37.86)	1,562 (34.83)
Rural areas	37,623 (30.93)	881 (17.53)	777 (17.32)
Educational level	**(Pearson chi2(10) = 1.1e+03, p-value < 0.01)**		
No formal education	2,734 (2.24)	38 (0.76)	104 (2.39)
Primary education	13,827 (11.34)	257 (5.15)	335 (7.69)
Secondary education	62,356 (51.14)	2,468 (49.48)	2,424 (55.65)
Post-secondary education	5,276 (4.33)	289 (5.79)	197 (4.52)
Tertiary education	37,740 (30.95)	1,936 (38.81)	1,296 (29.75)
Employment status	**(Pearson chi2(14) = 1.6e+03, p-value < 0.01)**		
Employed	58,629 (48.08)	2,810 (56.46)	2,425 (54.52)
Unemployed	5,942 (4.87)	381 (7.66)	499 (11.22)
Retired	36,668 (30.07)	978 (19.65)	522 (11.74)
Unable to work (health problems)	1,461 (1.20)	115 (2.31)	56 (1.26)
Student	8,556 (7.02)	255 (5.12)	339 (7.62)
Fulfilling domestic tasks	8,252 (6.77)	319 (6.41)	472 (10.61)
Other	2,425 (1.99)	119 (2.39)	135 (3.04)
Marital status	**(Pearson chi2(8) = 480.36, p-value < 0.01)**		
Single	36,114 (29.58)	1,081 (21.42)	1,227 (27.39)
Married	64,275 (52.65)	3,038 (60.19)	2,689 (60.02)
Widowed	12,366 (10.13)	332 (6.58)	250 (5.58)
Divorced	9,325 (7.64)	596 (11.81)	314 (7.01)
Household size	**(Pearson chi2(4) = 420.24, p-value < 0.01)**		
1 – 2 members	67,470 (55.15)	2,384 (47.13)	1,890 (42.03)
3 or more members	54,870 (44.85)	2,674 (52.87)	2,607 (57.97)
Household type	**(Pearson chi2(10) = 433.99, p-value < 0.01)**		
One-person household	25,602 (21.18)	897 (17.92)	792 (17.79)
Lone parent with children	4,847 (4.01)	269 (5.37)	219 (4.92)
Couple without any children	38,003 (31.44)	1,352 (27.01)	1,267 (28.45)
Couple with children	45,238 (37.43)	2,009 (40.13)	1,663 (37.35)
Other	7,179 (5.94)	479 (9.57)	512 (11.50)
Household income	**(Pearson chi2(10) = 1.4e+03, p-value < 0.01)**		
1st quintile (lowest)	19,641 (16.25)	1,162 (23.39)	1,475 (33.63)
2nd quintile	23,192 (19.19)	990 (19.93)	970 (22.12)
3rd quintile	24,939 (20.64)	1,010 (20.33)	873 (19.90)
4th quintile	25,904 (21.44)	910 (18.32)	604 (13.77)
5th quintile (highest)	27,168 (22.48)	896 (18.04)	464 (10.58)
Total	**122,446 (92.75)**	**5,069 (3.84)**	**4,501 (3.41)**

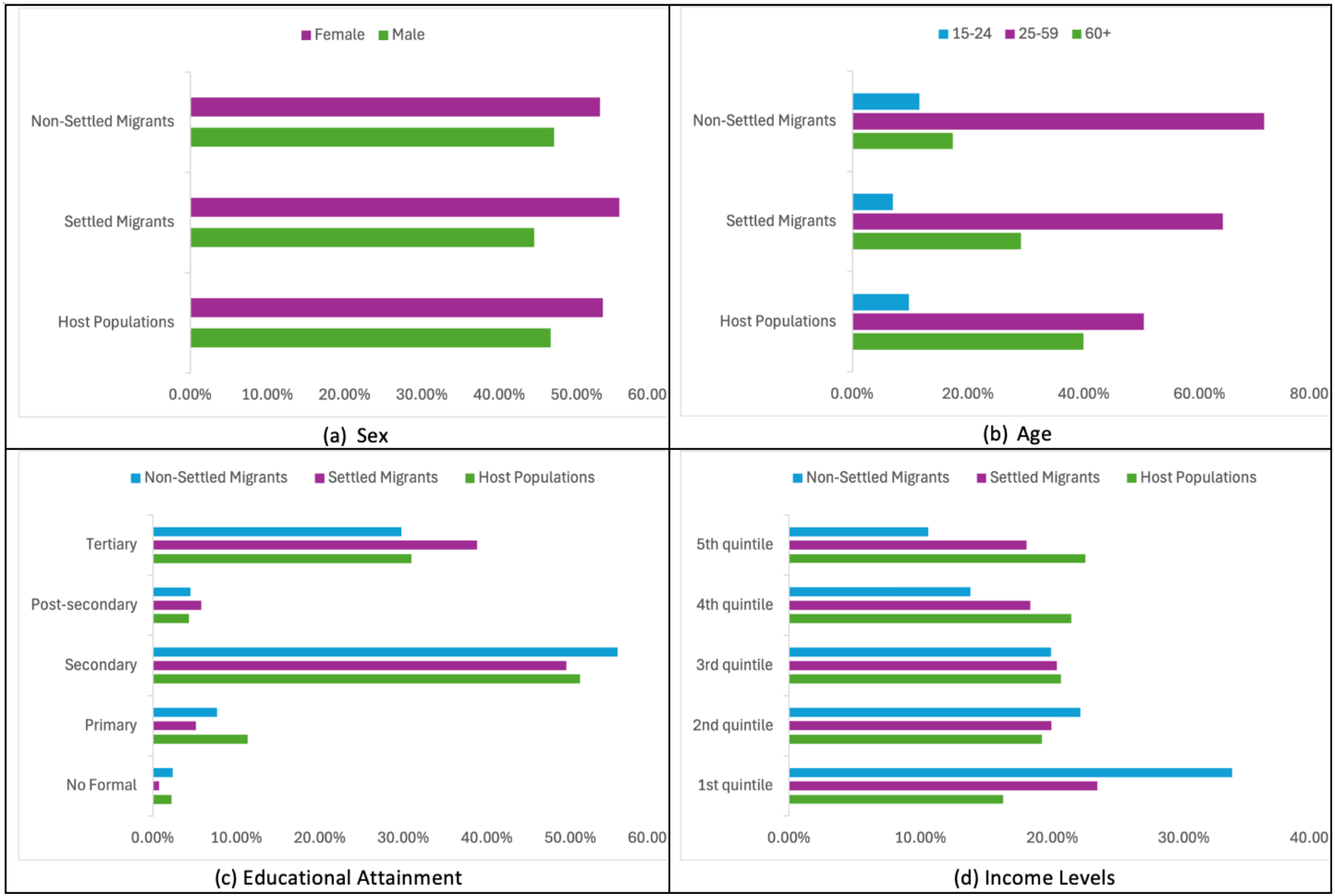


Figure 3 | Distribution of sociodemographic characteristics by migration status.

Health-related characteristics

The health-related characteristics of the study participants revealed statistically significant differences among the three groups (**Table 6**).

Differences in self-perceived general health were notable. Non-settled migrants were more likely to report their health as "*Very good*" (31.44%) compared to home populations (23.23%) and settled migrants (22.50%). Furthermore, non-settled migrants had lower rates of long-standing health problems (33.10%) compared to home populations (44.89%) and settled migrants (47.44%). In contrast, home populations showed higher rates of chronic conditions and "*Bad*" or "*Very bad*" health.

A greater proportion of settled migrants reported a history of depression in the past 12 months (10.16%), compared to home populations (8.20%) and non-settled migrants (5.98%). Similarly, settled migrants were more likely to report having consulted a mental health professional (7.85%) than home populations (6.27%) or non-settled migrants (4.50%).

Financial barriers to accessing healthcare were more common among migrants. While the majority of participants across all groups reported being able to afford medical care, a higher proportion of settled migrants (6.98%) and non-settled migrants (6.47%) indicated that they could not afford medical care, compared to 4.60% of home populations. A similar trend was observed for mental health care: 2.83% of settled migrants and 1.92% of non-settled migrants reported that they could not afford mental health care, while only 1.59% of home populations reported affordability barriers (**Figure 4**).

Social support availability also differed across groups. Non-settled migrants were more likely to report having no close people to rely on (6.34%) and limited support networks (39.38% reported only 1 or 2 people), compared to home populations (1.99% and 27.66%, respectively) and settled migrants (4.70% and 31.26%, respectively) (**Figure 4**).

Lastly, BMI levels were slightly higher among settled migrants (26.04) compared to home populations (25.60) and non-settled migrants (25.34).

Table 6 | Health status and social support by migration status.

Characteristics	Home populations N (%), mean *(SD)*	Settled migrants N (%), mean *(SD)*	Non-settled migrants N (%), mean *(SD)*
Symptoms of depression (based on PHQ-8 scores)	**(Pearson chi2(10) = 107.58, p-value < 0.01)**		
None (0 – 4)	96,565 (78.86)	3,758 (73.20)	3,638 (80.83)
Mild (5 – 9)	18,082 (14.77)	839 (16.34)	583 (12.95)
Moderate (10 – 14)	4,933 (4.03)	290 (5.72)	187 (4.15)
Moderately severe (15 – 19)	2,003 (1.64)	123 (2.43)	59 (1.31)
Severe (20 – 24)	863 (0.70)	59 (1.16)	34 (0.76)
Presence of depression (PHQ-8 ≥ 10)	**(Pearson chi2(4) = 70.30, p-value < 0.01)**		
No	114,647 (93.63)	4,597 (90.69)	4,221 (93.78)
Yes	7,799 (6.37)	472 (9.31)	280 (6.22)
Self-perceived general health	**(Pearson chi2(10) = 243.07, p-value < 0.01)**		
Very good	28,398 (23.23)	1,136 (22.50)	1,412 (31.44)
Good	54,100 (44.26)	2,239 (44.34)	2,022 (45.02)
Fair	29,508 (24.14)	1,242 (24.59)	773 (17.21)
Bad	8,289 (6.78)	349 (6.91)	238 (5.30)
Very bad	1,951 (1.60)	84 (1.66)	46 (1.02)
Long-standing health problem	**(Pearson chi2(4) = 266.91, p-value < 0.01)**		
No	67,274 (55.11)	2,646 (52.56)	3,002 (66.90)
Yes	54,802 (44.89)	2,388 (47.44)	1,485 (33.10)
Chronic conditions	**(Pearson chi2(6) = 525.60, p-value < 0.01)**		
No chronic conditions	45,522 (37.18)	1,913 (37.74)	2,381 (52.90)
<5 chronic conditions	67,196 (54.88)	2,840 (56.03)	1,966 (43.68)
≥5 chronic conditions	9,728 (7.94)	316 (6.24)	154 (3.42)
History of having depression in the past 12 months	**(Pearson chi2(4) = 59.80, p-value < 0.01)**		
No	111,664 (91.80)	4,519 (89.84)	4,212 (94.02)
Yes	9,970 (8.20)	511 (10.16)	268 (5.98)
Consultation with a mental health professional in the past 12 months	**(Pearson chi2(4) = 126.19, p-value < 0.01)**		
No	113,507 (93.73)	4,530 (92.15)	4,222 (95.50)
Yes	7,595 (6.27)	386 (7.85)	199 (4.50)
Access to healthcare			
Ability to afford medical services in the past 12 months	**(Pearson chi2(4) = 134.95, p-value < 0.01)**		
Yes	116,199 (95.40)	4,637 (93.02)	4,152 (93.53)
No	5,608 (4.60)	348 (6.98)	287 (6.47)
Ability to afford mental health services in the past 12 months	**(Pearson chi2(4) = 121.66, p-value < 0.01)**		
Yes	119,706 (98.41)	4,815 (97.17)	4,341 (98.08)
No	1,937 (1.59)	140 (2.83)	85 (1.92)
Social support			
Number of close people	**(Pearson chi2(8) = 965.78, p-value < 0.01)**		
None	2,418 (1.99)	234 (4.70)	281 (6.34)
1 or 2	33,566 (27.66)	1,557 (31.26)	1,745 (39.38)
3 to 5	55,113 (45.42)	1,971 (39.57)	1,599 (36.09)
6 or more	30,256 (24.93)	1,219 (24.47)	806 (18.19)
BMI	25.60 *(4.623)*	26.04 *(4.719)*	25.34 *(4.543)*



Figure 4 | Distribution of health-related characteristics and social support by migration status.

Summary of key findings:

- Non-settled migrants were younger, more likely to live in urban areas, and had lower education levels.
- Non-settled migrants had the highest unemployment rates and were more likely to live in larger households with lower income levels.
- Settled migrants showed the highest burden of depression across PHQ-8 categories and were more likely to report mental health service use.
- Non-settled migrants reported better self-perceived health, but also greater affordability barriers to care and lower levels of social support.
- Income disparities and affordability issues were more pronounced among the migrant groups compared to home populations.

Objective 2: Compare the prevalence and severity of depression between migrants and home populations

The distribution of depression severity based on PHQ-8 scores varied statistically significantly by migration status (**Table 6**). Non-settled migrants had the highest proportion of participants with no symptoms of depression (80.83%), followed by home populations (78.86%) and settled migrants (73.20%). Mild depression was more prevalent among settled migrants (16.34%) compared to home populations (14.77%) and non-settled migrants (12.95%). Moderate to severe depression rates were relatively low across all groups, but settled migrants had a higher prevalence of moderately severe depression (2.43%) and severe depression (1.16%) compared to other groups (**Figure 4**).

The presence of depression (PHQ-8 score ≥ 10) also varied across groups. Settled migrants had the highest proportion of participants with depression (9.31%), while home populations and non-settled migrants had similar and lower rates (6.37% and 6.22%, respectively) (**Figure 4**).

Objective 3: Explore the associations between migration status and depression prevalence and severity, adjusting for sociodemographic characteristics, social support, and health-related factors

To aid interpretation, **Table 7** summarises all analyses performed in this SDA, the sample sizes used, the regression methods applied, and their relevance to specific research objectives. This table also distinguishes between models based on the inclusion of interaction terms, stratification by migration status, and outcome type (binary or multinomial).

Depression and migration status

To explore factors associated with depression (defined as a PHQ-8 score of 10 or greater), both univariate and multiple logistic regression models were conducted. In the univariate analysis, settled migrants had statistically significantly higher odds of depression compared to home populations (OR = 1.62, 95% CI 1.40-1.89, $p < 0.01$), while non-settled migrants did not differ from home populations (OR = 0.99, 95% CI 0.59-1.65, p = 0.96) (**Table 8**).

After adjusting for a wide range of sociodemographic, socioeconomic, and health-related factors in the multiple logistic regression model, migration status remained a statistically significant predictor of depression. Settled migrants continued to show elevated odds of depression relative to home populations (aOR = 1.60, 95% CI 1.42-1.80), whereas non-settled migrants also showed a modest but statistically significant increase in risk (aOR = 1.22, 95% CI 1.10-1.36) (**Table 8**).

Among all predictors, self-perceived general health emerged as the strongest factor associated with depression. Participants who reported their health as "*Very bad*" had over 40 times the odds of depression compared to those in "*Very good*" health (aOR = 40.80, 95% CI 36.07-46.16). A history of depression in the past year also substantially increased the risk (aOR = 5.11, 95% CI 4.04-6.45), as did recent contact with mental health professionals (aOR = 1.99, 95% CI 1.48-2.67). Financial barriers were notable: those unable to afford mental health services had statistically significantly elevated odds of depression (aOR = 2.43, 95% CI 1.95-

3.01), and those unable to afford general medical care also faced statistically significantly increased risk (aOR = 1.44, 95% CI 1.11-1.85).

In terms of demographic and socioeconomic characteristics, younger age groups were more vulnerable: individuals aged 15-24 had nearly three times the odds of depression compared to those aged 60 and above (aOR = 2.88, 95% CI 1.85-4.48). Educational attainment was generally protective, with tertiary education associated with lower odds of depression (aOR = 0.54, 95% CI 0.33-0.87). Larger household size was associated with reduced odds (aOR = 0.88, 95% CI 0.84-0.92).

Social support also played a statistically significant protective role. Having three to five close contacts was associated with 30% lower odds of depression (aOR = 0.70, 95% CI 0.53-0.91), while having six or more close contacts further reduced the risk (aOR = 0.59, 95% CI 0.46-0.75).

Full model estimates for all predictors are provided in **Table 8** and visualised in **Figure 5**.

Table 7 | Overview of regression models applied to examine the relationship between migration status and depression.

Model description	Population included in analysis	Type of regression	Sample size (N)	Independent variables	Objective addressed	Notes/purpose
Outcome of interest: Depression (Binary: PHQ-8 < or ≥ 10)						
Univariate	All	Logistic	132,016	Migration status[1]	3	Assesses crude association between migration status and depression
Multiple	All	Logistic	121,953	Migration status A priori predictors[2]	3 and 4	Theory-driven model; used for primary association testing
Stratified (Home populations)	Home populations	Logistic	113,553	A priori predictors	3 and 4	Subgroup analysis
Stratified (Settled migrants)	Settled migrants	Logistic	4,380	A priori predictors	3 and 4	Subgroup analysis
Stratified (Non-settled migrants)	Non-settled migrants	Logistic	4,020	A priori predictors	3 and 4	Subgroup analysis
Sensitivity (Balanced sample)	All (Balanced)[3]	Logistic	40,000	Migration status A priori predictors	6	2:1:1 balanced using under-/oversampling
Interaction(s)	All	Logistic	121,953	Migration status A priori predictors Interaction terms[4]	5	Includes interactions (e.g., migration× (social support, sex, etc.))
Outcome of interest: Depression Severity (Mild, Moderate, Moderately Severe, Severe)						
Univariate	All	Multinomial	132,016	Migration status	3	Assesses crude associations across depression severity levels
Multivariate	All	Multinomial	121,953	Migration status A priori predictors	3 and 4	PHQ-8 modelled in categories
Stratified (Home populations)	Home populations	Multinomial	113,553	A priori predictors	3 and 4	Subgroup severity analysis
Stratified (Settled migrants)	Settled migrants	Multinomial	4,380	A priori predictors	3 and 4	Subgroup severity analysis
Stratified (Non-settled migrants)	Non-settled migrants	Multinomial	4,020	A priori predictors	3 and 4	Subgroup severity analysis

[1] Home populations, settled migrants, non-settled migrants.
[2] Sociodemographic, social support and health variables: Age, Sex, Residential area, Education, Employment, Marital status, Household size, Household type, Number of children under 14, Household income, Perceived general health, Long-standing health problems, Chronic conditions, History of depression, Consultation with mental health professional, ability to afford medical and mental health care, Social support, and BMI.
[3] 'Balanced' refers to the resampled dataset created using undersampling of the host population and oversampling of migrant groups to achieve a 2:1:1 ratio.
[4] Interaction terms: Migration x Sex; Migration x Employment; Migration x Social support; Migration x Ability to afford mental health care.

Table 8 | Factors associated with depression (PHQ-8 score ≥ 10) from univariate and multiple logistic regression analyses.

	Univariate		Multivariate	
Factor variables			**aOR (95% CI)**	**p-value**
Migration status				
Home populations	REF		REF	
Settled migrants	1.62 (1.40-1.89)	<0.01	1.60 (1.42-1.80)	<0.01
Non-settled migrants	0.99 (0.59-1.65)	0.96	1.22 (1.10-1.36)	<0.01
Sociodemographic characteristics				
Sex				
Male			REF	
Female			1.16 (0.98-1.37)	0.08
Age group				
≥ 60			REF	
25 – 59			1.88 (1.39-2.56)	<0.01
15 – 24			2.88 (1.85-4.48)	<0.01
Residential area classification				
Cities			REF	
Towns and suburbs			0.90 (0.83-0.97)	<0.01
Rural areas			0.78 (0.73-0.84)	<0.01
Education				
No formal education			REF	
Primary education			0.60 (0.51-0.71)	<0.01
Secondary education			0.58 (0.38-0.89)	0.01
Post-secondary education			0.64 (0.38-1.06)	0.08
Tertiary education			0.54 (0.33-0.87)	0.01
Employment status				
Employed			REF	
Unemployed			1.06 (0.88-1.28)	0.55
Retired			0.88 (0.72-1.06)	0.18
Unable to work due to health			1.73 (1.57-1.91)	<0.01
Student, pupil			1.17 (1.03-1.33)	0.01
Fulfilling domestic tasks			0.84 (0.70-1.01)	0.07
Other			1.58 (1.39-1.80)	<0.01
Marital status				
Single			REF	
Married			0.90 (0.69-1.18)	0.44
Widowed			1.09 (0.95-1.25)	0.24
Divorced			0.86 (0.80-0.92)	<0.01
Household size			0.88 (0.84-0.92)	<0.01
Household type				
Couple with children			REF	
One-person household			0.98 (0.79-1.21)	0.86
Lone parent with children			0.92 (0.87-0.98)	0.01
Couple without children			0.76 (0.65-0.88)	<0.01
Other			1.35 (1.18-1.55)	<0.01
Number of children under 14			1.08 (1.00-1.17)	0.06
Household income				
1st quintile (lowest income)			REF	
2nd quintile			1.10 (1.03-1.18)	<0.01

Factor variables	Univariate aOR (95% CI)	Multivariate p-value
3rd quintile	1.04 (0.98-1.11)	0.19
4th quintile	0.79 (0.61-1.01)	0.06
5th quintile (highest income)	0.91 (0.81-1.02)	0.10
Health-related characteristics		
Self-perceived general health		
Very good	REF	
Good	2.28 (1.64-3.17)	<0.01
Fair	5.72 (3.87-8.46)	<0.01
Bad	16.81 (13.28-21.27)	<0.01
Very bad	40.80 (36.07-46.16)	<0.01
Long-standing health problem (N/Y)	1.33 (1.12-1.57)	<0.01
Chronic conditions	1.13 (1.07-1.18)	<0.01
History of depression (N/Y)	5.11 (4.04-6.45)	<0.01
Consultation with mental health professional (N/Y)	1.99 (1.48-2.67)	<0.01
Ability to afford medical services (Y/N)	1.44 (1.11-1.85)	<0.01
Ability to afford mental health services (Y/N)	2.43 (1.95-3.01)	<0.01
Social support (number of close people)		
0	REF	
1 or 2	0.93 (0.66-1.32)	0.68
3 to 5	0.70 (0.53-0.91)	<0.01
6 or more	0.59 (0.46-0.75)	<0.01
BMI	0.98 (0.97-0.99)	<0.01

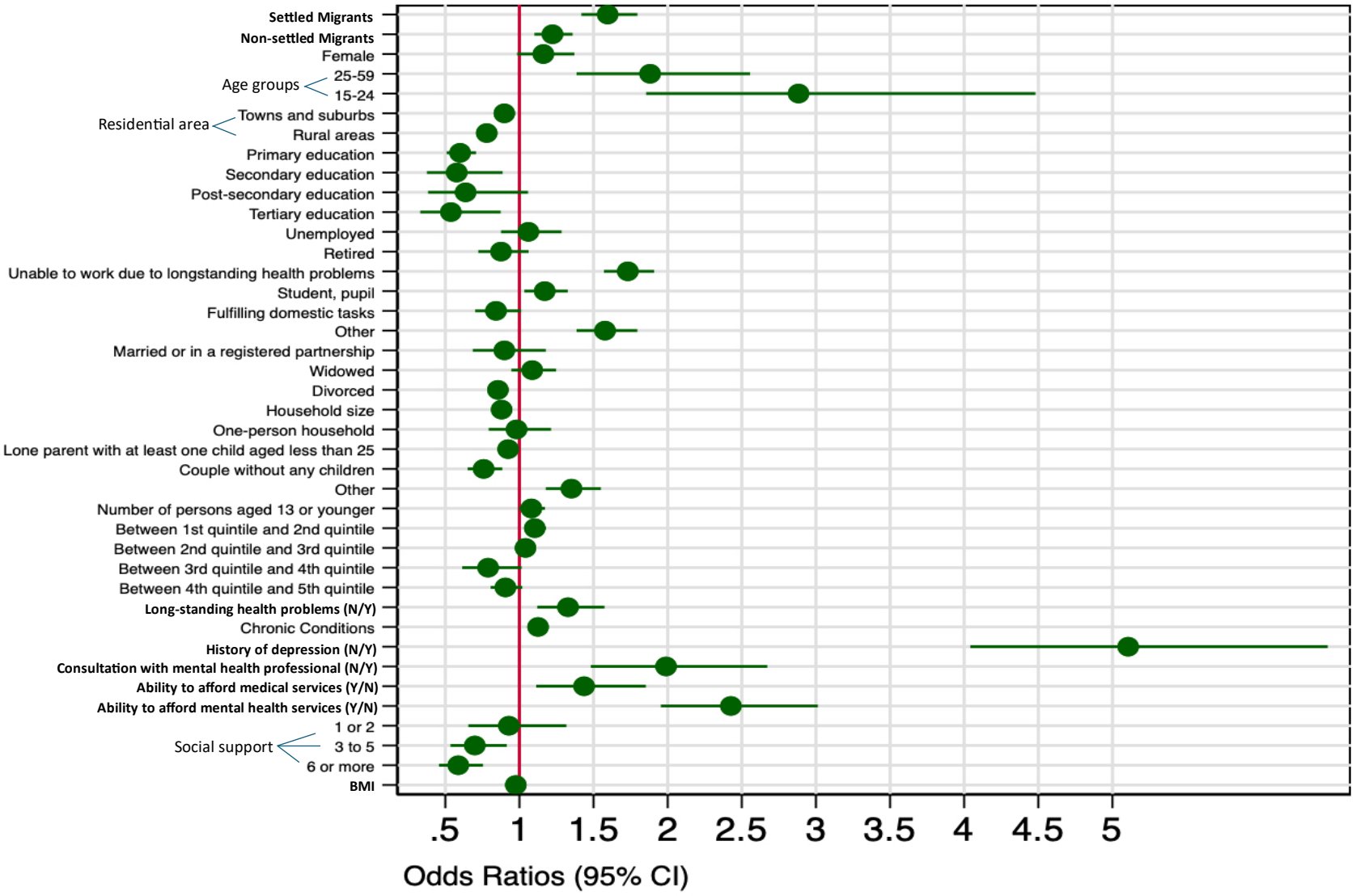


Figure 5 | Forest plot displaying adjusted odds ratios (95% CI) for depression predictors.

Key predictors of depression across migration groups

To better understand risk and protective factors within each migration group, separate multiple logistic regression models were run for home populations, settled migrants, and non-settled migrants. Full results are available in **Table 9**.

Self-perceived general health was the strongest and most consistent predictor of depression across all groups. Likewise, a history of depression in the past year and consultation with a mental health professional in the past year, were strong and consistent predictors across groups, each associated with statistically significantly higher odds of current depression.

Financial barriers to mental healthcare were important in all groups, with non-settled migrants facing the highest risk (aOR = 7.97, 95% CI 1.86-34.20), followed by settled migrants (aOR = 3.44, 95% CI 1.59-7.47). Inability to afford general medical care was also associated with elevated odds of depression among non-settled migrants (aOR = 1.93, 95% CI 1.43-2.61) and home populations (aOR = 1.41, 95% CI 1.10-1.81), but not among settled migrants (aOR = 1.68, 95% CI 0.89-3.16).

In terms of demographic and socioeconomic characteristics, younger age was a statistically significant risk factor only among home populations, where individuals aged 15-24 had nearly three times the odds of depression compared to those aged 60 and above (aOR = 2.95, 95% CI 1.67-5.20). No significant associations with age were observed among settled or non-settled migrants. Tertiary educational attainment was protective for both home populations (aOR = 0.54, 95% CI 0.33-0.86) and non-settled migrants (aOR = 0.39, 95% CI 0.17-0.93), but not among settled migrants. In terms of employment status, settled migrants who were unemployed (aOR = 2.09, 95% CI 1.56-2.80) or unable to work due to health reasons (aOR = 3.27, 95% CI 1.51-7.07) faced higher odds of depression. These patterns were similarly observed among home populations but not among non-settled migrants.

Social support was a particularly strong protective factor for settled migrants, with those having six or more close contacts showing reduced odds of depression (aOR = 0.33, 95% CI 0.24-0.45). A relatively smaller protective effect was also seen among home populations (aOR

= 0.63, 95% CI 0.45-0.87), while no significant association was observed among non-settled migrants.

Table 9 | Factors associated with depression (PHQ-8 score ≥ 10) across migration groups from multiple logistic regression analyses.

	Home populations		Settled migrants		Non-settled migrants	
Factor variables	**aOR (95% CI)**	**p-value**	**aOR (95% CI)**	**p-value**	**aOR (95% CI)**	**p-value**
Sociodemographic characteristics						
Sex						
Male	REF		REF		REF	
Female	1.18 (0.99-1.42)	0.07	0.96 (0.68-1.36)	0.83	1.52 (0.79-2.92)	0.21
Age group						
≥ 60	REF		REF		REF	
25 – 59	1.97 (1.36-2.86)	<0.01	1.08 (0.83-1.39)	0.57	0.62 (0.16-2.38)	0.49
15 – 24	2.95 (1.67-5.20)	<0.01	1.53 (0.46-5.11)	0.49	1.72 (0.62-4.85)	0.30
Residential area classification						
Cities	REF		REF		REF	
Towns and suburbs	0.92 (0.84-1.01)	0.07	0.70 (0.39-1.28)	0.25	0.97 (0.53-1.77)	0.92
Rural areas	0.79 (0.75-0.84)	<0.01	0.38 (0.12-1.18)	0.10	1.41 (0.67-2.98)	0.37
Education						
No formal education	REF		REF		REF	
Primary education	0.58 (0.46-0.73)	<0.01	5.15 (0.55-48.46)	0.15	0.72 (0.40-1.30)	0.27
Secondary education	0.56 (0.37-0.86)	<0.01	8.40 (0.71-99.97)	0.09	0.50 (0.39-0.65)	<0.01
Post-secondary education	0.61 (0.37-1.01)	0.05	7.76 (0.75-80.65)	0.09	1.32 (0.72-2.40)	0.37
Tertiary education	0.54 (0.33-0.86)	0.01	6.81 (1.09-42.74)	0.04	0.39 (0.17-0.93)	0.03
Employment status						
Employed	REF		REF		REF	
Unemployed	1.01 (0.80-1.28)	0.91	2.09 (1.56-2.80)	<0.01	0.80 (0.55-1.17)	0.25
Retired	0.88 (0.76-1.03)	0.10	1.06 (0.69-1.63)	0.81	0.55 (0.07-4.46)	0.57
Unable to work due to health	1.78 (1.63-1.93)	<0.01	3.27 (1.51-7.07)	<0.01	0.26 (0.03-2.30)	0.23
Student, pupil	1.13 (0.97-1.33)	0.12	1.83 (0.95-3.51)	0.07	1.30 (0.67-2.54)	0.44
Fulfilling domestic tasks	0.84 (0.72-0.99)	0.03	1.13 (0.80-1.61)	0.48	0.60 (0.21-1.77)	0.36
Other	1.56 (1.41-1.73)	<0.01	9.72 (0.93-101.82)	0.06	0.41 (0.06-2.81)	0.36
Marital status						
Single	REF		REF		REF	
Married	0.86 (0.67-1.11)	0.25	1.40 (0.52-3.73)	0.51	1.38 (0.71-2.69)	0.35
Widowed	1.10 (0.98-1.23)	0.11	1.89 (0.85-4.21)	0.12	0.22 (0.01-3.39)	0.28
Divorced	0.85 (0.81-0.89)	<0.01	1.29 (0.96-1.73)	0.09	0.85 (0.24-2.94)	0.79

	Home populations		Settled migrants		Non-settled migrants	
Factor variables	**aOR (95% CI)**	**p-value**	**aOR (95% CI)**	**p-value**	**aOR (95% CI)**	**p-value**
Household size	0.87 (0.81-0.95)	<0.01	1.04 (0.77-1.41)	0.81	0.83 (0.59-1.16)	0.28
Household type						
Couple with children	REF		REF		REF	
One-person household	0.93 (0.83-1.05)	0.24	1.81 (0.54-6.04)	0.34	0.95 (0.28-3.19)	0.93
Lone parent with children	0.92 (0.81-1.05)	0.22	0.47 (0.21-1.05)	0.07	1.14 (0.31-4.16)	0.85
Couple without children	0.77 (0.69-0.87)	<0.01	0.79 (0.57-1.10)	0.17	0.34 (0.23-0.51)	<0.01
Other	1.31 (1.12-1.53)	<0.01	1.32 (0.82-2.12)	0.25	3.34 (1.57-7.11)	<0.01
Number of children under 14	1.12 (0.99-1.26)	0.07	1.09 (0.94-1.28)	0.27	0.88 (0.43-1.81)	0.74
Household income						
1st quintile (lowest income)	REF		REF		REF	
2nd quintile	1.17 (1.05-1.31)	<0.01	0.41 (0.15-1.12)	0.08	0.82 (0.65-1.04)	0.10
3rd quintile	1.11 (1.04-1.19)	<0.01	0.39 (0.14-1.08)	0.07	0.86 (0.40-1.84)	0.70
4th quintile	0.84 (0.69-1.02)	0.07	0.40 (0.22-0.73)	<0.01	0.63 (0.25-1.63)	0.35
5th quintile (highest income)	0.92 (0.82-1.04)	0.19	1.14 (1.02-1.26)	0.02	0.25 (0.08-0.76)	0.02
Health-related characteristics						
Self-perceived general health						
Very good	REF		REF		REF	
Good	2.66 (1.62-4.35)	<0.01	0.72 (0.35-1.49)	0.37	1.65 (0.86-3.16)	0.13
Fair	6.54 (3.80-11.27)	<0.01	3.58 (2.27-5.66)	<0.01	2.83 (1.02-7.84)	0.05
Bad	19.20 (13.80-26.72)	<0.01	13.06 (7.33-23.24)	<0.01	10.86 (6.60-17.86)	<0.01
Very bad	46.17 (40.76-52.30)	<0.01	23.34 (10.31-52.88)	<0.01	82.34 (8.81-769.62)	<0.01
Long-standing health problem (N/Y)	1.31 (1.10-1.56)	<0.01	1.51 (1.22-1.88)	<0.01	1.57 (0.96-2.55)	0.07
Chronic conditions	1.13 (1.07-1.20)	<0.01	1.02 (0.96-1.08)	0.49	1.06 (0.94-1.19)	0.34
History of depression (N/Y)	5.04 (3.85-6.59)	<0.01	8.27 (4.78-14.29)	<0.01	4.01 (2.53-6.35)	<0.01
Consultation with mental health professional (N/Y)	1.99 (1.43-2.75)	<0.01	1.08 (0.44-2.68)	0.86	4.08 (1.80-9.24)	<0.01
Ability to afford medical services (Y/N)	1.41 (1.10-1.81)	<0.01	1.68 (0.89-3.16)	0.11	1.93 (1.43-2.61)	<0.01
Ability to afford mental health services (Y/N)	2.37 (1.93-2.91)	<0.01	3.44 (1.59-7.47)	<0.01	7.97 (1.86-34.20)	<0.01
Social support (number of close people)						
0	REF		REF		REF	
1 or 2	1.07 (0.67-1.69)	0.79	0.25 (0.14-0.44)	<0.01	1.00 (0.34-2.93)	0.99
3 to 5	0.77 (0.55-1.09)	0.14	0.38 (0.25-0.60)	<0.01	0.65 (0.33-1.28)	0.21
6 or more	0.63 (0.45-0.87)	<0.01	0.33 (0.24-0.45)	<0.01	1.15 (0.39-3.35)	0.80
BMI	0.98 (0.97-0.99)	<0.01	0.96 (0.91-1.01)	0.14	0.99 (0.95-1.03)	0.61

Depression severity and migration status

To explore factors associated with varying levels of depression severity, a series of univariate and fully adjusted multinomial logistic regression models were conducted. The outcome variable was the PHQ-8 depression severity category, classified into five levels: no depression, mild, moderate, moderately severe, and severe depression. The reference category for depression severity was "*No depression*", and results are presented as relative risk ratios (RRRs) with 95% confidence intervals.

In the univariate analysis, only settled migrants showed statistically significantly elevated risks across all severity categories compared to home populations. These ranged from 1.21 times higher risk for mild depression (RRR = 1.21, 95% CI 1.09-1.35) to over twice the risk for severe depression (RRR = 2.48, 95% CI 1.10-5.62) (**Table 10**). In contrast, non-settled migrants did not differ statistically significantly from home populations at any severity level.

Table 10 | Association between migration status and depression severity using univariate multinomial logistic regression.

Outcome	**Migration status**		
	Home populations	**Settled migrants**	**Non-settled migrants**
Mild depression RRR (95% CI), p-value	REF	1.21 (1.09-1.35), <0.01	1.02 (0.63-1.65), 0.95
Moderate depression RRR (95% CI), p-value	REF	1.49 (1.29-1.71), <0.01	1.02 (0.59-1.79), 0.93
Moderately severe depression RRR (95% CI), p-value	REF	1.87 (1.62-2.16), <0.01	0.88 (0.40-1.91), 0.74
Severe depression RRR (95% CI), p-value	REF	2.48 (1.10-5.62), 0.03	1.05 (0.63-1.75), 0.84

In the fully adjusted model, migration status remained a statistically significant predictor of depression severity. Settled migrants had consistently elevated risks across all categories: mild (RRR = 1.29, 95% CI 1.13-1.48), moderate (RRR = 1.57, 95% CI 1.38-1.79), moderately severe (RRR = 2.18, 95% CI 1.64-2.90), and severe depression (RRR = 2.65, 95% CI 1.29-5.44). Non-settled migrants, by contrast, showed no statistically significant differences from home populations for mild through moderately severe depression, but did exhibit higher risk for severe depression (RRR = 1.44, 95% CI 1.31-1.59).

Beyond migration status, younger age and sex stood out as strong predictors of increased depression severity. Compared to those aged 60+, the youngest age group (15-24) faced notably higher risks, particularly for moderate (RRR = 4.18, 95% CI 2.45-7.13) and moderately severe depression (RRR = 5.11, 95% CI 2.75-9.52). Females had statistically significantly elevated risks of experiencing mild (RRR = 1.43, 95% CI 1.28-1.59), moderate (RRR = 1.32, 95% CI 1.10-1.59), and moderately severe depression (RRR = 1.57, 95% CI 1.36-1.81) compared to males.

Health-related variables were consistently associated with greater depression severity across all levels. Participants with a recent history of depression, more chronic conditions, or who had consulted a mental health professional in the past 12 months were significantly more likely to report higher levels of depression (**Table 11**). Poorer self-perceived general health also showed a strong effect, with increasing severity linked to worsening health status. Additionally, those with limited ability to afford medical or mental health services faced elevated risks of depression compared to those with no financial barrier (**Table 11**).

Educational attainment and social support emerged as protective factors. Higher education levels, particularly tertiary education, were associated with statistically significantly reduced risk of moderate-to-severe depression. Likewise, having six or more close social contacts statistically significantly lowered the risk across all severity levels, with an RRR of 0.26 (95% CI 0.16-0.44) for severe depression.

Full model estimates are presented in **Table 11**.

Table 11 | Factors associated with depression severity from multinomial logistic regression analysis.

Factor variables	Mild depression RRR (95% CI)	p-value	Moderate depression RRR (95% CI)	p-value	Moderately severe depression RRR (95% CI)	p-value	Severe depression RRR (95% CI)	p-value
Migration status								
Home populations	REF		REF		REF		REF	
Settled migrants	1.29 (1.13-1.48)	<0.01	1.57 (1.38-1.79)	<0.01	2.18 (1.64-2.90)	<0.01	2.65 (1.29-5.44)	<0.01
Non-settled migrants	1.17 (0.79-1.75)	0.43	1.26 (0.99-1.61)	0.06	1.31 (0.73-2.38)	0.37	1.44 (1.31-1.59)	<0.01
Sociodemographic characteristics								
Sex								
Male	REF		REF		REF		REF	
Female	1.43 (1.28-1.59)	<0.01	1.32 (1.10-1.59)	<0.01	1.57 (1.36-1.81)	<0.01	1.01 (0.62-1.65)	0.96
Age group								
≥ 60	REF		REF		REF		REF	
25 – 59	1.45 (1.36-1.55)	<0.01	2.23 (1.46-3.40)	<0.01	2.38 (1.82-3.09)	<0.01	2.14 (1.91-2.40)	<0.01
15 – 24	2.47 (2.22-2.76)	<0.01	4.18 (2.45-7.13)	<0.01	5.11 (2.75-9.52)	<0.01	2.67 (1.08-6.61)	0.03
Residential area classification								
Cities	REF		REF		REF		REF	
Towns and suburbs	0.91 (0.81-1.03)	0.13	0.84 (0.76-0.94)	<0.01	0.88 (0.79-0.96)	<0.01	1.16 (0.92-1.48)	0.21
Rural areas	0.84 (0.78-0.89)	<0.01	0.70 (0.63-0.78)	<0.01	0.75 (0.68-0.84)	<0.01	0.97 (0.79-1.18)	0.73
Education								
No formal education	REF		REF		REF		REF	
Primary education	0.90 (0.86-0.94)	<0.01	0.67 (0.62-0.72)	<0.01	0.49 (0.35-0.69)	<0.01	0.42 (0.28-0.63)	<0.01
Secondary education	0.94 (0.66-1.34)	0.74	0.71 (0.42-1.22)	0.22	0.43 (0.26-0.71)	<0.01	0.34 (0.13-0.75)	0.03
Post-secondary education	1.16 (0.97-1.39)	0.10	0.97 (0.60-1.56)	0.90	0.31 (0.14-0.66)	<0.01	0.33 (0.12-0.95)	0.04
Tertiary education	1.15 (0.84-1.57)	0.38	0.77 (0.46-1.31)	0.34	0.37 (0.21-0.66)	<0.01	0.25 (0.08-0.79)	0.02
Employment status								
Employed	REF		REF		REF		REF	
Unemployed	0.83 (0.64-1.06)	0.14	0.90 (0.85-0.96)	<0.01	1.41 (1.05-1.89)	0.02	0.79 (0.37-1.69)	0.54
Retired	0.87 (0.73-1.04)	0.12	0.80 (0.62-1.03)	0.08	1.04 (0.79-1.37)	0.79	0.59 (0.26-1.30)	0.19
Unable to work due to health	1.09 (0.77-1.55)	0.62	1.72 (1.27-2.33)	<0.01	2.54 (1.91-3.36)	<0.01	2.05 (1.37-3.08)	<0.01
Student, pupil	1.03 (0.91-1.16)	0.62	0.97 (0.79-1.20)	0.79	2.14 (1.49-3.07)	<0.01	1.31 (0.74-2.32)	0.35
Fulfilling domestic tasks	0.91 (0.72-1.15)	0.43	0.78 (0.64-0.95)	0.02	0.90 (0.64-1.27)	0.55	0.93 (0.75-1.15)	0.49
Other	1.20 (1.03-1.41)	0.02	1.57 (1.39-1.76)	<0.01	2.03 (1.60-2.59)	<0.01	2.26 (1.42-3.62)	<0.01
Marital status								
Single	REF		REF		REF		REF	
Married	0.88 (0.81-0.95)	<0.01	0.85 (0.66-1.09)	0.20	0.92 (0.66-1.28)	0.60	0.72 (0.51-1.02)	0.06
Widowed	0.94 (0.76-1.16)	0.57	1.05 (0.94-1.18)	0.40	1.00 (0.45-2.22)	0.99	1.61 (1.25-2.08)	<0.01

Factor variables	Mild depression RRR (95% CI)	p-value	Moderate depression RRR (95% CI)	p-value	Moderately severe depression RRR (95% CI)	p-value	Severe depression RRR (95% CI)	p-value
Divorced	0.77 (0.59-0.99)	0.05	0.72 (0.58-0.90)	<0.01	0.99 (0.78-1.28)	0.97	0.51 (0.39-0.65)	<0.01
Household size	0.87 (0.82-0.93)	<0.01	0.84 (0.79-0.90)	<0.01	0.79 (0.72-0.87)	<0.01	0.93 (0.78-1.10)	0.38
Household type								
Couple with children	REF		REF		REF		REF	
One-person household	1.22 (1.14-1.32)	<0.01	1.14 (0.95-1.37)	0.17	1.03 (0.89-1.20)	0.68	0.80 (0.55-1.16)	0.24
Lone parent with children	0.91 (0.80-1.03)	0.12	0.85 (0.74-0.97)	0.02	1.07 (0.99-1.15)	0.07	0.62 (0.47-0.82)	<0.01
Couple without children	0.94 (0.86-1.01)	0.11	0.75 (0.62-0.91)	<0.01	0.80 (0.72-0.88)	<0.01	0.67 (0.60-0.74)	<0.01
Other	1.73 (1.35-2.22)	<0.01	1.90 (1.48-2.43)	<0.01	1.22 (0.68-2.20)	0.50	1.12 (0.76-1.67)	0.57
Number of children under 14	1.23 (1.17-1.28)	<0.01	1.15 (1.06-1.26)	<0.01	1.32 (1.10-1.58)	<0.01	1.03 (0.92-1.16)	0.57
Household income								
1st quintile (lowest income)	REF		REF		REF		REF	
2nd quintile	0.93 (0.88-0.99)	0.02	1.04 (0.99-1.09)	0.15	1.20 (1.04-1.39)	0.01	0.77 (0.49-1.21)	0.26
3rd quintile	0.95 (0.87-1.04)	0.28	0.97 (0.87-1.09)	0.62	1.14 (1.00-1.29)	0.04	0.83 (0.58-1.19)	0.32
4th quintile	0.90 (0.81-1.01)	0.08	0.74 (0.55-1.00)	0.05	0.78 (0.56-1.10)	0.15	0.61 (0.33-1.15)	0.13
5th quintile (highest income)	0.81 (0.73-0.91)	<0.01	0.73 (0.59-0.90)	<0.01	1.14 (0.98-1.33)	0.10	1.07 (0.84-1.35)	0.59
Health-related characteristics								
Self-perceived general health								
Very good	REF		REF		REF		REF	
Good	1.71 (1.50-1.96)	<0.01	2.64 (2.05-3.41)	<0.01	3.24 (1.22-8.56)	<0.01	0.63 (0.38-1.04)	0.07
Fair	3.72 (3.30-4.20)	<0.01	8.13 (5.64-11.70)	<0.01	13.43 (3.07-58.83)	<0.01	2.47 (1.19-5.14)	0.02
Bad	7.55 (6.50-8.77)	<0.01	28.85 (22.29-37.35)	<0.01	76.13 (18.90-306.57)	<0.01	19.69 (9.01-43.00)	<0.01
Very bad	13.73 (9.29-20.30)	<0.01	80.42 (43.45-148.84)	<0.01	272.67 (80.03-929.01)	<0.01	155.38 (77.76-310.46)	<0.01
Long-standing health problem (N/Y)	1.24 (1.11-1.38)	<0.01	1.32 (1.09-1.59)	<0.01	1.37 (1.12-1.68)	<0.01	1.39 (0.74-2.60)	0.31
Chronic conditions	1.19 (1.17-1.20)	<0.01	1.24 (1.18-1.31)	<0.01	1.22 (1.11-1.33)	<0.01	1.17 (1.09-1.25)	<0.01
History of depression (N/Y)	3.26 (3.12-3.41)	<0.01	7.59 (6.17-9.32)	<0.01	13.20 (8.24-21.13)	<0.01	15.93 (6.83-37.17)	<0.01
Consultation with mental health professional (N/Y)	2.01 (1.76-2.29)	<0.01	2.56 (1.86-3.53)	<0.01	3.66 (2.89-4.64)	<0.01	4.22 (3.24-5.50)	<0.01
Ability to afford medical services (Y/N)	1.42 (1.14-1.78)	<0.01	1.76 (1.45-2.13)	<0.01	1.75 (1.50-2.04)	<0.01	1.50 (1.20-1.88)	<0.01
Ability to afford mental health services (Y/N)	2.26 (1.86-2.74)	<0.01	3.63 (2.90-4.54)	<0.01	4.05 (2.97-5.54)	<0.01	7.71 (6.18-9.63)	<0.01
Social support (number of close people)								
0	REF		REF		REF		REF	
1 or 2	0.93 (0.86-1.02)	0.12	1.09 (0.71-1.67)	0.71	0.75 (0.61-0.92)	<0.01	0.52 (0.41-0.65)	<0.01
3 to 5	0.79 (0.68-0.91)	<0.01	0.80 (0.59-1.10)	0.18	0.49 (0.39-0.62)	<0.01	0.25 (0.12-0.50)	<0.01
6 or more	0.70 (0.56-0.88)	<0.01	0.67 (0.50-0.90)	<0.01	0.31 (0.26-0.38)	<0.01	0.26 (0.16-0.44)	<0.01
BMI	0.99 (0.98-0.99)	<0.01	0.97 (0.96-0.99)	<0.01	0.96 (0.94-0.99)	<0.01	1.00 (0.94-1.05)	0.87

Key predictors of depression severity across migration groups

To better understand how risk and protective factors influence depression severity within different migration groups, separate multinomial logistic regression analyses were conducted for home populations, settled migrants, and non-settled migrants. Full results are available in **Tables A1–A3** of **Appendix A**.

Self-perceived general health, history of depression, and recent mental health consultations emerged as the strongest and most consistent predictors of depression severity across all groups. Financial barriers to care, particularly the inability to afford mental health services, also consistently worsened depression outcomes across all migration categories. Settled migrants experienced the highest risk associated with these barriers, for instance, they were over 13 times more likely to report severe depression when unable to afford care (RRR = 13.43, 95% CI 4.91-36.74), compared to 8.47 (95% CI 2.51-28.57) for non-settled migrants, and 7.27 (95% CI 6.01-8.79) for home populations. The inability to afford general medical care also increased risks across groups, though to a relatively lesser degree.

Demographic and socioeconomic patterns showed some group differences. Age was a statistically significant risk factor primarily among home populations and settled migrants, with younger adults showing elevated risks for moderate and severe depression. Among non-settled migrants, age effects were more limited. Education was protective only among home populations, where tertiary education statistically significantly reduced the risk of severe depression, but no consistent effect was seen among migrant groups. Regarding employment status, non-settled migrants who were unable to work had the highest relative risks of severe and moderately severe depression, followed by settled migrants and home populations. Other employment statuses such as unemployment or retirement had less consistent associations across groups.

Social support had a protective effect in all three groups, particularly for severe depression. Settled migrants with more close contacts were statistically significantly less likely to report any depression severity symptoms, while home populations showed a similar but weaker

pattern, particularly for severe forms. Among non-settled migrants, social support was also protective but only reached statistical significance for the most severe depression category.

Objective 4: Identify high-risk groups with higher prevalence of depression or greater depression severity

To identify high-risk groups for poorer depression-related outcomes, the regression models from Objective 3 were used to examine the impact of migration status, alongside sociodemographic characteristics, social support, and health-related factors, on depression risk. The results highlighted several key risk groups that exhibited increased vulnerability to depression, particularly when adjusting for the full range of explanatory factors.

High-risk groups by migration status

Migration status emerged as a statistically significant factor in determining depression risk across migration groups. Specifically, settled migrants consistently exhibited elevated odds of depression compared to home populations, both in the univariate and multivariate regression models. Settled migrants had statistically significantly higher odds of depression across all levels of severity, with an aOR of 1.60 (95% CI 1.42-1.80). This group showed consistently increased risks, even after accounting for sociodemographic characteristics, health-related factors, and social support.

On the other hand, non-settled migrants demonstrated a modest but also statistically significant increase in risk (aOR = 1.22, 95% CI 1.10-1.36), relative to home populations. However, this risk was more pronounced only for severe depression in the multinomial regression model, where non-settled migrants were shown to have a higher risk (RRR = 1.44, 95% CI 1.31-1.59), compared to home populations.

Therefore, both migrant groups can be identified as higher-risk groups for poorer depression-related outcomes, particularly in comparison to home populations.

Additional risk factors: Sociodemographic and health-related factors

Several sociodemographic and health-related factors were identified as key contributors to depression risk. Younger age, particularly in individuals aged 15-24, was a statistically significant risk factor for depression. Self-perceived health was another critical determinant, with those reporting poorer health at a much higher risk for depression. A history of depression in the past year also emerged as a strong predictor of current depression. Additionally, individuals unable to afford mental health services were at substantially increased risk. Social support, on the other hand, acted as a key protective factor, with those having more close contacts experiencing a statistically significantly reduced risk of depression.

Objective 5: Explore interaction effects between migration status and other determinants of depression-related outcomes

To investigate potential effect modification across socio-ecological levels, interaction terms were added to the multiple logistic regression model. Specifically, interactions were tested between migration status (macro-level) and selected micro- and meso-level predictors including sex, employment status, social support, and affordability of mental health services in the same model (**Table A4** of **Appendix A**).

The interaction between migration status and social support was statistically significant. Compared to home populations, settled migrants with three to five close contacts had 59% lower odds of depression (aOR = 0.41, 95% CI 0.31-0.55), and those with six or more close contacts had 57% lower odds (aOR = 0.43, 95% CI 0.18-0.99), suggesting a strong protective effect. These relationships were confirmed in the marginal effects analysis: for settled migrants, having six or more close contacts reduced the predicted probability of depression by nearly 10 percentage points, compared to only 2 percentage points among home populations and no statistically significant reduction for non-settled migrants (p-value = 0.87). This suggests that social support may be more impactful for certain migrant subgroups, particularly those with settled status (EU citizenship).

A statistically significant interaction between migration status and sex was also observed. While in the main model, female sex had only borderline significance, the interaction model indicated that being female was associated with higher depression risk only among home populations (aOR = 1.19, 95% CI 1.00-1.41). Marginal effects analysis showed that females had a significantly higher probability of depression (+0.7 percentage points) only among home populations; this association was non-significant for both migrant groups.

The interaction between employment status and migration status also revealed notable subgroup differences. Among settled migrants, being unable to work due to health increased the odds of depression substantially (aOR = 1.89, 95% CI 0.92-3.91), while unemployment was even more strongly associated (aOR = 2.58, 95% CI 1.90-3.50). Marginal effects showed that settled migrants who were unemployed had a +5.7 percentage point increase in the

probability of depression (p-value < 0.001), compared to no significant increase among home populations. Conversely, being a student was associated with a higher predicted risk of depression only among non-settled migrants (+5.0 percentage points, p-value < 0.001).

Although the interaction between migration status and ability to afford mental health services was not statistically significant in the logistic regression model, marginal effects revealed some differences across groups. Among home populations, being unable to afford mental health care increased the predicted probability of depression by +4.7 percentage points (p-value < 0.001). This effect was stronger for settled migrants (+6.6 percentage points, p-value < 0.001), and most pronounced for non-settled migrants, where the increase reached +9.4 percentage points (p-value = 0.001). These results highlight that access barriers may exacerbate mental health risk disproportionately among migrant groups.

Objective 6: Ensure robustness and inform future data collection and policy recommendations

Sensitivity analysis

To assess the robustness of the main logistic regression model, a sensitivity analysis was conducted using a resampled dataset with balanced representation across migration groups (**Table 12**). The balanced dataset preserved the same predictors and modelling structure, enabling direct comparison with the original results.

Overall, the results largely confirmed the main analysis. Migration status remained an important predictor of depression, with settled migrants continuing to face statistically significantly elevated odds of depression relative to home populations (aOR = 1.60, 95% CI 1.42-1.80). Similarly, non-settled migrants also had statistically significantly higher odds of depression (aOR = 1.27, 95% CI 1.07-1.52), consistent with the main analysis.

Several other associations also remained stable. Poor self-perceived health, history of depression, and barriers to accessing healthcare services continued to show strong and statistically significant associations with depression. Age remained a strong predictor, with younger individuals at increased risk. Education retained a broadly protective pattern, while

income associations were less consistent in the balanced sample. Social support also continued to play a protective role.

Some differences emerged. The effect of sex became statistically significant, with females showing higher odds of depression than males (aOR = 1.48, 95% CI 1.18-1.85). Although the odds ratio for sex was somewhat higher than in the main model (aOR = 1.16, 95% CI 0.98-1.37), the direction of the association remains consistent. Overall, the sensitivity analysis confirmed the robustness of the findings, indicating that the main results were not substantially influenced by class imbalance in the original dataset.

Informing data collection and policy recommendations

This aspect of the objective is addressed in the Discussion section, where the implications of the study's findings for improving mental health monitoring, reducing disparities, and supporting vulnerable groups are explored in greater depth.

Table 12 | Sensitivity analysis of factors associated with depression (PHQ-8 score ≥ 10) using a balanced dataset.

Factor variables	aOR	p-value
Migration status		
Home populations	REF	
Settled migrants	1.60 (1.42-1.80)	<0.01
Non-settled migrants	1.27 (1.07-1.52)	<0.01
Sociodemographic characteristics		
Sex		
Male	REF	
Female	1.48 (1.18-1.85)	<0.01
Age group		
≥ 60	REF	
25 – 59	1.60 (1.40-1.83)	<0.01
15 – 24	4.19 (2.50-7.03)	<0.01
Residential area classification		
Cities	REF	
Towns and suburbs	0.72 (0.41-1.25)	0.24
Rural areas	0.79 (0.51-1.21)	0.28
Education		
No formal education	REF	
Primary education	0.72 (0.62-0.83)	<0.01
Secondary education	0.63 (0.51-0.78)	<0.01
Post-secondary education	0.78 (0.59-1.02)	0.07
Tertiary education	0.57 (0.41-0.79)	<0.01
Employment status		
Employed	REF	
Unemployed	1.79 (1.45-2.22)	<0.01
Retired	0.81 (0.38-1.70)	0.58
Unable to work due to health	1.62 (1.00-2.60)	0.05
Student, pupil	1.04 (0.69-1.59)	0.85
Fulfilling domestic tasks	0.86 (0.50-1.48)	0.59
Other	1.95 (1.15-3.30)	0.01
Marital status		
Single	REF	
Married	1.47 (0.54-4.01)	0.45
Widowed	1.05 (0.75-1.48)	0.76
Divorced	1.01 (0.68-1.50)	0.95
Household size	0.85 (0.76-0.94)	<0.01
Household type		
Couple with children	REF	
One-person household	1.46 (0.46-4.58)	0.52
Lone parent with children	0.74 (0.51-1.07)	0.11
Couple without children	0.61 (0.44-0.85)	<0.01
Other	1.88 (1.02-3.47)	0.04
Number of children under 14	0.96 (0.71-1.29)	0.76
Household income		
1st quintile (lowest income)	REF	
2nd quintile	0.78 (0.59-1.05)	0.10
3rd quintile	0.73 (0.40-1.32)	0.29

Factor variables	aOR	p-value
4th quintile	0.52 (0.26-1.04)	0.06
5th quintile (highest income)	0.88 (0.64-1.21)	0.44
Health-related characteristics		
Self-perceived general health		
Very good	REF	
Good	1.80 (1.52-2.14)	<0.01
Fair	5.08 (3.75-6.88)	<0.01
Bad	14.16 (7.61-26.37)	<0.01
Very bad	58.98 (19.68-176.78)	<0.01
Long-standing health problem (N/Y)	1.45 (1.14-1.85)	<0.01
Chronic conditions	1.05 (1.02-1.08)	<0.01
History of depression (N/Y)	5.76 (4.87-6.80)	<0.01
Consultation with mental health professional (N/Y)	1.91 (1.63-2.23)	<0.01
Ability to afford medical services (Y/N)	1.53 (1.10-2.14)	0.01
Ability to afford mental health services (Y/N)	1.83 (1.46-2.29)	<0.01
Social support (number of close people)		
0	REF	
1 or 2	0.50 (0.43-0.57)	<0.01
3 to 5	0.44 (0.36-0.53)	<0.01
6 or more	0.44 (0.37-0.52)	<0.01
BMI	0.99 (0.98-1.00)	0.14

Model fit and assumption checking

Multiple logistic regression

The adjusted multiple logistic regression model, which included migration status along with a comprehensive set of demographic, socioeconomic, and health-related predictors, demonstrated strong model performance. McFadden's pseudo-R^2 value was 35.9%, indicating that the model explained approximately 36% of the variance in the likelihood of having depression (PHQ-8 score ≥10). This suggests that these variables collectively offered substantial explanatory power.

Model fit statistics such as Cragg & Uhler's R^2 and McKelvey & Zavoina's R^2 also supported the robustness of the model, further validating its performance. Importantly, this model was derived using a theory-driven a priori variable selection approach based on existing literature. When compared with alternative models derived through forward and backward stepwise selection methods, the a priori model consistently yielded the lowest Akaike (AIC) and Bayesian (BIC) information criterion values. This confirmed its superior fit and justified its retention as the final model for the main analysis.

Multinomial logistic regression

To assess the relationships between predictors and varying levels of depression severity, a multinomial logistic regression model was used. Initially, an ordinal logistic regression model was considered due to its efficiency and interpretability for ordered categorical outcomes like the depression severity levels defined by the Patient Health Questionnaire-8 (PHQ-8). Ordinal logistic regression is generally preferred for ordinal outcomes where the categories have a natural order (Hosmer et al., 2013). However, a critical assumption for applying ordinal logistic regression is the proportional odds assumption. This assumption holds that the relationship between each pair of outcome groups is statistically the same (Hosmer et al., 2013).

In our dataset, preliminary analysis including the Brant test (Brant, 1990) indicated that this assumption was violated (p-value < 0.001), suggesting that the odds ratios between different levels of depression severity were not consistent. As a result, a multinomial logistic regression

model was deemed more appropriate. Unlike ordinal logistic regression, multinomial logistic regression does not require the proportional odds assumption and allows for the estimation of multiple, separate logistic regressions where each category of the outcome can be compared to a reference category (Hosmer et al., 2013).

Fit statistics for the adjusted multinomial model indicated good model performance. McFadden's pseudo-R^2 value was 23.1%, meaning the model explained approximately 23% of the variance in depression severity. These metrics, alongside the likelihood ratio test showing a statistically significant improvement over the null model (p-value < 0.001), reinforced the suitability of the multinomial logistic regression approach.

2.5 Discussion

This secondary data analysis aimed to examine the factors influencing the prevalence of depression and depression severity among migrants and non-migrants in the EU. The findings from both multiple logistic and multinomial logistic regression analyses highlighted the significant role of migration status, sociodemographic factors, and health-related variables in shaping depression-related outcomes across multiple levels of the Social-Ecological Model (SEM).

Migration status emerged as a key predictor in both multiple and multinomial logistic regression analyses. In the adjusted analyses, both settled and non-settled migrants showed greater vulnerability to depression than home populations, although the pattern differed between the two migrant groups. Settled migrants showed a more consistently elevated likelihood of depression across both the binary and severity-based analyses, whereas, for non-settled migrants, the increased risk appeared more limited and was particularly evident at the severe end of the depression spectrum. This pattern suggests that while migration status is associated with heightened vulnerability to depressive symptoms, the nature and extent of this vulnerability may differ across specific migrant groups. This finding aligns with prior research showing that migrants often face greater mental health challenges due to acculturative stress, discrimination, and socio-economic difficulties (Lindert et al., 2009; Bhugra, 2004).

The marked difference between settled and non-settled migrants requires careful interpretation. One possible explanation is that the settled migrant group may include individuals with longer residence in the host setting and therefore longer exposure to cumulative post-migration stressors, such as labour market disadvantage, discrimination, and social exclusion. This interpretation is consistent with literature on the “healthy migrant effect”, which suggests that any initial health advantage among migrants may diminish over time, and with studies showing poorer mental health outcomes among migrants with a longer duration of residence, partly explained by social and socioeconomic disadvantage (Elshahat et al., 2022, p. 1564; Honkaniemi et al., 2020).

At the same time, the wider literature does not point in a single direction. Reviews focused on refugees and asylum seekers in Europe have often found that temporary or insecure residence status is associated with poorer mood, depression, anxiety, and PTSD, and German evidence has likewise reported markedly higher depressive symptoms among people with temporary residence than among EU citizens (Mulcaire et al., 2024; Bartig et al., 2023; Delilovic et al., 2023; Hajak et al., 2021). The lower adjusted odds observed here for the non-settled group should therefore not be interpreted as evidence that non-EU citizenship is protective in itself. Rather, this pattern likely reflects the limitations of the proxy categories available in EHIS. In this study, “settled” and “non-settled” were derived from citizenship and birthplace only, and the dataset could not distinguish migration pathway, legal status, reason for migration, or length of stay. As a result, the non-settled group is likely to be highly heterogeneous, potentially including healthier recent arrivals, workers, or students, while the settled group may capture individuals with longer settlement histories and accumulated disadvantage. Taken together, these findings suggest that the observed difference between settled and non-settled migrants should be interpreted cautiously, as an association shaped by heterogeneous migration experiences rather than as a direct effect of settlement status itself.

Age was another important factor influencing depression prevalence and depression severity. As an individual-level (micro) attribute, age reflects personal life stage and vulnerability to stressors. Younger age groups showed greater vulnerability to depression than older adults, and this pattern was also reflected in the severity analyses. This finding is consistent with established literature indicating that younger individuals are more susceptible to depression due to factors such as higher stress levels, life transitions, and socio-economic instability (Twenge et al., 2019; Blazer et al., 1994).

Educational attainment, primarily an individual-level (micro) variable but with links to institutional and social contexts (meso-level) (McLeroy et al., 1988), presented a nuanced relationship with depression severity. In the main regression analysis, higher educational attainment appeared to be protective against depression overall. This is broadly consistent with evidence that education may support mental health (including depression) through pathways such as improved health literacy, greater access to economic resources, and better opportunities for social mobility (Bjelland et al., 2008; Cutler and Lleras-Muney, 2006).

However, the multinomial analysis suggested a more complex pattern, with higher education appearing more clearly protective against more severe depression, while showing less consistent or even adverse associations for milder depression categories. This may indicate that while education generally offers mental health benefits, certain pressures associated with higher educational attainment or occupational expectations may still contribute to milder depressive symptoms in some groups. For some individuals, especially migrants, higher qualifications may not translate into equivalent labour market opportunities, social recognition, or occupational security in the host setting. In such cases, education may remain protective in relation to more severe depression, while still coexisting with frustration, status inconsistency, or underemployment that may contribute to milder depressive symptoms. This interpretation is supported by evidence that education-occupation mismatch and overqualification among migrants are associated with poorer mental health and health outcomes in European settings (Herold et al., 2024; Brendler-Lindqvist et al., 2022). Further research is needed to clarify these pathways.

Employment status, situated at the meso-level of the SEM due to its intersection with institutions such as the labour market and welfare systems, also appeared to shape depression-related outcomes. In particular, being unable to work due to health reasons was consistently associated with poorer outcomes, and student status also appeared to be linked to an elevated depression risk in some analyses. By contrast, retirement and domestic roles appeared to marginally lower depression risk. The severity analyses also indicated that those unable to work due to health reasons faced the poorest outcomes across all severity levels, reinforcing the well-established bidirectional relationship between physical and mental health (Paul and Moser, 2009; Dooley et al., 1994). Overall, these findings are consistent with wider evidence, but they also suggest that employment status may capture more than simple economic activity alone. For instance, being unable to work may reflect a combination of illness burden, loss of routine, reduced social participation, and financial strain, all of which may reinforce depression. Likewise, the finding for students may reflect transitional pressures, uncertainty, and possible social isolation rather than employment disadvantage in a narrower sense. Household income, a macro-level determinant reflecting broader economic inequalities, showed more mixed effects overall, although the severity analysis suggested that greater financial resources may offer some protection against more severe depression. This is

broadly consistent with literature linking lower socioeconomic status to greater depression risk (Lorant et al., 2003). At the same time, European evidence on refugees and other migrant groups suggests that unemployment, financial hardship, and adverse working conditions are often strongly associated with depression and other common mental disorders, indicating that employment-related variables should be understood as markers of broader post-migration living conditions rather than purely labour-market status alone (Herold et al., 2024; Nowak et al., 2023a).

Health-related variables were the strongest individual-level (micro) predictors in this study. Poor self-perceived health and a higher burden of chronic conditions consistently increased the likelihood of depression across the analyses. In particular, poorer self-rated health emerged as one of the most powerful correlates of both depression prevalence and depression severity. These findings align with previous work showing that physical illness and perceived poor health frequently co-occur with mental health difficulties (Prince et al., 2007; Moussavi et al., 2007). At the same time, the direction of this relationship is unlikely to be one-way. Poor physical health may increase the risk of depression through pain, functional limitation, and reduced quality of life, but depression itself may also worsen self-rated health by shaping how symptoms are perceived, experienced, and reported. The strong association observed here should therefore be interpreted as reflecting a likely bidirectional relationship rather than a causal pathway from physical illness to depression alone. Evidence from longitudinal research supports this bidirectional interpretation, suggesting that self-rated health and depressive symptoms influence one another over time rather than operating through a simple one-directional pathway (Peleg and Nudelman, 2021). In addition, because both chronic conditions and self-rated health were self-reported, some overlap in reporting style may have contributed to the strength of these associations. The most extreme estimates in the poorest health categories should also be interpreted with caution, as they may partly reflect relatively small subgroup sizes.

A history of depression in the past year was also a major risk factor in both analyses, strongly increasing the likelihood of current depression and of more severe depressive symptoms. This is consistent with the literature on recurrence and persistence of depression, which shows that previous depressive symptoms are an important predictor of future mental ill-health

(Kessler et al., 2003). Similarly, consultation with mental health professionals in the past year was associated with poorer current outcomes, likely again reflecting the persistence or recurrence of symptoms rather than any adverse effect of service use itself.

Social support functioned as a meso-level protective factor within the SEM. Greater availability of close social contacts was associated with a reduced likelihood of depression in the main analysis, and the severity analysis also suggested a protective role across the depression severity spectrum. These findings align with extensive literature emphasising the role of social support in mitigating mental health difficulties by providing emotional and practical support (Akgor et al., 2022; Castaner et al., 2021; Fellmeth et al., 2020). However, the wider literature also suggests that the mental health value of social support depends not only on the number of social contacts available, but on the type, quality, and accessibility of those relationships. A recent Swedish study of resettled Syrian refugees, for example, found that both connections within one's own community and connections beyond it were linked to lower depressive symptoms, but that support from closer networks appeared especially important during early resettlement (Johnson-Singh et al., 2024). Similarly, broader evidence from European refugee populations suggests that weak social networks, loneliness, and social isolation are consistently associated with poorer mental health, while stronger social support is often linked to lower symptom levels, although findings are not always uniform across studies (Nowak et al., 2023a). This may help explain why social support appeared especially important for some groups, particularly settled migrants, but less clearly protective for others. It is therefore likely that what matters is not only the presence of social contacts, but also whether those relationships provide meaningful emotional support, practical help, and a sense of belonging in the host context.

A sensitivity analysis using a balanced dataset reinforced the robustness of these findings. Migration status continued to be an important predictor, with both migrant groups showing higher odds of depression, and the main patterns for age, education, health-related variables, and social support remained broadly consistent. Some differences emerged, particularly in relation to gender, which became more clearly associated with depression in the balanced analysis. However, the overall direction of findings remained similar, suggesting that the main results were not driven solely by class imbalance in the original sample.

The separate analyses by migration status provided deeper insights into how different factors shaped depression and depression severity within each group. While similar trends were observed across all groups, including the strong predictive role of self-perceived health and other health-related variables, the effects of factors such as age, employment, and social support varied between home populations, settled migrants, and non-settled migrants. This variation suggests that the same apparent risk or protective factors may not operate in equivalent ways across migration groups. In other words, migration status appears to modify the practical consequences of factors such as unemployment, educational attainment, and support networks. One of the most notable contrasts across the groups was the role of social support. In the stratified analyses, social support appeared to be a particularly important protective factor for settled migrants, whereas its protective effect was less clear among home populations and non-settled migrants. This may indicate that for some migrant groups, social connectedness is especially important in buffering the long-term effects of settlement-related disadvantage, whereas for others the available support may be weaker, less accessible, or less able to offset broader structural uncertainty. This interpretation is consistent with evidence that social support in migrant and refugee populations is shaped by network composition, resettlement phase, and wider post-migration living conditions, rather than operating as a uniform protective resource across all groups (Johnson-Singh et al., 2024; Nowak et al., 2023a).

The inclusion of interaction terms in the main multiple logistic regression model enabled a more nuanced understanding by revealing how migration status modified the influence of individual and contextual factors on depression. Specifically, the interactions suggested that social support reduced depression risk most strongly among settled migrants, while being less clearly protective among non-settled migrants. Similarly, being unemployed or unable to work due to health reasons appeared particularly detrimental for settled migrants, while student status posed a greater risk among non-settled migrants. Affordability of mental health care also had greater predictive importance in the interaction models, particularly among migrant groups. Although this interaction was not statistically significant in the main model, marginal effects suggested that inability to afford care may increase the predicted probability of depression more strongly for settled and non-settled migrants than for home populations. Taken together, these patterns reinforce the value of a multilevel interpretation: migration

status does not simply add risk in isolation, but appears to shape how other social and structural determinants are experienced. This is important because it suggests that migrant mental health inequalities may be produced through combinations of disadvantage rather than through any single factor alone.

Interpreted through the SEM, these findings suggest that depression-related disparities are shaped not only by individual-level factors, but also by social support and structural conditions such as socioeconomic disadvantage and healthcare access.

2.5.1 Strengths and limitations

This study has several important strengths. First, the EHIS dataset enabled the examination of a large and diverse population across multiple European countries, allowing for robust comparisons between migrant groups and home populations. The large sample size enhanced statistical power and made it possible to conduct detailed subgroup analyses, including stratified models. In addition, the availability of multiple socioeconomic, health-related, and social variables strengthened the analysis by allowing adjustment for a broad range of potential confounders and by supporting the examination of the complex interplay between migration, health, and social determinants.

A further strength of the study was the use of the PHQ-8 as the key outcome measure. The PHQ-8 is a validated and widely used measure of depressive symptoms, and its very close correspondence with the more commonly used PHQ-9 supports comparability with the broader depression literature (Kroenke et al., 2010; Kroenke et al., 2009). Its use was particularly appropriate in this study because EHIS provides a harmonised PHQ-8 measure across countries, allowing more consistent comparison of depression prevalence and depression severity between migrant and non-migrant groups. In addition, the use of the standard cut-off score of ≥10 strengthened comparability with previous studies.

Despite these strengths, several limitations must be acknowledged. The dataset, despite its large sample size and representativeness, relies on cross-sectional data, which limits causal inference and means that the associations observed cannot be interpreted as directional or

causal relationships (Savitz and Wellenius, 2023). In addition, the study relied on self-reported measures of depression and health status, which may introduce reporting bias through under-reporting or over-reporting of symptoms due to stigma, social desirability, or recall issues. Research indicates that individuals may underreport depressive symptoms in order to align with socially desirable responses, while recall bias may also affect the accuracy of self-reported health data (Latkin et al., 2017; Hunt et al., 2003).

The PHQ-8 itself also has limitations that should be considered when interpreting the findings. Although it is a useful and well-validated screening measure, it is not a clinical diagnostic tool and reflects self-reported symptoms over the preceding two weeks rather than clinically confirmed depressive disorder. Moreover, although the use of the same cut-off score across countries improves comparability, the performance and interpretation of this threshold may not be identical across all cultural and linguistic contexts, where the expression and reporting of depressive symptoms may differ. The omission of the suicidal ideation item also makes the PHQ-8 more practical for large-scale population surveys, but means that it does not capture the full PHQ-9 symptom profile.

Another limitation is the broad categorisation of migration status, which does not account for substantial heterogeneity within each group. In particular, the dataset does not distinguish between forced migrants, voluntary migrants, labour migrants, or other migration pathways, nor does it capture legal status, reason for migration, or length of stay. This restricts the ability to interpret differences between migrant groups with greater precision.

Overall, despite these limitations, this study contributes to a growing body of literature on migrant mental health by providing cross-national evidence on depression-related outcomes and by underscoring the importance of social and structural determinants in shaping these inequalities.

2.5.2 Implications for research, policy, and practice

The findings of this study have several important implications for research, policy, and practice. From a policy and practice perspective, mental health interventions should be better

tailored to the needs of different migrant groups, taking into account factors such as migration status, age, gender, social support, and socioeconomic disadvantage (Joo and Liu, 2021). In particular, the findings suggest that efforts to reduce barriers to mental health care access are especially important for migrant groups facing a higher risk of depression. Given the strong association between health status and depression, integrating mental health services within primary healthcare may help ensure that both physical and mental health needs are addressed more holistically, thereby improving overall well-being and reducing the burden of depression among migrant populations. The World Health Organization advocates for the integration of mental health into primary care, emphasising that it enhances access to services, promotes respect for human rights, and leads to better health outcomes (World Health Organization, 2008).

The findings also point to the importance of wider social and structural responses. The significant role of social support in protecting against depression underscores the need for community-based approaches that strengthen social connections, reduce isolation, and support integration (Markey et al., 2022). Initiatives to strengthen social integration can help mitigate the adverse effects of migration-related stressors on mental health (Szaflarski and Bauldry, 2019; Alemi et al., 2014). In addition, the observed role of affordability barriers and socioeconomic disadvantage highlights the importance of policies that improve financial security, employment opportunities, and access to essential services for migrants, as these factors may influence depression-related outcomes alongside more direct healthcare interventions (Taylor et al., 2023; Lindert et al., 2009).

From a research perspective, the lack of disaggregated data on specific migrant subgroups, particularly those in vulnerable circumstances, highlights a critical gap in existing research. While this study provides useful cross-national evidence on depression among broader migrant groups, the absence of variables capturing migration pathway, legal status, length of stay, and other subgroup-specific characteristics limits more precise interpretation. Future research should therefore prioritise more disaggregated data collection so that the mental health needs of specific populations, including forced migrants, asylum seekers, and displaced women, can be examined more clearly. This should include not only better migration-specific indicators, but also a broader range of mental health outcomes beyond depression, such as

anxiety, PTSD, and other mental health conditions, in order to provide a more comprehensive picture of migrant mental health. It may also include variables relating to pregnancy status, access to maternal healthcare, social support, and migration-specific stressors, which would allow more nuanced analysis of risk and protective factors. Strengthening the evidence base in this way would support the development of targeted and evidence-based responses across research, policy, and practice.

3 Mapping the Evidence on Perinatal Mental Health Among Forced Migrant Women: A Scoping Review

3.1 Chapter overview

This chapter presents a scoping review examining perinatal mental health among forced migrant women. Building on the foundational chapter, it responds to an important gap identified in the existing literature. Chapter 1 showed that while evidence on maternal health and perinatal mental health among migrant women more broadly is growing, evidence focusing specifically on forced migrant women remains limited. This makes it difficult to determine what is currently known about the prevalence of mental health problems in this population, which risk and protective factors have been identified, and where the main gaps in knowledge remain.

Positioned within the broader thesis, this review adds a more focused lens on a subgroup likely to experience compounded vulnerability during the perinatal period, where the demands of pregnancy and early motherhood may intersect with displacement, trauma, legal insecurity, social isolation, and barriers to care. A scoping review was considered appropriate because the field is broad, heterogeneous, and still developing, requiring a method that can systematically map the range, nature, and extent of the evidence rather than answer a narrowly defined effectiveness question alone. By reviewing what is known about the prevalence, risk and protective factors, and research gaps relating to perinatal mental health among forced migrant women, this chapter addresses Thesis Research Question 3. It also lays important groundwork for the later policy analysis by highlighting how mental health risks in this population operate across individual, social, and structural levels, thereby underscoring the importance of examining whether resettlement and migration policies adequately account for these multilevel vulnerabilities.

3.2 Abstract

Introduction: Perinatal mental health among forced migrant women remains an underexplored area in the literature despite the multiple social, structural, and trauma-related stressors that may shape risk during pregnancy and the postpartum period. This scoping review aimed to map the available evidence on the prevalence of perinatal mental health disorders among forced migrant women, identify the factors associated with these outcomes, and highlight key gaps in the evidence base.

Methods: This review adopted the scoping review framework proposed by Arksey and O'Malley. A comprehensive search was conducted across electronic databases including Embase, PubMed, PsycINFO, Google Scholar, PsycArticles, CINAHL, and the Maternity & Infant Care Database, alongside grey literature sources. Studies published in English between 1951 and 1 August 2022 were eligible for inclusion. Studies that did not distinguish forced migrants from other migrant groups were excluded. Findings were synthesised using descriptive mapping and inductive thematic analysis.

Results: A total of 1,105 articles were identified, and 16 studies met the eligibility criteria and were included in the review (12 quantitative studies, three qualitative studies, and one mixed-methods study). Three major themes were identified: 1) the prevalence of mental health disorders; 2) factors influencing mental health outcomes; and 3) the performance of screening and measurement tools. Across the included studies, forced migrant women appeared to experience a substantial burden of perinatal mental health difficulties, particularly depression, anxiety, and PTSD. Trauma exposure, violence, limited social support, and barriers to accessing care emerged as important influences on mental health outcomes.

Conclusion: Forced migrant women appear to face heightened perinatal mental health vulnerability, yet the evidence base remains limited and methodologically uneven. The review highlights the absence of intervention studies, the limited validation of screening tools in diverse forced migrant populations, and the lack of evidence from low- and middle-income

settings where many forced migrants reside. Addressing these gaps is essential for developing more effective research, policy, and care responses for this population.

3.3 Background

Forced migration exposes those experiencing it to multiple health and social risks that may lead to poor health outcomes either in their host country or during transit to another country (Gushulak and MacPherson, 2000). These risks include trauma, family separation, gender-based violence, rape, torture, social isolation, and limited social support, as well as cultural and structural barriers that may continue after displacement (Wittkowski et al., 2017; Nilaweera et al., 2014; Latif, 2014; Fisher et al., 2012). Such experiences have important implications for mental health, particularly for women, who constitute a substantial proportion of forced migrants and often face gender-specific vulnerabilities.

The perinatal period, defined as pregnancy and up to one year after childbirth, represents a critical window for mental health. The prevalence of mental health disorders during this period remains high across populations and has been associated with adverse consequences for both maternal and child health (Bauer et al., 2014; Vesga-Lopez et al., 2008). For forced migrant women, perinatal mental health may be shaped by the cumulative effects of pre-migration trauma, migration-related stressors, and post-migration social and structural challenges.

Despite the significant implications of these issues, the literature addressing the perinatal mental health of forced migrant women remains scarce. This gap is concerning given that nearly half of forced migrants are women, and a substantial proportion of these women are of childbearing age (UNHCR, 2021a). As discussed in the foundational chapter, a growing body of literature has examined maternal and perinatal health outcomes among migrant women more broadly, yet much less is known specifically about forced migrant women. This distinction matters because forced migrants may differ from other migrant groups in terms of pre-migration trauma, migration experiences, legal insecurity, and post-migration stressors, all of which may shape perinatal mental health in distinct ways. However, studies vary considerably in how migrant populations are defined, often grouping together voluntary and forced migrants despite these important differences. In addition, perinatal mental health outcomes among forced migrant women have been investigated using diverse study designs,

measurement tools, and conceptual frameworks, making it difficult to synthesise the evidence and draw overarching conclusions.

Several related reviews help situate the present review. Anderson et al. (2017) conducted a systematic review and meta-analysis on perinatal mental disorders among migrant women, but this review defined migrants broadly and did not focus specifically on forced migrant women (Anderson et al., 2017). More recently, Stevenson et al. (2023) examined the global burden of perinatal common mental disorders among migrant women and included comparisons between forced and economic migrants, but again the focus was on migrant women more broadly rather than on forced migrant women as a distinct population (Stevenson et al., 2023). In addition, Ether et al. (2025) reviewed interventions for managing prepartum and postpartum mental health issues among refugee women from fragile and conflict-affected countries, but this review was narrower in scope, focusing on intervention evidence rather than mapping prevalence, associated factors, and wider research gaps, and it was published after the present review had already been conducted (Ether et al., 2025). These reviews therefore highlight the importance of the topic, but they do not remove the need for a review specifically focused on mapping the broader evidence base on perinatal mental health among forced migrant women.

To our knowledge, as of August 2022, when this review was conducted, there was a lack of reviews that specifically mapped the available evidence on perinatal mental health among forced migrant women while distinguishing this group from migrant populations more broadly. Previous reviews have often drawn conclusions across mixed migrant groups, limiting the extent to which findings can be applied specifically to women affected by forced migration.

Scoping reviews are well suited to mapping heterogeneous bodies of literature, clarifying key concepts, and describing how research in a given field has been conducted (Munn et al., 2018). Accordingly, this chapter presents a scoping review of the literature on perinatal mental health among forced migrant women, with a particular focus on the prevalence of perinatal mental health problems, the factors associated with these outcomes, and the gaps in the existing evidence base. In doing so, the chapter addresses Thesis Research Question 3 and is guided by the following questions:

1. What is the prevalence of perinatal mental health disorders among forced migrant women?
2. What factors, whether risk or protective, are associated with perinatal mental health outcomes in forced migrant women?
3. What are the main gaps in the existing evidence base on perinatal mental health among forced migrant women?

3.4 Methods

This review adopted the scoping review framework proposed by Arksey and O'Malley (2005) (Arksey and O'Malley, 2005), with additional guidance from later developments in scoping review methodology (Munn et al., 2018; Levac et al., 2010). The reporting of this review was informed by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) (Tricco et al., 2018).

A scoping review was considered more appropriate than a systematic review because the purpose of this chapter was to map a broad and heterogeneous body of literature, identify how perinatal mental health among forced migrant women has been studied, and determine the major gaps in the evidence base, rather than to answer a narrowly defined question about intervention effectiveness or produce a pooled quantitative estimate from methodologically comparable studies. This approach was particularly appropriate given the conceptual breadth of the topic and the expected variation in study populations, study designs, measurement tools, and outcome definitions.

The review followed the five key stages outlined by Arksey and O'Malley (2005): (1) identifying the research questions; (2) identifying relevant studies; (3) study selection; (4) charting the data; and (5) collating, summarising, and reporting the results (Arksey and O'Malley, 2005).

3.4.1 Searches

A comprehensive search of electronic databases was conducted, including: Embase, PubMed, PsycINFO, PsycArticles, CINAHL, the Maternity & Infant Care Database, and Google Scholar. These databases were selected to ensure the review captured a broad range of medical, psychological, and public health literature relevant to perinatal mental health. Embase and PubMed were used to identify biomedical and clinical studies, with PubMed also providing access to MEDLINE-indexed literature. PsycINFO and PsycArticles were included to ensure coverage of psychological and mental health research, while CINAHL and the Maternity & Infant Care Database were selected because of their relevance to nursing, maternity, and perinatal health research. Google Scholar was used as a supplementary search tool to identify

additional potentially relevant studies that may not have been indexed consistently across the main databases.

The final database search for this scoping review was conducted on 1 August 2022. Search strategies were tailored for each database to reflect differences in indexing systems, subject headings, and search functionality. The search strategy was developed iteratively from the review questions and refined through preliminary scoping searches. The main search concepts were forced migration, the perinatal period, and mental health, with additional terms relating to interventions included to ensure that studies addressing support or treatment approaches were also captured. For forced migration, search terms included "*forced migration*", "*displacement*", "*refugee*", and "*asylum seeker*". The perinatal period was captured using terms such as "*pregnan**", "*pregnancy*", "*perinatal**", "*antenatal*", "*prenatal*", "*postnatal*", and "*postpartum*". Mental health-related terms included "*mental health*", "*depression**", "*anxiet**", "*post-traumatic stress disorder*" and "*PTSD*", while intervention-related terms included "*intervention**", "*treatment**", "*support*", and "*therap**". Boolean operators (AND/OR) were used to combine the search terms, and truncation was applied where appropriate.

In addition to peer-reviewed literature, grey literature sources were searched to broaden coverage and reduce the risk of relying only on published academic studies. These included OpenGrey (https://www.opengrey.eu/), Mednar (https://mednar.com/), and a Google search, with at least the first ten pages of Google results screened. Reference lists of included studies and citation index searches were also examined to identify additional relevant publications that may not have been captured in the initial database searches.

The search was restricted to studies published in English. This restriction was applied for feasibility reasons, including the practical constraints of screening, translation, and interpretation within the scope of the doctoral project. However, it is acknowledged that this may have resulted in the exclusion of relevant studies published in other languages and therefore represents a limitation of the review.

Databases such as the Cochrane Library and Web of Science, as well as additional grey literature sources such as WHO Global Index Medicus, GreyNet International, and NICE evidence resources, were not searched. This reflected the pragmatic scope of the review and the intention to conduct a broad scoping exercise within the limits of a doctoral project rather than a fully exhaustive systematic review. In addition, the review was not focused primarily on intervention effectiveness, which reduced the centrality of sources such as Cochrane. Nevertheless, the omission of these additional sources may have limited the comprehensiveness of the evidence identified and is acknowledged as a limitation when interpreting the findings.

3.4.2 Eligibility criteria

Studies were eligible for inclusion if they examined mental health outcomes during the perinatal period among women who had experienced forced migration across international borders and were identified as refugees or asylum seekers. Studies involving mixed migrant populations were included only when data for refugees or asylum seekers were reported separately, or when these groups were included as explicit comparators. Studies focusing exclusively on voluntary, economic, or labour migrants were excluded.

Quantitative, qualitative, and mixed-methods studies were eligible for inclusion. No restrictions were placed on study design because the purpose of the review was to map the available evidence rather than to answer a question limited to one methodological tradition. Studies published from 1951 onwards were included, corresponding to the adoption of the United Nations Convention Relating to the Status of Refugees (UNHCR, 2019). No geographical restrictions were applied. Studies involving internally displaced persons (IDPs) were excluded because their legal status and migration context differ in important ways from those of forced migrants who cross international borders.

3.4.3 Study selection

Records identified through the searches were first checked for duplicates, and duplicate records were removed. The study selection process involved screening the titles and abstracts

of the identified studies according to the eligibility criteria. Full-text articles for all studies that met the eligibility criteria were retrieved, and full-text screening was subsequently undertaken. To ensure accuracy and consistency in study selection, 10% of the full-text articles were randomly screened by a second reviewer. No disagreements were identified during this process. Record management and duplicate removal were conducted using EndNote 20.

3.4.4 Data charting

Data from included studies were extracted using a specially designed data extraction form developed for this review. To support consistent charting, the extraction form was created in Google Forms. Extracted information included study characteristics (authors, year of publication, country), participant characteristics (sample size and population description), study design and setting, mental health outcomes assessed, measurement tools used, and key findings related to prevalence and associated factors. The inclusion of key findings in the charting process allowed both quantitative and qualitative information relevant to the review questions to be captured in a structured way.

3.4.5 Data synthesis and analysis

Extracted data were synthesised using a combination of descriptive mapping and thematic analysis. Quantitative aspects of the included studies, such as study design, setting, sample characteristics, outcome measures, and prevalence estimates, were summarised descriptively in tables and narrative form. Qualitative findings, together with textual findings from mixed-methods and quantitative studies relating to associated factors and gaps in the literature, were then examined using an inductive thematic approach. This approach was used to allow patterns and themes to emerge from the included studies rather than applying a predetermined coding framework.

Through this process, findings were grouped into thematic categories based on the mental health outcomes studied and the risk and protective factors identified across the literature. The Social-Ecological Model (SEM) did not function as a formal coding framework for the review analysis. However, it informed the later interpretation of the findings within the wider

thesis by helping to situate identified influences across individual, social, and structural levels. Data synthesis was conducted manually using the charted data extracted through Google Forms. No specialist qualitative or quantitative analysis software was used for coding or synthesis.

No formal quality appraisal tool was applied. This decision was consistent with the purpose of the scoping review, which was to map the extent, nature, and characteristics of the available evidence base rather than to determine study eligibility on the basis of methodological quality or to produce pooled estimates of intervention effectiveness (Munn et al., 2018). Nevertheless, methodological limitations and recurring weaknesses across the included studies were considered critically in the discussion chapter.

3.4.6 Ethical considerations

As this scoping review involved the collection and synthesis of data from publicly available studies, formal ethical approval was not required.

3.5 Results

In total, 1,105 articles were identified through the search strategy, including 1,065 from the database search and 40 from other methods. After removing duplicates, 752 articles remained for title and abstract screening (712 from the database search and 40 from other methods). Of these, 81 articles underwent full-text assessment, and 16 papers met the eligibility criteria and were included in the review (**Figure 6**).

Of the included studies, twelve employed quantitative designs, including eight cross-sectional studies (Blackmore et al., 2022a; Blackmore et al., 2022b; Kaufmann et al., 2022; Rees et al., 2019; Mohammad et al., 2018; Nakash et al., 2016; Stewart et al., 2008; Akgor et al., 2022), and four cohort studies (Castaner et al., 2021; Fellmeth et al., 2021; Fellmeth et al., 2020; Dennis et al., 2016). One study used a qualitatively driven mixed-methods design with a single focus group (Ahmed et al., 2017), and three studies employed qualitative methods (Willey et al., 2020; Fellmeth et al., 2018; Nithianandan et al., 2016).

Studies were conducted across a range of host countries. Five studies were from Australia (Blackmore et al., 2022a; Blackmore et al., 2022b; Willey et al., 2020; Rees et al., 2019; Nithianandan et al., 2016), three studies were from Canada (Ahmed et al., 2017; Dennis et al., 2016; Stewart et al., 2008), and three studies took place along the Thai–Myanmar border (Fellmeth et al., 2021; Fellmeth et al., 2020; Fellmeth et al., 2018). Single studies were conducted in Turkey (Akgor et al., 2022), Denmark (Castaner et al., 2021), Germany (Kaufmann et al., 2022), Jordan (Mohammad et al., 2018), and Israel (Nakash et al., 2016). This geographical spread provided a diverse body of evidence across multiple host settings. All studies were published between 2008 and 2022.

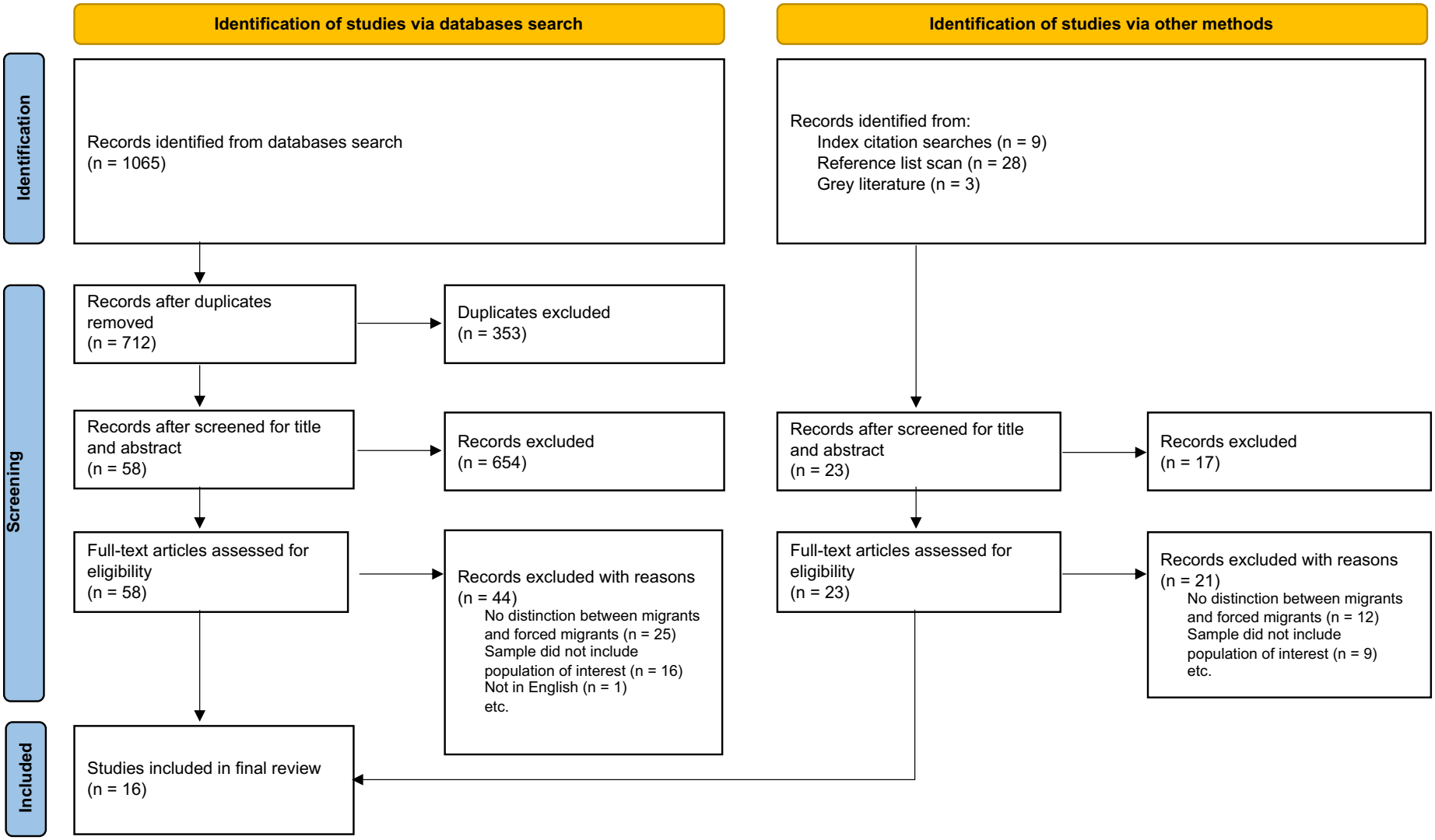


Figure 6 | PRISMA flow diagram illustrating the selection process of studies included in the Scoping Review.

In terms of focus, the included studies covered overlapping areas, with many addressing more than one aspect of mental health in forced migrant women. Ten studies assessed the prevalence of mental health disorders in forced migrant women (Blackmore et al., 2022a; Kaufmann et al., 2022; Akgor et al., 2022; Fellmeth et al., 2021; Rees et al., 2019; Mohammad et al., 2018; Ahmed et al., 2017; Nakash et al., 2016; Dennis et al., 2016; Stewart et al., 2008), while nine studies explored risk factors and predictors of mental health outcomes (Akgor et al., 2022; Blackmore et al., 2022b; Castaner et al., 2021; Fellmeth et al., 2021; Fellmeth et al., 2020; Rees et al., 2019; Fellmeth et al., 2018; Mohammad et al., 2018; Stewart et al., 2008). A further four studies assessed participants' experiences and perceived mental health challenges (Willey et al., 2020; Fellmeth et al., 2018; Ahmed et al., 2017; Nithianandan et al., 2016), offering valuable qualitative insights into how these women viewed their mental health and the care they received. Three studies examined challenges and barriers to accessing mental healthcare (Willey et al., 2020; Ahmed et al., 2017; Nithianandan et al., 2016), highlighting systematic and cultural obstacles, while another three studies evaluated the acceptability and sensitivity of different mental health screening tools used among forced migrants (Blackmore et al., 2022a; Blackmore et al., 2022b; Dennis et al., 2016). Finally, two studies specifically focused on assessing the mental health needs of this population (Kaufmann et al., 2022; Ahmed et al., 2017).

The mental health outcomes measured across the studies included depression (Blackmore et al., 2022a; Kaufmann et al., 2022; Akgor et al., 2022; Fellmeth et al., 2021; Fellmeth et al., 2020; Rees et al., 2019; Fellmeth et al., 2018; Mohammad et al., 2018; Ahmed et al., 2017; Dennis et al., 2016; Nakash et al., 2016; Nithianandan et al., 2016; Stewart et al., 2008), post-traumatic stress disorder (PTSD) (Blackmore et al., 2022a; Blackmore et al., 2022b; Kaufmann et al., 2022; Ahmed et al., 2017; Nithianandan et al., 2016), and anxiety (Blackmore et al., 2022a; Kaufmann et al., 2022; Ahmed et al., 2017; Nithianandan et al., 2016). In addition, some studies measured intimate partner violence (Ahmed et al., 2017), perinatal psychiatric episodes (Castaner et al., 2021), panic disorder, and substance abuse (Blackmore et al., 2022a).

The quantitative studies employed a variety of measurement tools to assess these mental health conditions, including the Edinburgh Postnatal Depression Scale (EPDS) (Blackmore et

al., 2022a; Mohammad et al., 2018; Ahmed et al., 2017; Dennis et al., 2016; Nakash et al., 2016; Stewart et al., 2008), Primary Care PTSD-Screen for DSM-IV (Kaufmann et al., 2022), the Patient Health Questionnaire-2 (Kaufmann et al., 2022), Harvard Trauma Questionnaire (Blackmore et al., 2022b), Generalised Anxiety Disorder Questionnaire-7 (GAD-7) (Kaufmann et al., 2022), and Beck Depression Inventory (BDI) (Akgor et al., 2022). In contrast, the qualitative studies primarily used focus groups, semi-structured interviews, and in-depth interviews to explore participants' experiences and perspectives in greater detail.

The characteristics of the included studies are summarised in **Table 13**.

The findings of this review are structured around three main themes:

1. The prevalence of mental health disorders.
2. Factors (risk or protective) influencing mental health outcomes.
3. Performance of screening and measurement tools.

Table 13 | Characteristics of the included studies.

First author, year	Country	Study design	Sample size	Participant characteristics	Outcome	Measurement tool(s)	Study objective(s)
Ahmed et al., 2017	Canada	Qualitatively driven mixed methods study	12	Refugee women only	Depression, anxiety, post-traumatic stress disorder (PTSD)	- Edinburgh Postnatal Depression Scale (EPDS) - PTSD screening instrument - Qualitative interviews	- To explore Syrian refugee women's perceptions of maternal depression. - To determine the social support needs and challenges faced by them. - To evaluate the barriers encountered when accessing mental health services. - To examine the prevalence of depression among Syrian refugee women.
Akgor et al., 2022	Turkey	Cross-sectional study	100	Refugee women versus host born women	Depression	- Beck Depression Inventory (BDI)	- To compare the psychiatric profiles and self-concept of Turkish pregnant adolescents with those of refugee pregnant adolescents. - To evaluate the factors associated with psychiatric problems among refugees.
Blackmore et al., 2022a	Australia	Cross-sectional study	52	Refugee women only	Depression, anxiety, PTSD	- EPDS (validated Dari version) - Diagnostic interview	- To examine the screening effectiveness of the EPDS. - To assess the EPDS's ability to identify depressive and anxiety disorders in refugee populations.
Blackmore et al., 2022b	Australia	Cross-sectional study	52	Refugee women only	PTSD, subthreshold PTSD	- Harvard Trauma Questionnaire (HTQ)	- To explore the symptomology and diagnoses of PTSD and subthreshold PTSD. - To assess the screening effectiveness of the HTQ.
Castaner et al., 2021	Denmark	Register-based cohort study	274,916	Refugee women and Danish women	Perinatal psychiatric episode	- Danish national health registers (psychiatric diagnoses)	- To compare psychiatric morbidity during the perinatal period between refugees and Danish-born women, including predictors of psychiatric morbidity.
Dennis et al., 2016	Canada	Prospective cohort study	1125	Refugees and asylum seeking women versus non-refugee immigrant	Depression	- EPDS	- To examine the prevalence and persistence of postpartum depression (PPD).

				and Canadian-born women			- To evaluate the sensitivity, specificity, and predictive accuracy of the EPDS.
Fellmeth et al., 2021	Thai–Myanmar Border	Prospective cohort study	451	Refugee women versus labour migrants	Depression	- Structured clinical interview for diagnosis (SCID) - Social support scale	- To assess the relationship between social support and perinatal depression.
Fellmeth et al., 2020	Thai–Myanmar Border	Prospective cohort study	567	Refugee women versus labour migrants	Depression	- EPDS - Social support measures	- To determine the prevalence of, and factors contributing to, perinatal depression.
Fellmeth et al., 2018	Thai–Myanmar Border	Qualitative	11	Refugee women versus labour migrants	Depression	- In-depth qualitative interviews	- To gain a deeper insight into the experiences of severe perinatal depression among refugee and labour migrant women.
Kaufmann et al., 2022	Germany	Cross-sectional study	120	Refugee women only	Depression, anxiety, PTSD	- EPDS - GAD-7 - PC-PTSD - PHQ-2	- To highlight the characteristics and needs of refugee women.
Mohammad et al., 2018	Jordan	Cross-sectional study	365	Refugee women only	Depression	- EPDS	- To investigate the prevalence of PPD and its associated risk factors.
Nakash et al., 2016	Israel	Cross-sectional study	38	Asylum-seeking women only	Depression	- EPDS	- To examine the association between PND and acculturation.
Nithianandan et al., 2016	Australia	Qualitative	37	Refugee women and health professionals	Depression, anxiety, PTSD	- Semi-structured qualitative interviews	- To examine the barriers and facilitators for implementing perinatal mental health screening.
Rees et al., 2019	Australia	Cross-sectional study	1335	Refugee women versus Australian-born women	Major depressive disorder	- Mini-International Neuropsychiatric Interview (MINI)	- To identify the psychosocial risk factors and prevalence of major depressive disorder (MDD).
Stewart et al., 2008	Canada	Cross-sectional study	341	Refugees and asylum seeking women versus immigrants and Canadian-born women	Depression	- EPDS	- To investigate the prevalence of PPD and PPD symptoms in newly arrived women.
Willey et al., 2020	Australia	Qualitative	22	Refugee and asylum seeking women versus migrant women	Depression, anxiety	- Qualitative interviews - Screening programme records	- To assess whether the screening programme improved detection of depression and anxiety symptoms compared to routine care.

3.5.1 The prevalence of mental health disorders

3.5.1.1 Depression

The prevalence of depression during the perinatal period was examined in ten studies (Blackmore et al., 2022a; Kaufmann et al., 2022; Akgor et al., 2022; Fellmeth et al., 2021; Rees et al., 2019; Mohammad et al., 2018; Ahmed et al., 2017; Nakash et al., 2016; Dennis et al., 2016; Stewart et al., 2008). Across these studies, the reported prevalence of perinatal depression among forced migrant women ranged from approximately 17% to over 80%. Although this range is wide, a consistent pattern nevertheless emerged: in all studies that included comparison groups, the prevalence of depression was higher among forced migrant women than among non-migrant women, suggesting heightened vulnerability of this population to perinatal mental health disorders. At the same time, the large variation in prevalence estimates appears to reflect not only contextual differences between populations and settings, but also important methodological differences, particularly in the measurement tools used and the cut-off thresholds applied.

This variation is particularly visible in the studies that used the Edinburgh Postnatal Depression Scale (EPDS). In the study conducted by Nakash et al. (2016), the participants were Eritrean asylum seekers in Israel, and postnatal depression was measured using the EPDS with a cut-off score of ≥13, indicating clinically significant postnatal depression. The findings revealed that 81.6% of participants scored above this threshold, with a mean score of 14.9 (*SD = 5.5*), suggesting extremely high levels of depression among this group of forced migrant women (Nakash et al., 2016). This was one of the highest rates of postnatal depression reported in the reviewed studies, and may reflect both severe contextual vulnerability and the specific characteristics of the study population.

Ahmed et al. (2017) also used the EPDS, but with a lower threshold of 10, in a qualitatively driven mixed-methods study of Syrian refugee women who had recently migrated to Canada. In that study, 58% of the participants screened positive for depression (Ahmed et al., 2017). The lower EPDS threshold used in this study may have contributed to the higher detection of depressive symptoms, but the finding still points to a substantial burden of psychological

distress. Similarly, Mohammad et al. (2018), in their study of Syrian refugee women in Jordan assessed at 6 to 8 weeks postpartum, used the EPDS with a threshold of 12 and found that 49.6% of participants scored above this cut-off, with a mean score of 12.6 (*SD = 3.3*) (Mohammad et al., 2018). Further supporting these findings, Blackmore et al. (2022a) reported that 25% of Afghan refugee women attending an Australian antenatal clinic screened positive for current depression, based on scoring greater than nine on a validated Dari version of the EPDS (Blackmore et al., 2022a). Although this prevalence estimate is lower than that reported in some other studies, it still indicates a substantial burden of depressive symptoms within this population.

A similar pattern was seen in studies that included explicit comparison groups. Stewart et al. (2008), for example, assessed postpartum depression among a diverse group of women in Canada, including refugees, asylum seekers, immigrants, and Canadian-born women, at 7 to 10 weeks postpartum. Using the EPDS with a threshold of 10, the study found that 25.7% of refugees and 31.1% of asylum seekers had scores indicative of postpartum depression, compared to only 8.1% of Canadian-born women. The study also suggested that inadequate prenatal care and ethnicity contributed to the greater vulnerability observed in these groups (Stewart et al., 2008). Similarly, Dennis et al. (2016) examined postpartum depression among refugees, asylum seekers, and Canadian-born women at both 1 and 16 weeks postpartum. Using the EPDS thresholds of >9 and >12, they found that prevalence remained consistently higher among refugees and asylum seekers than among Canadian-born women at both time points. For EPDS > 9, prevalence at 1 and 16 weeks postpartum was 26.6% and 18.2% for refugees, and 25.2% and 24.1% for asylum seekers, compared with 14.8% and 7.4% for Canadian-born women, respectively. For EPDS > 12, prevalence at 1 and 16 weeks postpartum was 10.5% and 11.2% for refugees, and 10.8% and 14.4% for asylum seekers, compared with 4.8% and 2.9% for Canadian-born women, respectively (Dennis et al., 2016). This study is particularly important because it not only demonstrated higher prevalence of depression among forced migrant women, but also indicated that depressive symptoms may persist beyond the immediate postpartum period.

Comparable results were also observed in studies where different measurement tools were used to identify depression. For instance, Akgor et al. (2022) used the Beck Depression

Inventory (BDI) to assess depression among pregnant refugee adolescents in Turkey (Akgor et al., 2022). The BDI is a 21-item scale ranging from 0 to 63 points, and a cut-off score of 17 was used to indicate depression. The study found that 28% of refugee women scored above this threshold, compared to 12% of Turkish-born women (Akgor et al., 2022). Rees et al. (2019), using the Mini-International Neuropsychiatric Interview (MINI) based on DSM-IV criteria, investigated major depressive disorder among refugees and Australian-born women and found that 32.5% of refugee women met the criteria for major depressive disorder, compared to 14.5% of Australian-born women (Rees et al., 2019). Likewise, Fellmeth et al. (2021), using the Structured Clinical Interview for DSM-IV (SCID) along the Thai–Myanmar border, reported that 47.3% of refugee women and 38.6% of migrant women were diagnosed with perinatal depression (Fellmeth et al., 2021). In contrast, Kaufmann et al. (2022) reported the lowest prevalence of depression among the studies reviewed, with 17.5% of refugee women in a German reception centre diagnosed with depression (Kaufmann et al., 2022).

Overall, the reviewed studies consistently indicate that depression is common among forced migrant women during the perinatal period, and where comparison groups were included, prevalence was generally higher than among non-migrant women. Although direct comparison across studies is complicated by heterogeneity in instruments, cut-off scores, and timing of assessment, the broader pattern is clear: forced migrant women appear to experience a markedly elevated burden of perinatal depression. The very wide range of prevalence estimates should therefore be interpreted as reflecting both real contextual variation and methodological inconsistency across the evidence base.

3.5.1.2 Anxiety

The prevalence of anxiety during the perinatal period was examined in three studies (Kaufmann et al., 2022; Blackmore et al., 2022a; Ahmed et al., 2017). As with depression, interpretation of the prevalence figures requires caution because the studies used different measurement tools and different thresholds for identifying anxiety. Two studies used an EPDS subscale to assess anxiety symptoms (Blackmore et al., 2022a; Ahmed et al., 2017), while the remaining study used the Generalised Anxiety Disorder-7 (GAD-7) (Kaufmann et al., 2022), a

widely recognised screening tool for anxiety disorders. Across these studies, the reported prevalence of anxiety among forced migrant women ranged from 15% to 50%.

In Blackmore et al. (2022a), an EPDS subscale score of greater than four was used to indicate anxiety. Using this threshold, 21% of Afghan refugee women attending a public antenatal clinic in Australia were identified as experiencing current anxiety disorders, with a mean score of 5.82 (*SD = 0.75*) (Blackmore et al., 2022a). In contrast, Ahmed et al. (2017), in their mixed-methods study of Syrian refugee women in Canada, used an EPDS subscale score of greater than three and found that 50% of participants had anxiety symptoms, with a mean score of 3.6 (*SD = 2.5*) (Ahmed et al., 2017). The lower threshold used in Ahmed et al. (2017) likely contributed to the higher prevalence reported in that study, although it also indicates considerable psychological distress in this recently resettled population.

A lower prevalence was reported by Kaufmann et al. (2022), who assessed anxiety using the GAD-7 in a German reception centre. In that study, a score of 10 or higher was used to indicate anxiety, and 15% of participants met this threshold (Kaufmann et al., 2022). Similar to the variation observed in depression prevalence, differences in anxiety prevalence across studies may therefore partly reflect differences in measurement approach rather than differences in underlying distress alone.

Nevertheless, despite variation in reported prevalence, all three studies suggest that anxiety is a significant problem among forced migrant women during the perinatal period. When viewed alongside the broader literature, in which anxiety during the perinatal period among women generally has been estimated at around 8.5% to 10.5% (Buist et al., 2011; Adewuya et al., 2006; Sutter-Dallay et al., 2004), the reviewed studies suggest that forced migrant women may experience disproportionately high levels of anxiety symptoms.

3.5.1.3 Post-traumatic stress disorder

Post-traumatic stress disorder (PTSD) was examined in three studies included in the review (Kaufmann et al., 2022; Blackmore et al., 2022b; Ahmed et al., 2017). Across these studies, PTSD emerged as an important component of the mental health burden experienced by

forced migrant women, reflecting trauma exposure before, during, and after migration. However, as with depression and anxiety, direct comparisons across studies are complicated by differences in tools and thresholds.

Two of the studies used the Primary Care PTSD (PC-PTSD) screening tool (Kaufmann et al., 2022; Ahmed et al., 2017), while one study used the Harvard Trauma Questionnaire (HTQ) to assess PTSD symptoms (Blackmore et al., 2022b). The PC-PTSD is a widely used four-item screening instrument designed to assess symptoms of PTSD. It evaluates a respondent's exposure to traumatic events and their psychological impact, with a threshold score of three or higher out of four indicating a positive PTSD screen (Cameron and Gusman, 2003). By contrast, the HTQ is a more detailed cross-cultural tool that assesses trauma exposure and associated symptoms, and has been widely validated in refugee populations, making it suitable for assessing trauma in cross-cultural contexts (Mollica et al., 1992). Across the studies, the reported prevalence of PTSD among forced migrant women ranged from approximately 6% to 36%.

Kaufmann et al. (2022) reported the highest prevalence of PTSD, with 36.1% of refugee women in a German reception centre diagnosed with PTSD (Kaufmann et al., 2022). Similarly, in the study by Ahmed et al. (2017), two of the 12 participants (17%) scored three or higher on the PC-PTSD scale, indicating a positive screen for PTSD (Ahmed et al., 2017). In contrast, Blackmore et al. (2022b), using the HTQ among Afghan refugee women in Australia, reported a lower prevalence of 5.8%. However, the study also identified a considerable proportion of women with subthreshold PTSD symptoms, showing that many women still faced substantial psychological trauma despite not meeting the full diagnostic criteria (Blackmore et al., 2022b).

Taken together, these studies indicate that PTSD is a significant concern among forced migrant women during the perinatal period, although reported prevalence varies substantially across studies and settings. The lower prevalence observed in some studies should therefore not be interpreted too narrowly, especially where subthreshold PTSD symptoms were also common. Overall, the reviewed evidence suggests that trauma-related psychological distress forms an important part of the wider perinatal mental health burden experienced by forced migrant women.

3.5.2 Factors influencing mental health outcomes

Across the included studies, several factors were reported to influence perinatal mental health outcomes among forced migrant women. Three key themes emerged: social support, exposure to traumatic events including violence and abuse, and stigma and barriers to accessing mental health services. These factors reflected experiences occurring before, during, and after migration, as well as during pregnancy and the postpartum period.

3.5.2.1 Social support

The importance of social support as a protective factor for the perinatal mental health of forced migrant women was explored in seven quantitative studies (Akgor et al., 2022; Fellmeth et al., 2021; Castaner et al., 2021; Fellmeth et al., 2020; Rees et al., 2019; Mohammad et al., 2018; Stewart et al., 2008). Across these studies, social support was consistently identified as beneficial, acting as a buffer against perinatal mental disorders. Whether assessed as emotional, practical, partner, or perceived support, the studies generally suggested that women with lower levels of support were more likely to experience perinatal depression and other mental health outcomes. This pattern was also reinforced by two qualitative studies, which added depth by illustrating the emotional meaning and practical importance of support during pregnancy and the postpartum period (Ahmed et al., 2017; Nithianandan et al., 2016).

The protective role of social support was particularly evident in the studies by Fellmeth et al. In the prospective cohort study by Fellmeth et al. (2021), three different dimensions of social support were measured: received social support, perceived sufficiency of support, and partner support (Fellmeth et al., 2021). Chen's 'Social Support in the Postpartum Period Scale' was used to assess received support, capturing practical, emotional, and informational support (Chen et al., 2011). Perceived sufficiency of support and partner support were each assessed using a single question: "*Do you feel you have enough support?*" and "*Does your husband support, care for and understand you?*", respectively. The findings revealed that only perceived support was a statistically significant predictor of perinatal depression, with refugee women reporting insufficient support having nearly twice the odds of developing perinatal depression (OR = 1.89, 95% CI 1.10-3.24). Neither received support nor partner support

reached statistical significance in this study (Fellmeth et al., 2021). This suggests that it may not be the objective quantity of support alone that matters most, but rather whether women feel sufficiently supported in their circumstances.

A similar finding was reported in the earlier study by Fellmeth et al. (2020), in which insufficient perceived social support was also a strong predictor of perinatal depression (OR = 2.07, 95% CI = 1.14-3.73). Importantly, this association remained evident even after controlling for other variables such as trauma, previous depression, maternal age, and migration status (Fellmeth et al., 2020). Together, these two studies point to the particular importance of women's perceptions of support, suggesting that the perceived adequacy of support may be more influential for mental health than the simple availability of support.

This pattern was also reflected in other quantitative studies, although measured differently. In Mohammad et al. (2018), the Maternity Social Support Scale (MSSS) was used to assess support from partners, family, and friends among Syrian refugee women in Jordan (Mohammad et al., 2018). The study found that lower levels of social support were statistically significantly correlated with higher EPDS scores ($r = 0.44$, p-value < 0.01), again suggesting that inadequate support is closely associated with poorer perinatal mental health (Mohammad et al., 2018). Similarly, Rees et al. (2019) measured social support in terms of the number of reliable persons in whom a woman could confide if she faced serious problems. Refugee women were significantly more likely than host-country-born women to report having fewer supportive individuals, and having fewer than two supportive individuals was statistically significantly associated with major depressive disorder (aOR = 1.62, 95% CI 1.18-2.23) (Rees et al., 2019).

Other studies did not always assess the direct association between social support and mental health outcomes, but still provided evidence of marked social disadvantage among forced migrant women. Stewart et al. (2008), for example, assessed social support using the Personal Resource Questionnaire (PRQ), a 25-item measure of personal, emotional, and instrumental support from family, friends, relatives, groups, and systems (Stewart et al., 2008). Refugees and asylum seekers had significantly lower mean support scores compared to Canadian-born women. Refugees had a mean score of 135.43 (*SD = 22.78*), asylum seekers 133.18 (*SD =*

23.62) and Canadian-born women 153.57 (*SD = 15.58*), with the difference being statistically significant ($p < 0.001$) (Stewart et al., 2008). Although the study did not directly test the relationship between social support and mental health outcomes, it nevertheless demonstrated that forced migrant women were socially more disadvantaged than host populations in ways likely to be relevant for mental health.

The remaining two quantitative studies specifically highlighted the role of partner support. Castaner et al. (2021) found that refugee women without a partner were 1.5 times more likely to develop a perinatal psychiatric episode (PPE) than women with a partner (95% CI 1.36-1.65). Similarly, Akgor et al. (2022) reported that living without a partner was a statistically significant predictor of higher depression scores in both refugee women ($p = 0.023$) and Turkish-born women ($p = 0.001$) (Akgor et al., 2022). These findings suggest that partner presence, or the absence of it, may be particularly important during the perinatal period, although it is also likely to interact with broader social and economic circumstances.

The qualitative studies provide important context for interpreting these quantitative findings. In Ahmed et al. (2017), Syrian refugee women in Canada described the profound emotional toll of being separated from their families, identifying this as a major contributor to depression. One participant stated:

"If you ask any Syrian person why a woman is depressed, they would say "being away from her family, alienation."" (Ahmed et al., 2017, p. 6).

Women also emphasised the importance of family presence during childbirth and the postpartum period:

"You feel that you aren't alone and you will feel that someone is standing beside you…Like when you are going to give birth, you really need your mother, your aunt or somebody." (Ahmed et al., 2017, p. 7).

Participants further described reconnection with family as the most meaningful strategy for alleviating depression:

"It should be like we can go and visit them or the family can come and visit us. This way we would not feel like a bird in a cage or imprisoned… This is the most important and critical issue here. This is what can cause depression." (Ahmed et al., 2017, p. 7).

Similarly, Nithianandan et al. (2016) found that community representatives described family support as a key protective factor, while lack of social support was seen as a major contributor to worsening mental health among refugee women (Nithianandan et al., 2016). These qualitative accounts reinforce the quantitative evidence by showing that social support is not only a measurable correlate, but also an emotionally significant and practically important resource.

Overall, the reviewed evidence strongly suggests that social support, both perceived and received, is central to the perinatal mental health of forced migrant women. Women who feel emotionally and practically supported by family, friends, or partners appear less likely to experience poor mental health, whereas women who feel isolated or unsupported appear more vulnerable. The combination of quantitative data and qualitative insights offers a comprehensive understanding of the importance of promoting supportive networks for this vulnerable population. However, the subjective perception of support, rather than the measurable amount of support received, often emerged as the more critical factor in determining mental health outcomes.

3.5.2.2 Traumatic events including violence and abuse

Four quantitative studies examined the association between traumatic events, including violence and abuse, and the perinatal mental health of forced migrant women (Blackmore et al., 2022b; Fellmeth et al., 2021; Fellmeth et al., 2020; Rees et al., 2019). Across these studies, traumatic experiences consistently emerged as significant risk factors for poor perinatal mental health. One qualitative study also explored lived experiences of violence and abuse during the perinatal period, helping to contextualise how such experiences affect well-being (Fellmeth et al., 2018).

The study by Blackmore et al. (2022) assessed traumatic events using the trauma module of the Structured Clinical Interview for DSM-5 Research Version (SCID-DSM-5-RV), a semi-structured interview designed to identify current and previous trauma-related mental health disorders. Nearly one-third of participants (approximately 30%) met the criteria for a current trauma or stressor-related disorder. Furthermore, women with PTSD had significantly higher Harvard Trauma Questionnaire (HTQ) scores (mean = 2.50, *SD = 0.53*) than women with no trauma or stressor-related disorder (mean = 1.45, *SD = 0.33*) (Blackmore et al., 2022b). Although the study did not quantify the statistical significance of this difference, the elevated HTQ scores among women with trauma-related disorders suggest a likely association between trauma exposure and poorer mental health.

A similar pattern was observed in the studies by Fellmeth et al. In Fellmeth et al. (2021), traumatic events and interpersonal violence (IPV) were assessed using a modified version of the Trauma History Screen and a single direct question asking: "*Does a partner, or anyone at home, hurt, hit, or threaten you?*". The study found that women who had experienced traumatic events were significantly more likely to develop perinatal depression. Specifically, among refugee women who had experienced traumatic events, the odds of developing depression were 1.63 times higher (aOR = 1.63, 95% CI 1.23-2.17) compared to those who had not experienced traumatic events (Fellmeth et al., 2021). Earlier work by Fellmeth et al. (2020) also found that participants with a trauma history were more than twice as likely to develop perinatal depression (OR = 2.17, 95% CI 1.38-3.41) (Fellmeth et al., 2020).

Rees et al. (2019) further reinforced this pattern through a more detailed assessment of both traumatic events and intimate partner violence. Traumatic events were measured using the World Mental Health Survey, which grouped participants by number of traumatic events experienced (none, one, two to three, and four or more), while IPV was assessed using a WHO measure covering physical, psychological, and sexual violence perpetrated by an intimate partner over the previous 12 months. Refugee women were statistically significantly more likely than Australian-born women to report both traumatic events and IPV. Specifically, 29.8% of refugee women had experienced two or more traumatic events compared with 19.0% of Australian-born women ($p < 0.001$), and 42.9% of refugee women reported IPV compared with 20.5% of Australian-born women ($p < 0.001$). Further regression analysis showed that major

depressive disorder (MDD) was statistically significantly associated with experiencing two or more traumatic events (aOR = 2.13, 95% CI 1.47-3.08), severe psychological IPV (aOR = 1.62, 95% CI 1.18-2.23), and physical IPV (aOR = 4.64, 95% CI 2.78-7.74) (Rees et al., 2019). This is particularly important because it suggests that not only trauma history, but also ongoing violence, may contribute substantially to mental health risk.

The qualitative study by Fellmeth et al. (2018) provides important insight into what these quantitative associations may mean in lived experience. Nearly all women interviewed reported some form of IPV, including verbal, physical, and sexual abuse (Fellmeth et al., 2018, p. 5). One participant described the emotional impact of verbal abuse:

"[My husband] says that I am not a good mother and I am hurt by that. When he says that, it hurts me so much that I would cry." (Fellmeth et al., 2018, p. 5).

Several women also reported experiences of physical violence:

"He beat me up and squeezed my neck. That time, my eldest daughter ran […] to call for help. After the fighting ended, I was not feeling well for four days so I went to the clinic." (Fellmeth et al., 2018, p. 6).

Although sexual violence was less frequently reported, it was still present and significant. One participant described her experience:

"I was 18 or 19 years old, He was kissing and hugging me in front of people and I was afraid that people will gossip about me so I had to marry him." (Fellmeth et al., 2018, p. 7).

Taken together, the studies reviewed consistently demonstrate that traumatic events, including interpersonal violence, are major risk factors for poor perinatal mental health among forced migrant women. The findings also indicate that trauma should not be understood only as something that occurred prior to migration. For many women, violence and abuse continue into the resettlement period and may interact with earlier trauma to compound mental health vulnerability during pregnancy and after childbirth.

3.5.2.3 Stigma and barriers to accessing mental health services

Stigma surrounding mental health and fear of social judgement emerged as significant barriers to seeking mental health support in three qualitative studies (Willey et al., 2020; Ahmed et al., 2017; Nithianandan et al., 2016). Across these studies, women expressed concerns about being labelled *"crazy",* being judged by family or community members, and losing dignity or respect if they disclosed mental health difficulties or sought professional help. The studies also showed that these barriers extended beyond stigma alone and included concerns about privacy, confidentiality, gender dynamics, and the practical difficulties of accessing culturally acceptable care. Taken together, the findings suggest that access to mental health services for forced migrant women during the perinatal period is shaped not only by service availability, but also by whether those services are experienced as safe, acceptable, and trustworthy.

In Ahmed et al. (2017), stigma was one of the most frequently mentioned barriers to accessing mental health services. Participants reported that the fear of being judged by others or labelled as mentally unstable deterred them from seeking professional help (Ahmed et al., 2017). One woman explained her hesitation to visit a psychiatrist:

"I might have depression… If I went to a psychiatrist, they would say that she went crazy. So, society would think that she is a psychiatric patient and is getting treatment." (Ahmed et al., 2017, p. 7).

The same study also highlighted the role of husbands and family dynamics in shaping help-seeking. Some women reported that their husbands might prevent them from disclosing mental health problems because of concerns about privacy, family reputation, or social judgement. As one participant explained:

"For every woman, her husband's way of thinking is different… Some men, they don't like that their wives to speak, even to her neighbors. It's a form of privacy." (Ahmed et al., 2017, p. 7).

At the same time, Ahmed et al. (2017) also showed that women were not uniformly passive in the face of stigma. Some women demonstrated resilience and willingness to seek help, even if it meant facing societal judgement. One participant said:

"If I have depression, I will not have a problem going to a psychiatrist and seeking help. I'm sure that they will speak about me and say that I'm crazy but this doesn't matter to me." (Ahmed et al., 2017, p. 7).

Similar findings were reported by Willey et al. (2020), who found that although women were often open to being referred for mental health support, the stigma associated with receiving such services often prevented them from following through. In this study, women described diagnosis and treatment for depression or anxiety as potentially threatening to dignity and self-worth, because of the way others in the community might perceive them. As one participant explained:

"Most of them feel embarrassed when they've been told like, "You have depression or anxiety, and you need to see a psychologist or counsellor." They avoid going because they think … it affect their dignity, …, that other people look down at them, that you are sick, or you have emotional problem, or psychological problem …, most of women that I know … you can tell that they are depressed, but themselves, they don't accept it." (Willey et al., 2020, p. 434).

In addition to stigma within families and communities, barriers were also identified within service encounters themselves, particularly where interpreters were involved. Nithianandan et al. (2016) found that women were often hesitant to discuss their mental health problems openly in the presence of interpreters because of fears that private information might be disclosed within their communities. At the same time, female interpreters and female healthcare professionals were generally preferred and seen as more trustworthy. One participant explained:

"With a female interpreter, we feel safe and we feel comfortable so everything that we wanted to express…we can say it easily…" (Nithianandan et al., 2016, p. 6).

Confidentiality concerns around interpreters were also strongly evident in Ahmed et al. (2017). Women in that study described it as totally unacceptable to disclose their personal stories to a healthcare professional in the presence of an interpreter because of the fear that the information might later circulate within the community:

"If you speak with a psychiatrist, you would speak normally, but if there is an interpreter as a mediator, and this person might speak about what you said, and now like you have told your story to this and may be this mediator will tell everybody in Canada." (Ahmed et al., 2017, p. 8).

Overall, the reviewed studies suggest that stigma and barriers to accessing mental health services are closely intertwined for forced migrant women during the perinatal period. Fear of social judgement, concerns about privacy, family control over disclosure, and lack of trust in interpreters may all discourage women from seeking support even where services are technically available. The findings therefore indicate that improving access requires more than service provision alone; it also requires culturally sensitive, confidential, and trusted pathways to care that reduce the social risks women may associate with help-seeking.

3.5.3 Performance of screening and measurement tools

Only three of the 16 studies included in this review evaluated the screening performance of the measurement tools used to assess mental health outcomes (Blackmore et al., 2022a; Blackmore et al., 2022b; Dennis et al., 2016). These studies focused on the accuracy of the Edinburgh Postnatal Depression Scale (EPDS) in detecting depression and anxiety, and the Harvard Trauma Questionnaire (HTQ) in identifying PTSD among forced migrant women. The findings suggest that these tools can be useful in this population, but that their performance varies depending on the cut-off score applied, the outcome being assessed, and whether the tool is being used for concurrent case identification or longer-term prediction.

In the study by Blackmore et al. (2022a), a validated Dari-translated version of the EPDS was used to identify depression and anxiety among 52 Afghan refugee women attending a public antenatal clinic in Australia. To establish a reference diagnosis, all participants were assessed by a trained psychologist using the Structured Clinical Interview for DSM-5 Research Version (SCID-DSM-5-RV). The study measured both the sensitivity (the ability to accurately identify those with the disorder) and specificity (the ability to accurately identify those without the disorder) of different EPDS cut-off scores. For depression, a cut-off score of ≥9 was found to provide the best balance, with a sensitivity of 1.00 (95% CI 0.79-1.00) and a specificity of 0.89

(95% CI 0.74-0.97) (Blackmore et al., 2022a). This indicates that all women who had depression were correctly identified, although some women without depression were incorrectly screened positive. As the cut-off score increased, sensitivity declined while specificity improved. A cut-off score of ≥13 resulted in a sensitivity of 0.56 (95% CI 0.56-0.80) and specificity of 0.97 (95% CI 0.85-1.00) (Blackmore et al., 2022a). This suggests that higher thresholds reduced false positives, but at the cost of missing a substantial proportion of true cases.

A similar pattern was observed for anxiety in the same study. Lower EPDS anxiety subscale cut-off scores resulted in more false positives, whereas slightly higher thresholds improved specificity without reducing sensitivity. Specifically, cut-off scores of ≥3 and ≥4 both produced a sensitivity of 1.00 (95% CI 0.72-1.00), with specificities of 0.61 (95% CI 0.45-0.76) and 0.71 (95% CI 0.54-0.84), respectively. An optimal balance appeared to be achieved at a cut-off score of ≥5, where sensitivity remained 1.00 and specificity improved to 0.80 (Blackmore et al., 2022a). These findings suggest that, in this sample, lower cut-offs increased case detection but also increased the likelihood of false positives, whereas a modestly higher threshold improved discrimination.

Dennis et al. (2016) examined a somewhat different question, focusing not on concurrent diagnostic accuracy but on the predictive value of the EPDS for later postpartum depression among refugee and asylum-seeking women. Specifically, the study assessed whether an EPDS score at 1-week postpartum could accurately predict depression at 16 weeks postpartum. The findings indicated important limitations in the EPDS's predictive capacity over time in these populations. Using a cut-off score of >9 at 1-week postpartum, sensitivity for depression at 16 weeks postpartum was 0.61 among refugees and 0.47 among asylum seekers, with corresponding specificities of 0.81 and 0.82, respectively. This meant that the 1-week EPDS failed to identify postpartum depression in six refugees (37.5%) and 24 asylum seekers (45.3%) who had depression at 16 weeks postpartum. When a higher cut-off score of >12 was used, sensitivity decreased markedly to 0.13 among refugees and 0.30 among asylum seekers, while specificity rose to 0.90 and 0.92, respectively. As a result, 14 refugees (87.5%) and 37 asylum seekers (69.8%) with depression at 16 weeks postpartum were screened negative at 1 week postpartum (Dennis et al., 2016). These findings suggest that although the EPDS may be useful

as a cross-sectional screening tool, its ability to predict longer-term postpartum depression in forced migrant populations is more limited.

In a separate study, Blackmore et al. (2022b) assessed the screening performance of the Harvard Trauma Questionnaire (HTQ) for PTSD in the same sample of 52 Afghan refugee women, again using SCID-DSM-5-RV to establish diagnostic status. At a cut-off score of ≥2, the HTQ demonstrated high sensitivity (1.00, 95% CI 0.30-1.00), indicating that all women with PTSD were correctly identified. However, specificity was low (0.67, 95% CI 0.52-0.80), indicating that a considerable number of women without PTSD were incorrectly classified as positive. When the cut-off score was increased to ≥2.25, specificity increased to 0.76 while sensitivity remained unchanged. At the recommended cut-off of ≥2.5, specificity increased further to 1.00, meaning that no false positives were identified, but sensitivity dropped to 0.67, indicating that some true PTSD cases were missed (Blackmore et al., 2022b). As with the EPDS, the findings suggest that the performance of the HTQ depended heavily on the selected threshold and the trade-off between maximising case detection and reducing false positives.

Overall, these studies highlight the importance of selecting appropriate cut-off scores and screening tools that are appropriate to the context and purpose of assessment in forced migrant women. In populations facing high levels of vulnerability to mental health disorders such as depression, anxiety, and PTSD, an overly conservative threshold may miss women in need of support, whereas a very low threshold may over-identify distress. The reviewed evidence therefore suggests that both the EPDS and HTQ can be valuable tools, but that their usefulness depends heavily on how they are applied. At the same time, the evidence base remains limited, as only three studies examined screening performance and two of these came from the same research group and population context. The findings should therefore be interpreted cautiously, while still indicating the need for further validation work in more diverse forced migrant populations.

3.6 Discussion

This scoping review aimed to explore the prevalence of perinatal mental health disorders among forced migrant women, identify the factors associated with these outcomes, and map the main gaps in the available evidence base. Overall, the review suggests that forced migrant women experience a substantial burden of perinatal mental health difficulties, particularly depression, anxiety, and PTSD. Across the included studies, rates of these conditions were consistently elevated, and where comparison groups were included, forced migrant women generally appeared more vulnerable than non-migrant women. At the same time, the evidence base was heterogeneous in terms of study design, host setting, mental health measure, and cut-off score. The findings should therefore be interpreted less as a precise estimate of prevalence and more as a consistent signal that forced migrant women experience greater perinatal mental health vulnerability.

This pattern is consistent with the wider perinatal mental health literature, which shows that depression and trauma-related symptoms occur across perinatal populations, but are generally reported at lower levels than those observed among migrant women and appear to be particularly elevated among women affected by forced migration (Al-Abri et al., 2023; Stevenson et al., 2023; Grekin and O'Hara, 2014). The broader literature suggests that prevalence estimates for perinatal depression in general populations are lower than many of those identified in this review (Woody et al., 2017; Gavin et al., 2005), and meta-analytic evidence on postpartum PTSD similarly suggests lower prevalence in community samples than in at-risk samples (Grekin and O'Hara, 2014). Viewed in this context, the findings of the present review suggest that forced migrant women may face a layering of risk, in which the mental health demands of pregnancy and the postpartum period intersect with prior trauma, displacement, social disruption, and structural insecurity. This is important because it indicates that perinatal mental health problems in this population should not be understood simply as an extension of general maternity-related vulnerability, but as the product of compounded disadvantage across the perinatal and migration contexts.

One of the clearest patterns in the review was the association between traumatic events, violence, and poor perinatal mental health outcomes. Forced migration often exposes women to pre-migration trauma, violence during transit, and post-migration stressors, all of which may compound the risk of mental health issues (Gushulak and MacPherson, 2000). Across the included studies, exposure to traumatic events and interpersonal violence was consistently linked to poorer perinatal mental health, especially depression and PTSD. This pattern is also consistent with the broader literature, in which trauma history, abuse, and intimate partner violence are well-established correlates of perinatal depression, anxiety, and PTSD (Biaggi et al., 2016; Choi and Sikkema, 2016; Grekin and O'Hara, 2014; Howard et al., 2013). What appears distinctive in the case of forced migrant women is not simply the presence of trauma, but its cumulative and multi-stage nature. Trauma may occur before migration, during transit, and again after arrival through continuing uncertainty, unsafe living conditions, or ongoing interpersonal violence (Iliadou et al., 2019). Addressing the traumatic histories of forced migrant women, particularly their exposure to violence and abuse, is crucial in mental health interventions. Broader emerging evidence suggests that trauma-informed care, which acknowledges the impact of such experiences, may improve the accessibility, responsiveness, and acceptability of mental health services for forced migrant women (Jolof et al., 2024a; Burgund Isakov and Markovic, 2024; Jolof et al., 2024b).

The findings relating to stigma and barriers to care also deserve careful attention. Across the qualitative studies, women described fear of being judged, labelled, or socially diminished if they disclosed psychological distress or sought professional help. Concerns about confidentiality, especially where interpreters were involved, further complicated access to care. These findings align with broader work on migrant women's mental health, which has shown that stigma, lack of information, language barriers, and concerns about cultural misunderstanding can all reduce help-seeking and engagement with services (Krystallidou et al., 2024; Nyikavaranda et al., 2023; Webb et al., 2023; Firth et al., 2022; Markey et al., 2022). However, the present review suggests that these barriers may take on particular forms for forced migrant women in the perinatal period. Small co-ethnic communities, dependence on interpreters, and fears about being judged as a mother may intensify reluctance to disclose distress. This means that the challenge is not simply one of increasing service availability.

Rather, services must also be experienced as confidential, culturally safe, and trustworthy if women are to engage with them (Nyikavaranda et al., 2023).

Social support emerged as the main protective factor identified across the literature. Women who felt emotionally and practically supported appeared less likely to report poor mental health, while women who felt isolated or disconnected appeared more vulnerable. This is consistent with the wider perinatal mental health literature, in which social support has been repeatedly associated with lower risk of antenatal and postnatal depression (Ekpenyong and Munshitha, 2023; Bedaso et al., 2021; Collins et al., 1993). Yet the findings of this review also suggest a more nuanced point: perceived support often appeared more important than the actual amount of support received. This distinction is especially relevant in forced migration contexts. Support may be formally present but emotionally insufficient, particularly where women are separated from close family, living in unfamiliar settings, or unable to access the relationships they would most value during pregnancy and after birth. In this sense, social support in forced migrant contexts cannot be reduced to the number of available contacts alone. Its protective value appears to depend on whether those relationships provide emotional reassurance, practical help, and a sense of belonging during a period of major transition and vulnerability.

Viewed through the Social-Ecological Model (SEM), the findings suggest that perinatal mental health among forced migrant women is shaped by interacting influences across multiple levels. Ecological models conceptualise health as the product of interacting personal and environmental influences rather than isolated risk factors alone, and the SEM specifically highlights the interplay between individual, social, and structural factors (McLeroy et al., 1988; Bronfenbrenner, 1979). At the individual level (micro-level), the reviewed studies pointed to trauma histories, pregnancy-related vulnerability, depressive and PTSD symptoms, and women's own appraisal of whether available support felt sufficient. At the social level (meso-level), family separation, intimate partner violence, stigma, and the presence or absence of emotional and practical support shaped women's immediate relational environments. At the structural level (macro-level), language barriers, dependence on interpreters, concerns about confidentiality within care encounters, and the accessibility of culturally acceptable maternity and mental healthcare appeared to shape whether support could be sought, trusted, and

used. This kind of multilevel reading is consistent with wider refugee mental health scholarship, which argues that mental health is shaped not only by pre-migration trauma but also by ongoing post-migration stressors and the broader conditions of displacement and resettlement (Gleeson et al., 2020; Silove et al., 2017).

Interpreting the findings through the SEM also helps clarify why narrowly individualised responses are unlikely to be sufficient. Meta-review evidence on access to perinatal mental healthcare shows that barriers and facilitators operate across multiple levels, including individual beliefs and knowledge, interpersonal relationships, healthcare professionals, organisational systems, and wider political and societal conditions (Webb et al., 2023). For this thesis, the value of the SEM is therefore not that it replaced inductive analysis in this chapter, but that it helps situate the review findings within the broader multilevel framework used across the thesis as a whole. On this reading, trauma-informed clinical care remains essential, but it is unlikely to be sufficient without parallel attention to family and partner relationships, community support, trust in services, language access, confidentiality, continuity of care, and the structural conditions of settlement and exclusion (Webb et al., 2023).

The review also highlighted important methodological issues around how mental health outcomes were measured. Most studies relied on screening tools rather than diagnostic interviews, and only a small number examined the performance of these tools in forced migrant populations. While screening tools are useful for identifying potential cases of mental health disorders, they may overestimate the true prevalence of these disorders (Woody et al., 2017). This is important because variation in measurement tools and cut-off scores likely contributed to the wide range of prevalence estimates reported across the studies in this review. More broadly, this concern is also reflected in the wider literature, where screening-based estimates of perinatal depression are often higher than estimates derived from diagnostic interviews (Levis et al., 2020; Levis et al., 2019; Woody et al., 2017). The studies in this review, therefore, do not only point to a burden of poor mental health; they also expose an important methodological gap, namely the limited validation of commonly used screening tools in diverse forced migrant perinatal populations.

A more critical reading of the included literature also highlights broader concerns about study quality and the maturity and inferential strength of the evidence base. Although no formal quality appraisal tool was applied in this scoping review, the pattern of included studies suggests that research on perinatal mental health among forced migrant women remains at a relatively early and methodologically uneven stage. Most of the quantitative studies were cross-sectional, which makes them useful for describing the burden and identifying possible associations, but limited in establishing temporal relationships or causal direction because exposures and outcomes are measured at the same time (Pérez-Guerrero et al., 2024). This is especially important in relation to variables such as social support, trauma exposure, and help-seeking, which may both shape and be shaped by mental health status. As a result, many of the associations identified in the literature should be interpreted as suggestive rather than causal.

The evidence base is also constrained by limited breadth and representativeness. Several studies were based on relatively small samples or single clinics and service settings, which makes it more difficult to judge how far the findings can be generalised across the highly diverse circumstances of forced migrant women. A central principle of observational research is that external validity depends on how well the study sample reflects the wider population of interest, and this is particularly challenging in refugee research, where educational background, trauma history, language, and response styles may vary substantially across groups (Rudolph et al., 2023; Faber and Fonseca, 2014). In addition, many studies relied heavily on self-reported symptoms collected through screening tools rather than diagnostic interviews. Reviews of refugee mental health assessment have noted that screening in refugee women is complex, that only a limited range of tools has been adequately evaluated, and that cultural factors are not always well accounted for in instrument development (Donnelly and Leavey, 2022). More broadly, research on cultural idioms of distress suggests that standardised scales can miss or misclassify distress when measures are not carefully adapted to local meanings, language, and context (Cork et al., 2019). Taken together, these limitations mean that the existing literature is valuable for signalling the burden of perinatal mental health challenges and identifying likely correlates, but it is not yet strong enough to support confident conclusions about causal pathways, precise prevalence, or which forms of support and intervention are most effective.

There were also notable gaps in what the literature covered. Most studies focused on depression, with far fewer examining anxiety, PTSD, or other mental health outcomes. No intervention studies were identified, meaning that the literature remains much stronger at documenting need than at evaluating what improves outcomes. In addition, the majority of studies were conducted in high-income countries, despite the fact that a large proportion of forced migrants are hosted in low- and middle-income countries (UNHCR, 2025c). This raises an important question about transferability. The stressors, care pathways, and support systems affecting forced migrant women in low- and middle-income settings may differ substantially from those described in the current evidence base, because access to care is shaped by national systems, legal conditions, service integration, and the availability of timely, culturally sensitive support (WHO, 2026). The literature is therefore limited not only by what it measures, but also by where it has been conducted and whose experiences it has made visible.

These findings have important implications for practice and policy. The evidence suggests that support for forced migrant women during the perinatal period should not be limited to the identification and treatment of individual symptoms alone. Broader evidence on access to perinatal mental healthcare shows that barriers and facilitators operate across multiple levels, including women's own understandings of distress, family and community relationships, healthcare encounters, organisational systems, and wider social conditions (WHO, 2026; WHO, 2025; Webb et al., 2023). In practical terms, these findings suggest the need for perinatal mental healthcare that is trauma-informed and culturally responsive, and supported by safe interpretation, continuity of care, and trusted referral pathways. WHO also emphasises that refugee and migrant health should be integrated into national and local policies and that services should be people-centred, high-quality, and responsive to the needs of refugees and migrants (WHO, 2025).

The findings also have important implications for future research. Given the heterogeneity and methodological limitations of the current evidence base, there is a clear need for more robust longitudinal studies, greater validation of screening tools in diverse forced migrant perinatal populations, and research that extends beyond depression to include anxiety, PTSD, and other mental health outcomes. The absence of intervention studies is particularly striking,

as it means that the field is currently better at demonstrating need than at identifying what forms of support are most effective. Future work should therefore move beyond descriptive burden estimates towards testing interventions and care models that operate across individual, social, and structural levels.

The limitations of this review itself must also be acknowledged. Although the search strategy included major biomedical, psychological, nursing, and grey literature sources, it was not exhaustive in the manner of a full systematic review, and therefore some relevant studies may have been missed. The English-language restriction may also have excluded potentially relevant studies conducted in non-English-speaking host settings, since language restrictions can introduce language bias and may leave out important evidence (Pieper and Puljak, 2021; Neimann Rasmussen and Montgomery, 2018). In addition, because no formal quality appraisal was undertaken, the discussion of study quality has necessarily been interpretive rather than tool-based. Formal critical appraisal is not a mandatory component of scoping review methodology, but its absence does limit how confidently the strength of the included evidence can be judged (Munn et al., 2018).

At the same time, this review also had important strengths. By restricting inclusion to studies in which forced migrant women could be distinguished analytically from voluntary migrant groups, the review preserved conceptual clarity around the population of interest and avoided drawing conclusions from undifferentiated migrant samples. The inclusion of grey literature searches also strengthened the review by reducing reliance on peer-reviewed publications alone and increasing the likelihood of identifying less visible evidence. More broadly, the scoping review approach remained well suited to the purpose of this chapter because the field is still heterogeneous in concepts, designs, and outcome measures, and the aim was to map the available evidence and identify gaps rather than to produce a pooled estimate. Taken together, these features mean that, despite its limitations, this review provides a useful and appropriately focused overview of an emerging evidence base and offers a clear foundation for future research.

3.7 Conclusion

This scoping review highlights the substantial perinatal mental health burden experienced by forced migrant women, particularly in relation to depression, anxiety, and PTSD. The findings suggest that these difficulties are shaped not only by traumatic experiences, but also by the broader social and structural conditions surrounding forced migration, including limited social support, stigma, language barriers, and difficulties accessing acceptable and trustworthy care. Taken together, the evidence indicates that perinatal mental health in this population must be understood as a multilevel issue rather than as an individual problem alone. At the same time, the review identified important gaps in the evidence base, including the absence of intervention studies, the limited attention given to mental health outcomes beyond depression, anxiety, and PTSD, and the concentration of studies in higher-income settings despite the large proportion of forced migrant populations living in low- and middle-income countries. Addressing these gaps will be essential if policy, practice, and future research are to respond more effectively to the mental health needs of forced migrant women during the perinatal period.

4 UK Resettlement Policies and Their Implications for Mental Health: A Policy Review

4.1 Chapter overview

The previous chapters examined migrant mental health inequalities, highlighting significant gaps in support systems and access to care. These findings pointed to the need to examine the wider policy environments through which many post-migration experiences are structured.

This chapter therefore shifts the focus from individual and group-level mental health outcomes to the policy context that shapes conditions of resettlement and integration. It examines four key UK schemes introduced in response to the recent Afghan and Ukrainian displacement crises: the Afghan Relocations and Assistance Policy (ARAP), the Afghan Citizens Resettlement Scheme (ACRS), the Ukraine Family Scheme, and the Homes for Ukraine Sponsorship Scheme. Although these policies were not designed as mental health interventions, they shaped access to housing, healthcare, family reunion, employment, and social support, all of which are well-established in the wider literature as relevant to refugee and migrant mental health.

The comparison between Afghan and Ukrainian forced migrants offers a useful analytical lens because both groups were the subject of major UK policy responses introduced within a relatively short period, yet the schemes differed in pace, eligibility, routes of access, implementation, and public engagement. Comparing these responses therefore allows closer examination of how different policy designs may produce different post-migration conditions for forced migrants.

Overall, this chapter builds a bridge between the earlier empirical chapters and the final synthesis of the thesis by showing how policy frameworks may enable or constrain the conditions through which forced migrants rebuild their lives after arrival. In doing so, it provides a deeper understanding of how national resettlement systems may shape access to support, inclusion, stability, and wider well-being.

4.2 Abstract

Introduction: The displacement of Afghans following the Taliban's return to power in August 2021 and of Ukrainians following Russia's invasion in February 2022 prompted the United Kingdom to introduce four major schemes: the Afghan Relocations and Assistance Policy (ARAP), the Afghan Citizens Resettlement Scheme (ACRS), the Ukraine Family Scheme, and the Homes for Ukraine Sponsorship Scheme. This chapter examines how these policies differed in design and implementation, and how such differences shaped post-migration conditions relevant to forced migrants' mental well-being.

Methods: This policy review adopted the structured analytical approach outlined in Morestin's "*Framework for Analysing Public Policies: Practical Guide*" (2013), assessing each scheme across six dimensions: effectiveness, unintended effects, equity, cost, feasibility, and acceptability. Documentary search was used as the primary data collection method, including UK government policy documents, official guidelines, government statistics, parliamentary and ministerial material where relevant, implementation reports, and relevant news coverage accessed through ProQuest and targeted Google searches. Materials were selected on the basis of their relevance to the research objectives and to the six analytical dimensions of the framework.

Results: The analysis identified marked disparities in the treatment of Afghan and Ukrainian forced migrants. The Ukrainian schemes generally provided faster routes of entry, broader sponsorship mechanisms, and more visible public mobilisation. The Afghan schemes, by contrast, were more affected by delays, narrower eligibility criteria, administrative backlogs, reduced resource allocation, and prolonged waiting in third countries. Across the six dimensions, these differences were reflected in unequal access to housing, legal security, family reunion, and integration support.

Conclusion: Although these policies were not explicitly designed to address mental health, they shaped post-migration conditions that are known in the wider literature to matter for refugee and migrant mental health. The findings suggest that resettlement policy should be

understood not only as a mechanism of admission, but also as a framework that can support or undermine stability, inclusion, and access to essential services. More equitable and sustainable policy design is therefore likely to be important for both integration and wider mental well-being among forced migrants.

4.3 Background

The recent history of forced migration in the UK, particularly in relation to Afghan and Ukrainian nationals, has been shaped by major geopolitical events, humanitarian crises, and the policy responses of host states. This chapter examines how the UK responded to these two recent displacement crises and considers what these responses may suggest about the post-migration conditions of resettlement and integration that are known to matter for mental health and wider well-being.

This chapter builds on insights from the earlier chapters of the thesis while shifting the focus from patterns of mental health inequality to the policy context through which many post-migration experiences are shaped. The preceding chapters highlighted the importance of factors such as legal insecurity, access to healthcare, affordability, housing, stigma, and especially social support in shaping migrant mental health. These factors are not shaped only by individual or social circumstances, but also by the way resettlement systems are designed and implemented. A policy analysis therefore offers an important extension of the earlier empirical findings by examining the institutional arrangements through which support, inclusion, and stability are made more or less attainable.

The UK provides a valuable setting for such an analysis because it developed distinct policy responses to the Afghan and Ukrainian displacement crises within a relatively short period of time. The aim of this chapter is not to provide a broad cross-national comparison, but to examine in depth how policy design within one national context may shape post-migration conditions relevant to mental health. A multi-country policy analysis would have required detailed comparison of different asylum, welfare, housing, healthcare, and integration systems, each shaped by distinct legal and political contexts. Such an analysis would also have required engagement with policy documents, parliamentary debates, civil society reports, and media coverage across multiple languages, creating a risk of uneven interpretation or selective reliance on English-language sources. A focused UK case study was therefore more appropriate for the scope of this thesis, as it allowed a more detailed and contextually grounded analysis of policy design, implementation, and public response.

The Afghan and Ukrainian cases were selected because both involved large-scale displacement and substantial UK policy responses, but the schemes developed for these groups differed in design, eligibility routes, and implementation. Their analytical value therefore lies in offering a structured comparison of how policy design may shape access to support and settlement conditions for different forced migrant groups.

This chapter does not claim to directly measure the mental health impact of UK resettlement policies. Rather, it examines how differences in policy design and implementation may shape conditions that are already well-established in the literature as relevant to mental health. This is especially important because social support emerged as a key protective factor in the earlier empirical chapters, while limited access to services and broader structural barriers were associated with poorer outcomes. The present chapter therefore asks how far UK policy responses may have supported or constrained the conditions likely to matter for mental health among forced migrants.

By focusing on policy responses in this way, the chapter seeks to illuminate how resettlement frameworks may shape the lived conditions of forced migration after arrival, and how these conditions may differ for Afghan and Ukrainian populations within the UK context. The following sections provide contextual background for each case before outlining the UK schemes introduced in response. This is necessary because the design of each policy cannot be understood without considering the different histories of displacement, protection needs, and political contexts surrounding Afghan and Ukrainian forced migration.

4.3.1 History of forced migration in Afghanistan (pre-2021)

The ‘recent’ history of forced migration in Afghanistan started with the Soviet invasion in 1979, and forced migration has since remained a continuous tragedy in the country, persisting in different forms to the present day. Earlier events, such as the first Anglo-Afghan War (1839 – 1842), may also have significantly impacted forced migration, but these fall outside the scope of this chapter.

The Soviet–Afghan War (1979 – 1989) led to the displacement of millions of Afghans, with over 5 million Afghans fleeing to Pakistan and Iran by the end of the conflict (Hughes, 2008). The reasons for fleeing included the ongoing conflict, the drastic social reforms deemed anti-Islamic, and the Soviet military presence (Jazayery, 2002; Schmeidl, 2002). This period marked the beginning of one of the world's largest refugee crises (Hein and Niazi, 2012), setting a precedent for future displacements within and from Afghanistan.

Following the withdrawal of Soviet forces, Afghanistan plunged into civil war (1992 – 1996), resulting in further internal displacement and people fleeing the country. However, this period also saw a substantial number of people returning to Afghanistan. In 1992, about 1.2 million refugees, encouraged by repatriation efforts, returned to Afghanistan from Pakistan alone (Schmeidl, 2002). Despite this, the majority of refugees (over 3 million) remained outside Afghanistan (Mandel, 1997). The civil war was the primary catalyst for refugee outflow, leading to the rise of various warlords driven by religious, ethnic, and political differences (Mandel, 1997).

In late 1994, the Taliban movement emerged and rapidly took control of most parts of the country (Rashid, 2022). The Taliban, a militant Islamist group, was founded by Mullah Mohammed Omar and primarily consisted of Pashtuns from Islamic religious schools (madrasas) in Pakistan (Rashid, 2022). Their initial rise to power was accelerated by promises of restoring peace and security after years of civil war and chaos caused by competing warlords (Rashid, 2022). Due to the turmoil spreading by the warlords, the Taliban were initially welcomed by the local population under Taliban governance (Forced Migration Review, 2002). However, by 1996, after taking over major cities including Kabul, the darker aspects of their rule became apparent (Schmeidl, 2002). The Taliban's extremist view of Islamic Shariah law and its implementation, coupled with a severe drought leading to widespread shortages of food and water, accounted for another significant outflow of people forced to migrate both internally and internationally (Schmeidl, 2002). Furthermore, religious minorities and Shia Muslims were particularly affected under the Taliban regime (Gul Khattak, 2003). Among these communities, thousands were killed, and this wave of ethnic cleansing led to a mass exodus of internally displaced people, as well as a large number fleeing, particularly to Iran, to seek refuge (Jazayery, 2002).

Finally, following the 9/11 attacks, the anticipation of U.S. military action, combined with ongoing socio-political instability and the ongoing drought, significantly influenced further migration outflows. Nonetheless, the fall of the Taliban following U.S.-led military action and the establishment of a new government sparked a wave of return among Afghan refugees. By the end of September 2002, more than 1.7 million Afghans had returned, primarily from Pakistan and Iran, motivated by the prospect of rebuilding their lives and their country (Majidi, 2017).

4.3.2 Forced migration in Afghanistan (post-Taliban takeover in 2021)

The rapid fall of the government in Afghanistan and the subsequent takeover of the country by the Taliban in August 2021 marked a dramatic shift in the country's political landscape, leading to widespread fear and uncertainty among its citizens. This political disruption had immediate and profound implications for the safety and rights of the Afghan people, especially those associated with the previous government, women, human rights activists, and affiliated with Western entities (UN, 2023; UNAMA, 2022; UN, 2022; UN WOMEN, 2022; Human Rights Watch, 2021a).

Following their return to power in Afghanistan, the Taliban announced a general amnesty for everyone, including those associated with the previous government or those affiliated with Western entities (VOA, 2023a). However, despite the announcement, there were numerous instances of extrajudicial killings and enforced disappearances of former government and security officials by members of the Taliban (UNAMA, 2022). The Human Rights Watch (HRW) report documented the killing or disappearance of 47 former members of the Afghan National Security Forces in four provinces alone and cited credible information on more than 100 such cases from these provinces in the three months after the Taliban's takeover of the country (Human Rights Watch, 2021b).

In addition to these concerns, women's rights and freedoms have been severely restricted under the Taliban regime. Currently, women are largely excluded from public office and the judiciary, face restrictions on their movements and activities, and are required to adhere to a strict dress code. Girls are banned from attending school beyond the sixth grade, and women

are not allowed to participate in most jobs outside the home (UN WOMEN, 2022). This rollback in women's rights is considered a significant regression to the pre-2002 era, erasing more than two decades of progress in women's rights in Afghanistan (UN, 2023).

The forced migration from Afghanistan following the Taliban's takeover in August 2021 has been a significant and complex humanitarian crisis. This situation led to a mass exodus of Afghans seeking refuge and safety from persecution and violence. As of 2023, in a report by UNHCR, more than 8 million Afghans have been displaced outside the country, a figure that includes those affected by previous conflicts and crises as well as the recent government collapse (UNHCR, 2023). The report further indicated that over 1.6 million of those forced to migrate did so after 2021, with a record 28.3 million people (two-thirds of the country's population) in need of humanitarian and protection assistance in Afghanistan (UNHCR, 2023).

Many of the displaced Afghans have been hosted in neighbouring countries, with Pakistan and Iran being the primary destinations. As of late 2023, it was estimated that an additional 600,000 Afghan refugees had taken refuge in Pakistan, and about 500,000 in Iran since the Taliban's return to power (The Interpreter, 2023). This increase was in addition to the pre-existing population of Afghan refugees in these countries, bringing the total to approximately 1.35 million in Pakistan and 780,000 in Iran. Moreover, these two countries are also home to over five million additional Afghans, most of whom are undocumented (UNHCR, 2024a). The displaced Afghans have faced various challenges in these countries, including issues with legal status, abuse, limited access to education, and deportation (Human Rights Watch, 2021c).

Several countries have pledged to resettle Afghan refugees since August 2021. Canada has welcomed over 45,000 'vulnerable' Afghans (Government of Canada, 2024), Australia granted humanitarian visas for over 15,000 Afghans (The Guardian, 2024a), and Mexico welcomed over 100 journalists and members of their families (Reuters, 2021). The United States had resettled more than 90,000 Afghans by April 2023 (VOA, 2023b).

4.3.3 The UK's approach

The UK's response to the situation in Afghanistan, especially after the Taliban takeover, involved different frameworks and programmes, including the Afghan Relocations and Assistance Policy (ARAP) and the Afghan Citizens Resettlement Scheme (ACRS).

4.3.3.1 Afghan Relocations and Assistance Policy (ARAP)

The ARAP began in April 2021 and aimed to relocate eligible Afghans, especially those who had worked with the UK government and were vulnerable to persecution by the Taliban. Under ARAP, eligibility was determined by both the Ministry of Defence (MoD) and the Home Office. The policy categorised eligibility into four main categories based on the following specific criteria (GOV.UK, 2023b):

- Category 1 encompassed individuals deemed to be at high and imminent risk of threat to life due to their association with the UK Government in Afghanistan.
- Category 2 included individuals who were directly employed by the UK government or engaged in providing linguistic services, with their roles deemed pivotal for the success of UK operations in Afghanistan.
- Category 3 was designated for individuals who did not meet the criteria for high-risk relocation but were eligible for alternative forms of support provided by the ARAP team.
- Category 4 addressed special cases, where individuals were assessed on a case-by-case basis, considering their contribution to UK military or national security objectives in Afghanistan.

Applicants deemed ineligible under ARAP had the right to request a review of their decision (GOV.UK, 2023b).

Family members eligible for relocation had to be included in the principal applicant's original ARAP application. Family members included partners, children under the age of 18, and additional eligible family members. Additional family members had to satisfy specific

conditions, such as facing elevated risks due to the Afghan citizen's work or demonstrating exceptional family dependence (GOV.UK, 2024e).

Individuals under ARAP were granted indefinite leave to remain in the UK, providing them with access to certain roles and the opportunity to apply for British citizenship after five years (GOV.UK, 2023b).

4.3.3.2 The Afghan Citizens Resettlement Scheme (ACRS)

Announced in August 2021, the ACRS was planned to resettle up to 20,000 people at risk, prioritising those who assisted UK efforts in Afghanistan and stood up for values such as democracy and women's rights. In contrast to the ARAP, which primarily targeted individuals with direct affiliation with the UK government, the ACRS broadened its scope to include a wider group of vulnerable individuals such as women, girls, and members of minority groups (GOV.UK, 2023a).

Unlike the application-based approach of ARAP, the ACRS operated through a series of referral pathways, demonstrating a shift towards a more inclusive method of identifying eligible candidates for resettlement. These pathways included: (GOV.UK, 2023a)

- Pathway 1 prioritised the resettlement of vulnerable and at-risk individuals who were evacuated to the UK. Furthermore, eligible individuals in this category also included those who were assured evacuation but could not board flights and did not have leave to remain in a safe country.
- Under Pathway 2, referrals for resettlement were received from the UNHCR. Vulnerable refugees who fled Afghanistan were referred based on "*standard resettlement submission criteria*", considering vulnerabilities and protection needs.
- Pathway 3 was designed for individuals at risk who supported UK and international efforts in Afghanistan, as well as vulnerable groups.

Eligible family members included partners and dependent children under the age of 18, with some exceptions for additional family members under exceptional circumstances (GOV.UK, 2023a).

Similar to the ARAP, individuals resettled through ACRS were granted indefinite leave to remain in the UK, providing them with access to certain roles and the opportunity to apply for British citizenship after five years (GOV.UK, 2023a).

As of November 2023, the UK had resettled over 11,500 Afghans through ARAP and over 9,500 Afghans through ACRS (GOV.UK, 2024a).

4.3.4 History of forced migration in Ukraine (pre-2022)

Prior to the recent conflict, Ukraine had a history of forced migration dating back to earlier periods, such as the aftermath of World War II, where millions were displaced both internally and internationally (Snyder, 2011).

Throughout the latter half of the 20th century, Ukraine experienced various forced migrations due to political unrest, economic instability, and conflicts. One notable event was the Chernobyl disaster in 1986, which resulted in the forced evacuation and displacement of thousands of people from affected areas due to radioactive contamination (International Atomic Energy Agency, 2006). Following independence in 1991, Ukraine faced several challenges, including economic transition and political instability, leading to internal migration and the displacement of populations (Lloyd and Sirkeci, 2022). Additionally, religious and ethnic minorities fearing persecution and discrimination were left with no choice but to flee the country (Lloyd and Sirkeci, 2022).

Moreover, the annexation of Crimea by Russia in 2014 and the subsequent conflict in Eastern Ukraine led to significant internal displacement, with hundreds of thousands of people forced to flee their homes to seek safety in other parts of Ukraine (IDMC, 2014). Similarly, the conflict in Eastern Ukraine, particularly in the Donetsk, Luhansk, and Donbas regions, further led to substantial numbers of people being displaced internally (IDMC, 2014) and across borders (Sasse, 2020).

4.3.5 Forced migration in Ukraine (post-Russian invasion in Feb 2022)

The more recent conflict in Ukraine, leading to a severe humanitarian crisis, began with the Russian military invasion in February 2022. This invasion marked a significant escalation in the ongoing Russo–Ukrainian War, which had been active since 2014 following the annexation of Crimea and the war in Eastern Ukraine (IDMC, 2014). The 2022 invasion led to extensive destruction, human rights abuses, and a humanitarian crisis, forcing millions to flee their homes (Council on Foreign Relations, 2024).

As of January 2024, an estimated 3.7 million people were displaced within Ukraine, with 6.3 million people registering as refugees globally, marking the largest European refugee crisis since World War II. The UNHCR estimated that 14.6 million people would require humanitarian support within Ukraine in 2024 (UNHCR, 2024d). As of the end of the year 2023, neighbouring countries to Ukraine's west, including Poland, Slovakia, Hungary, Romania, and Moldova were the primary destinations for fleeing Ukrainians. Further movements saw refugees fleeing deeper into Europe, with significant numbers seeking asylum or temporary protection in Germany and the Czech Republic (UNHCR, 2024e). By December 2023, Germany had recorded over 1.1 million Ukrainian refugees, Poland around 1 million, and the Czech Republic over 375,000 refugees from Ukraine (UNHCR, 2024e).

4.3.6 The UK's approach

The UK's response to the Ukrainian refugee crisis was mainly structured around two key schemes introduced in March 2022: the Ukraine Family Scheme and the Homes for Ukraine Scheme.

4.3.6.1 Ukraine Family Scheme

The Ukraine Family Scheme, introduced after the statement made by the Home Secretary to Parliament in March 2022, allowed immediate and extended family members of British nationals and people settled in the UK to come or remain in the country. This scheme primarily targeted those who were living in Ukraine before 1 January 2022 and had family members in the UK. While initially designed for applicants outside the UK, it also extended to

Ukrainians and their family members who were in the UK before 1 January 2022 (GOV.UK, 2024g).

To qualify for the Ukraine Family Scheme, applicants had to meet certain eligibility requirements. They had to have been ordinarily living in Ukraine before 1 January 2022, be an eligible family member of a UK-based sponsor, and either be Ukrainian or part of a family group including a Ukrainian national who would qualify under the scheme. The UK-based sponsor could be a British citizen, a person settled in the UK, a refugee, or someone granted humanitarian protection (GOV.UK, 2024g).

In terms of relationships, the scheme recognised both immediate and extended family members. Immediate family members included partners, children under the age of 18, parents of children under the age of 18, and fiancés or proposed civil partners of the UK-based sponsor. Extended family encompassed a broader range of relationships such as parents, children over the age of 18, grandparents, siblings, cousins, and nieces or nephews of the UK-based sponsor or their partner (GOV.UK, 2024g).

Beneficiaries could live in the UK for up to three years and have access to healthcare, benefits, education, and work in the UK (GOV.UK, 2023c). It is worth noting that this scheme closed on 19 February 2024 for new applications, but those submitted before this date continued to be processed according to the provided guidance (GOV.UK, 2024g).

4.3.6.2 Homes for Ukraine Sponsorship Scheme

Like the Ukraine Family Scheme, the Homes for Ukraine Sponsorship Scheme was introduced in March 2022. This scheme was aimed at Ukrainian nationals with no family ties in the UK and enabled them to be sponsored by UK residents. The sponsors were responsible for providing accommodation for the sponsored Ukrainians for a minimum of 6 months, with the expectation that they may offer longer-term support if possible. The sponsors could reside anywhere in the UK and must be British or Irish citizens or settled in the UK permanently. Furthermore, sponsors underwent comprehensive checks, including security and criminal

checks, by the Home Office, as well as Disclosure and Barring Service (DBS) checks to assess their suitability (Home Office, 2024).

This scheme was notable for its openness to many Ukrainian nationals and their immediate family members and for also providing them with the same benefits as the Ukraine Family Scheme (GOV.UK, 2023d).

By the end of September 2023, over 240,000 visas were issued through these schemes, with approximately 190,000 of these visa recipients having already arrived in the UK (GOV.UK, 2023g). The demographic composition of Ukrainian refugees was predominantly women and children largely due to the policy implemented by the Ukrainian government, which restricted males of military age from leaving the country (Kogan and Kosyakova, 2025). This was also reflected in the UK's arrival statistics, where adult females between the ages of 18 and 64 accounted for nearly half of the arrivals, and children under the age of 18 represented about 28% of these arrivals.

4.3.7 Policy conditions relevant to mental health among forced migrants

While the UK implemented several policies aimed at supporting Afghan and Ukrainian forced migrants, particularly through resettlement and sponsorship schemes, there was limited explicit attention to mental health within these policy frameworks. This is notable because, as highlighted in the earlier chapters of the thesis, forced migrants are at increased risk of mental health difficulties including anxiety, depression, and post-traumatic stress disorder. However, the mental health relevance of resettlement policy does not necessarily depend only on whether policies include dedicated mental health services. It may also depend on whether they create stable or unstable post-migration conditions.

This point is especially relevant in light of findings from the earlier chapters. Chapter 2 showed that social support, affordability of services, and broader structural disadvantage were important correlates of depression-related outcomes, while Chapter 3 highlighted the protective role of social support and the negative effects of stigma, trauma, and barriers to

care. These findings suggest that policy matters not only through specialist mental health provision, but also through the extent to which it enables secure settlement, trusted access to services, and supportive social environments.

Existing evidence also supports the importance of these broader determinants. According to the WHO, ensuring stable housing, legal protection, and accessible healthcare for forced migrants could significantly reduce the mental health risks they face, including anxiety, depression, and PTSD (WHO, 2023). The WHO report further highlights that access to housing and healthcare is essential for integrating migrants into new environments, reducing the stressors of displacement, and supporting overall well-being, particularly for vulnerable groups like women during the perinatal period (WHO, 2023). Ziersch et al. (2024) also reinforced that stable housing and legal status were key factors in promoting the well-being of refugees. These factors, combined with access to healthcare, are closely linked to mental health outcomes, making it crucial for resettlement policies to address these areas as part of comprehensive support for forced migrants (Ziersch et al., 2024). The policy analysis in this chapter is therefore concerned with whether UK schemes for Afghan and Ukrainian forced migrants appear to have created more or less supportive post-migration conditions.

4.3.8 Theoretical framework

This chapter adopts the Social-Ecological Model (SEM) as its overarching theoretical lens and uses it alongside Morestin's policy analysis framework to examine UK policies toward Afghan and Ukrainian forced migrants. Morestin's framework provides the primary evaluative structure for analysing policy across dimensions such as effectiveness, equity, unintended effects, cost, feasibility, and acceptability (Morestin, 2013), while the SEM offers a way of interpreting how these policies may shape conditions of resettlement across structural, social, and individual levels (McLeroy et al., 1988; Bronfenbrenner, 1979). The specific dimensions drawn from Morestin's framework are outlined in more detail in the Methods section.

Given the policy focus of this chapter, the structural (macro) level is the primary level of analysis. The chapter is principally concerned with how legal rules, administrative arrangements, eligibility criteria, entitlements, housing systems, and access to services may

produce different conditions of settlement and support for Afghan and Ukrainian forced migrants. The social (meso) and individual (micro) levels are therefore used more interpretively, to consider how these structural arrangements may shape social relationships, support systems, and lived experiences.

This chapter also draws on ideas of social categorisation and boundary-making, particularly through the work of Goffman (1990) and Tajfel and Turner (1978) (Goffman, 1990; Tajfel and Turner, 1978). These perspectives are useful in considering how different migrant groups may come to be framed, received, and responded to within policy and public discourse. Goffman argued that stigma "*reduces*" an individual's identity, making them less acceptable within mainstream society, leading to different forms of exclusion and marginalisation (Goffman, 1990, p. 12). Such stigma may attach to perceived social "*blemishes*", including characteristics associated with ethnicity, religion, or national origin (Goffman, 1990, p. 14). While Goffman helps explain how certain identities become devalued, Social Identity Theory more directly explains how people often categorise themselves and others into in-groups and out-groups, and how perceived group membership can influence attitudes, empathy, solidarity, and support (Tajfel and Turner, 1978). In this chapter, these perspectives help sensitise the analysis to consider whether some groups may be framed as more familiar, proximate, or readily deserving of support, while others may be constructed more distantly. They are not used to assume that any one factor alone explains policy differences, but rather to remain attentive to the broader social and political processes through which inclusion and exclusion may be produced.

At the macro-level, the SEM directs attention to formal policy structures, including immigration routes, resettlement criteria, housing arrangements, administrative priorities, healthcare access, and wider political discourse (Phillips, 2011). At the meso-level, it helps consider how such policies may influence family reunion, sponsorship arrangements, community support, and opportunities for social integration. At the micro-level, it provides a more cautious basis for considering how these wider arrangements may affect experiences such as insecurity, uncertainty, and stigma.

Taken together, these frameworks allow the chapter to go beyond a surface-level comparison of policy provisions and to consider how policy design may shape broader conditions of inclusion, exclusion, and support. Morestin's framework structures the formal policy analysis, while the SEM and social categorisation perspectives help interpret how differences in policy design and implementation may matter across structural, social, and individual levels.

4.3.9 Aims

This study aimed to conduct a comparative policy analysis of the UK's responses to Afghan and Ukrainian forced migrants, two groups whose resettlement was shaped by distinct policy schemes introduced in response to different geopolitical crises. By comparing these two case studies, the chapter sought to examine how differences in policy design and implementation may shape conditions of resettlement, access to support, and wider well-being among forced migrants. In doing so, the study aimed to provide a clearer understanding of how UK policy responses addressed, or failed to address, the challenges faced by different forced migrant groups during resettlement and integration.

4.3.10 Objectives

The following objectives were based on the '*Framework for Analysing Public Policies: Practical Guide*' (Morestin, 2013). This framework was chosen because of its comprehensive approach, which allows for a systematic evaluation of public policy across dimensions such as effectiveness, equity, unintended effects, cost, feasibility, and acceptability. By applying this framework to the UK's policies towards Afghan and Ukrainian forced migrants, the study aimed to:

1. Assess effectiveness: evaluate how well the UK's policies towards Afghan and Ukrainian forced migrants achieved their stated aims, including the number of individuals resettled and the form of support provided.
2. Identify unintended effects: examine any unintended consequences of these policies, both positive and negative, for forced migrants and host communities.

3. Evaluate equity: assess whether these policies addressed the needs of different subgroups among forced migrants, including women, children, ethnic minorities, and other vulnerable groups where evidence was available.
4. Analyse cost and feasibility: consider the financial implications and practical challenges of implementing these policies, including the relationship between resources allocated and outcomes achieved.
5. Determine acceptability: assess the acceptability of these policies among key stakeholders, including forced migrants, policymakers, and the general public.
6. Undertake comparative analysis: compare the effectiveness, unintended effects, equity, cost, feasibility, and acceptability of the UK's policy responses towards Afghan and Ukrainian forced migrants in order to identify key similarities, differences, and areas for improvement.

4.4 Methods

4.4.1 Approach

This study adopted a structured comparative policy analysis informed by Morestin's '*Framework for Analysing Public Policies: Practical Guide*' (Morestin, 2013). This framework enabled a comprehensive evaluation of the UK's policy responses to Afghan and Ukrainian forced migrants. The framework was selected because it provides a practical structure for examining public policies across six dimensions, including effectiveness, equity, unintended effects, cost, feasibility, and acceptability (Morestin, 2013). The framework was particularly useful because it allowed the two policy responses to be examined through the same analytical lens, thereby supporting a consistent comparison of similarities, differences, and policy-specific challenges.

These six dimensions were operationalised using the guiding questions provided in Morestin's framework appendix, which are reproduced in Appendix D.

4.4.2 Measures – the six dimensions of the framework

4.4.2.1 Effectiveness

The effectiveness dimension was used to evaluate how far the policies appeared to achieve their stated aims (Morestin, 2013). In this chapter, it included whether the schemes facilitated the planned admission or resettlement of forced migrants and whether they appeared to provide access to key conditions of resettlement in the UK.

The effectiveness of the policies was therefore considered in relation to issues such as the number of forced migrants accommodated, the extent to which the schemes appeared to operate as intended, and whether the policies appeared to support access to essential services such as housing, education, healthcare, and employment.

4.4.2.2 Unintended effects

The dimension of unintended effects involved examining outcomes produced by the implementation of a public policy that were not originally planned or anticipated when the policy was designed. These effects could be positive or negative and could extend beyond the formal aims of the policy (Morestin, 2013).

In the context of forced migration policies, positive unintended effects might include examples such as increased cultural diversity within host communities. For instance, the resettlement of forced migrants may lead to the enrichment of local culture through the introduction of new customs, traditions, and perspectives (IOM, 2020).

Conversely, negative unintended effects could arise from the implementation of forced migration policies, impacting both forced migrants and host communities. For example, the concentration of arrivals in specific areas could place pressure on local housing, education, healthcare, or administrative systems, and in some cases may contribute to tensions between host communities and migrant populations (Myers et al., 2024).

4.4.2.3 Equity

Equity examined whether the policy produced differential effects on various groups, categorised by factors such as age, gender, socioeconomic status, ethnicity, religion, and other relevant social characteristics (Morestin, 2013). An equitable policy is one that does not disproportionately advantage or disadvantage specific groups, but instead aims to reduce unfair differences in access to resources, opportunities, and support (WHO, 2024). Therefore, it was essential to assess whether the policies under analysis could potentially create or correct inequalities.

In this chapter, equity was considered in relation to whether the policies appeared to address the needs of different subgroups among forced migrants and whether some groups may have been better served than others by the design or implementation of the schemes. This included attention to groups such as women, children, ethnic or religious minorities, and other vulnerable groups where relevant evidence was available.

4.4.2.4 Cost

The cost dimension involved analysing the financial implications of the policies under review. While policy cost is often understood in terms of direct government expenditure, policies may also generate gains and costs to other actors involved (Morestin, 2013).

For example, resettlement policies may involve government spending on accommodation, healthcare, welfare support, and language services for incoming migrants. At the same time, broader resource implications may arise for local authorities, sponsors, service providers, and communities (Migration Council Australia, 2014). In this chapter, cost was considered primarily in relation to the financial and material resources required to implement the policies and, where evidence was available, any wider resource implications associated with them. It was not intended as a formal economic evaluation or cost-effectiveness analysis.

4.4.2.5 Feasibility

The dimension of feasibility assessed the practical and logistical aspects associated with implementing the policies. Feasibility involved consideration of factors such as resource availability, administrative capacity, operational challenges, and the degree to which a policy could be delivered within existing legal and institutional structures (Morestin, 2013).

In this study, feasibility was relevant to questions such as whether sufficient housing, staffing, infrastructure, and administrative arrangements were in place to support implementation, and whether the policies could be delivered effectively in practice. It also included consideration of whether the schemes were realistic in relation to the scale of need and the practical demands of implementation.

4.4.2.6 Acceptability

The acceptability dimension concerned how stakeholders perceived and judged the policy under consideration. This dimension included stakeholder reactions, the perception of the issue as a social problem requiring intervention, viewpoints on the policy's implementation,

and whether the policy's acceptability evolved during its implementation period (Morestin, 2013).

In the context of this chapter, acceptability involved considering how the policies were received by stakeholders such as forced migrants, policymakers, local authorities, sponsors, advocacy groups, and the wider public, where relevant evidence was available in the source material. Stakeholders' perceptions of the policy's effectiveness, unintended effects, equity, cost, and feasibility can significantly influence its acceptability (Morestin, 2013). The assessment of acceptability was therefore based on documentary evidence of stakeholder responses rather than on primary data collected directly from these groups.

4.4.3 Policy selection

The selection of policies in this chapter focused specifically on the principal UK resettlement and sponsorship schemes made available to Afghan and Ukrainian forced migrants following the major crises in Afghanistan in 2021 and Ukraine in 2022. The choice of these two case studies was informed not only by the scale and recency of forced migration from these contexts, but also by their analytical value for comparative policy analysis. Both groups were the subject of substantial UK policy responses introduced within a relatively short time period, yet the schemes developed for them differed in design, eligibility routes, and implementation arrangements. This provided a useful basis for examining how policy design may shape access to support and wider post-migration conditions.

This review considered the main schemes introduced specifically for these two groups. As a result, the policies included in the analysis were the Afghan Relocations and Assistance Policy (ARAP), the Afghan Citizens Resettlement Scheme (ACRS), the Ukraine Family Scheme, and the Homes for Ukraine Scheme. ARAP and ACRS were introduced in response to the Taliban's takeover of Afghanistan in 2021, with ARAP focusing largely on those who had worked with the UK, while ACRS extended to a wider group of people considered at risk due to the political crisis in the country (GOV.UK, 2023b; GOV.UK, 2023a). Similarly, the Ukraine Family Scheme and the Homes for Ukraine Scheme were launched following Russia's invasion of Ukraine in

2022, aiming to facilitate family reunion and provide routes of entry and accommodation for displaced Ukrainians (GOV.UK, 2023c; GOV.UK, 2023d).

By focusing on these four schemes, the analysis provided a structured opportunity to compare how the UK responded to two distinct but urgent displacement crises. This approach enabled examination of similarities and differences in policy objectives, routes of access, forms of support, and implementation challenges across the two cases.

4.4.4 Data sources

The primary method of data collection was 'documentary searches', as described within Morestin's framework (Morestin, 2013). This involved a detailed examination of official policy documents, government reports, and relevant news coverage relating to the selected schemes. Official policy documents, including scheme guidance, policy statements, ministerial announcements, parliamentary material where relevant, and government reports, were obtained primarily from the UK government's official website (www.gov.uk). These documents formed the core source base for understanding the formal design, stated objectives, eligibility criteria, and implementation arrangements of the policies under review.

To complement the official policy material, secondary sources such as news articles and related reporting were also examined in order to capture evidence on implementation, stakeholder responses, emerging concerns, and reported unintended effects. News articles were searched through the ProQuest database using the following search terms: *Afghan Relocations and Assistance Policy*, *ARAP*, *Afghan Citizens Resettlement Scheme*, *ACRS*, *the Ukraine Family Scheme*, *Homes for Ukraine Scheme*, *Homes for Ukraine Sponsorship Scheme*, and *Ukraine Sponsorship Scheme*. These searches were conducted to identify relevant reporting on policy delivery, public and stakeholder reactions, operational challenges, and unintended consequences. Retrieved items were then screened manually for relevance to the research objectives and to the six analytical dimensions of the framework.

In addition, a supplementary Google search was conducted using similar key terms to identify relevant reports, news articles, academic articles, and other publicly available materials not

retrieved through ProQuest. Documents and articles included in the analysis were selected based on their relevance to the research objectives and their contribution to one or more of the six analytical dimensions.

The documents and reports included in the analysis covered the period from August 2021 to February 2024, reflecting the key period following the crises in Afghanistan and Ukraine and the implementation of the relevant UK schemes. Because the analysis relied on publicly available documentary sources, the evidence base was shaped by what had been formally published or publicly reported during this period.

4.4.5 Data analysis

The analysis of each policy was conducted using the six analytical dimensions outlined in the policy framework: effectiveness, unintended effects, equity, cost, feasibility, and acceptability. For each dimension, the guiding questions from the framework's appendix (see Appendix D) were used to assess the content of relevant policy documents and secondary sources (Morestin, 2013, p. 12). This ensured that a consistent analytical approach was applied across both Afghan and Ukrainian policy responses.

Rather than using qualitative data analysis software such as NVivo, the analysis was conducted manually. The guiding questions from the framework were used as prompts to structure the reading of each document and to identify material relevant to each of the six dimensions. For example, when considering effectiveness, attention was given to stated policy aims, delivery targets, and evidence of implementation. When considering equity, the analysis examined whether policies appeared to address the needs of different subgroups and whether certain groups were made more or less visible through policy design and implementation. In practice, this meant looking for references to groups such as women, children, ethnic or religious minorities, and others where evidence was available in the source material.

For each document, the analysis involved the following steps:

1. Downloading and reviewing the relevant document.
2. Highlighting sections manually that addressed one or more of the six dimensions of the framework.
3. Manually noting any observations or insights relevant to the six dimensions, using the framework's guiding questions as prompts.
4. Synthesising findings across the selected policies for Afghan and Ukrainian forced migrants.

A comparative analysis was then undertaken to examine similarities and differences between the two policy responses across the six dimensions. This process made it possible to identify where evidence was directly comparable across the two cases and where evidence was more limited or uneven. In line with the theoretical framework of the chapter, the main analysis focused on the structural (macro) level on policy design and implementation, while implications for social and individual experiences were interpreted more cautiously through the available evidence.

4.4.6 Ethical considerations

The data used in this study consisted of publicly available sources, including official policy documents, government reports, and media articles. As no primary data were collected and no human participants were directly involved, formal ethical approval was not required for this study.

4.5 Results

4.5.1 Afghan Relocations and Assistance Policy (ARAP) and Afghan Citizens Resettlement Scheme (ACRS)

These policies were assessed using the six dimensions of the policy analysis framework:

4.5.1.1 Effectiveness

The effectiveness of the ARAP and ACRS in achieving their objectives – providing relocation and assistance to Afghan citizens who worked with or for the UK government and to vulnerable Afghans – presented a mixed picture, marked by both achievements and notable challenges.

By December 2023, about 25,000 individuals were relocated to the UK under the ARAP (14,423 individuals; 57.8%) and ACRS (10,520 individuals; 42.2%). Indefinite leave to remain was granted to nearly 13,000 (52.1%) of these individuals (GOV.UK, 2024a). During Operation Pitting, a total of 15,000 individuals, including British citizens and nationals of other countries, were evacuated to the UK from Afghanistan. Among these evacuees, 9,706 were Afghans who were later classified under Pathway 1 of the ACRS, effectively reducing the number of places available through that route, which was capped at 20,000 individuals (GOV.UK, 2024a). Additionally, Pathway 2 and 3 of the ACRS saw even fewer arrivals, with 126 and 688 Afghan arrivals by the end of December 2023, respectively (GOV.UK, 2024a).

At the same time, a significant number of Afghans who were eligible for relocation remained stranded while awaiting transfer to the UK. For example, over a thousand Afghans accepted for relocation were reported to be stuck in hotels in Pakistan awaiting onward movement (The Independent, 2023a). ITV News also reported that a further 240 Afghans who had aided British forces had waited for over six months despite having been promised protection (ITV, 2022). Similarly, nearly 500 eligible Afghans under ACRS were reported to be stranded in Pakistan for extended periods. Among them was a British Council teacher who had been stuck in a hotel room for seven months with her newborn. She described her situation as follows:

"*I am in a cramped room with no access to education or healthcare. I have no job or income and I have a newborn son, whose life is confined to just one bed. Our visas have expired and we cannot go out for fear the police will send us back to Afghanistan.*" (Bancroft et al., 2023).

Further questions about effectiveness emerged in relation to how eligibility criteria were interpreted. A High Court decision ordered the government to reconsider rejected applications from Afghan journalists who had been found ineligible under ARAP, indicating that the policy had excluded some individuals whose cases warranted reassessment (Library of Congress, 2023). The policy did, however, include a review process, allowing applicants to provide additional evidence if their applications were refused (GOV.UK, 2023b).

Taken together, the evidence indicates that although ARAP and ACRS enabled the relocation of substantial numbers of Afghans, effectiveness was constrained by narrow eligibility interpretations and prolonged delays affecting individuals already accepted or potentially eligible for relocation.

4.5.1.2 Unintended effects

While some aspects of one dimension may overlap with other dimensions, the focus here was specifically on consequences that were not explicitly planned or anticipated when the policies were introduced.

One unintended consequence of ARAP's restrictive eligibility criteria was the exclusion of some groups who had supported the UK's efforts indirectly, including Afghan journalists associated with the BBC and others whose contributions did not fit neatly within the policy criteria. This led to legal challenges and criticism from various sectors, including the UK's High Court and former UK ambassador to Kabul Sir Nick Kay, who reportedly expressed concern that the policy would leave many at-risk Afghans without a route to safety in the UK (Library of Congress, 2023; The Independent, 2021).

A further unintended effect related to processing delays and backlogs under both the ARAP and ACRS, which are discussed in more detail under the feasibility dimension. Eligible individuals in third countries, particularly Pakistan, were waiting for prolonged periods, often

in insecure and precarious conditions (The Standard, 2022). These delays were not part of the stated purpose of the schemes, yet became a significant feature of how they operated in practice.

4.5.1.3 Equity

As with the previous dimensions, the narrow eligibility criteria and processing delays appeared to affect some vulnerable groups, including women, children, ethnic and religious minorities, and others who may have been at heightened risk under Taliban rule but did not meet the narrow eligibility criteria for relocation to the UK.

The situation of many Afghan families, including children, who were confined to hotel rooms in Pakistan for extended periods, sometimes for six to twelve months, highlighted significant equity concerns. The prolonged stays, often without access to basic services such as education, were reported to be especially detrimental for children (Electronic Immigration Network, 2023). In addition, the legal status of many ARAP- and ACRS-eligible individuals in Pakistan had expired, leaving them at high risk of arrest, detention, and deportation (The Independent, 2023b). The combination of insecure legal status and the possibility of being sent back to Afghanistan under Taliban rule placed these individuals in a particularly precarious situation.

The policies also appeared to generate unequal outcomes among different groups associated with the UK's mission in Afghanistan. For instance, British Council teachers and those working under subcontracted arrangements were initially refused relocation under ARAP, but several months later the government reversed its decision and transferred their cases to the ACRS route (BAAG, 2023). This suggested inconsistency in how the policies recognised different forms of service or association with the UK.

Similarly, although the ACRS stated that it would prioritise vulnerable groups, including ethnic and religious minorities, its actual implementation raised questions about how far these groups were able to benefit in practice. The policy's reliance on UNHCR referrals and the limited number of places available may have reduced the accessibility of the scheme for some

groups facing specific risks (Human Rights Watch, 2022). These concerns were also reflected in reported cases involving pregnant Afghan women stranded in Pakistan (The Guardian, 2023). One such case involved parents who had already lost their two-year-old daughter, reportedly due to underlying medical conditions and lack of access to appropriate medical care, while their unborn child also required further medical attention that was unavailable to them in Pakistan. The pregnant woman described the situation as follows (The Guardian, 2023):

> *"The same experience is happening to us again, ….. , If the British government had brought us to safety, our daughter would still be alive. Now I have doubts that this baby will be born safely here in Pakistan. I know that our baby would be cured of this condition if we were in the UK, but we are stuck here, our lives on hold. This situation is extremely distressing."*

Further equity concerns also arose from the UK government's initial requirement that some at-risk Afghans secure their own accommodation in the UK before relocation (The Independent, 2023a). Given that many had fled Afghanistan with very limited resources, this requirement made it nearly impossible for them to arrange accommodation in the UK. The government later reversed this policy, acknowledging the difficulties it had created for eligible Afghans (The Independent, 2023d).

Overall, the evidence suggests that equity concerns in the Afghan schemes arose not only from formal eligibility rules, but also from the way these rules operated in practice, particularly for vulnerable groups facing delay, insecurity, and uneven access to protection.

4.5.1.4 Cost

The UK government allocated significant funding to support Afghan nationals arriving under these schemes. For ARAP, additional NHS funding of £3 million was made available to support healthcare access, alongside £5 million for local councils across England, Wales, and Scotland to help with accommodation costs. The ACRS was supported by a commitment of £200 million to cover the first year's costs of resettling Afghans in the UK (GOV.UK, 2021a).

Local councils supporting arrivals under these schemes received £20,520 per person over three years to support resettlement and integration costs (GOV.UK, 2021b). Additional funding included up to £4,500 per child for education, £850 for adult English-language provision, and £2,600 for healthcare under both schemes. There was also an increase in the Afghan Housing Costs Fund from £5 million to £17 million, alongside a further £20 million in flexible funding intended to support local authorities facing higher accommodation-related costs (GOV.UK, 2021b).

The structure of this funding indicates that the costs were distributed over multiple years rather than concentrated only at the point of arrival, reflecting a longer-term commitment to resettlement and integration. At the same time, the need for repeated increases in housing-related funding also suggests that accommodation pressures remained a significant financial challenge within the Afghan response.

4.5.1.5 Feasibility

The feasibility of these policies was an important aspect to consider, especially in light of the framework's guiding questions (Morestin, 2013, p. 12). This involved evaluating whether the necessary resources were available, whether the policies fell under the appropriate legal jurisdiction, whether the policy was a follow-up to a pilot programme, and how well it could be administered through existing mechanisms.

These policies required substantial resources for their implementation, including staff to process applications, infrastructure to support relocation, and funding for housing, healthcare, education, and integration support. The UK government's allocation of £200 million for the first year of the ACRS, alongside additional funding for healthcare, housing, and education support for Afghan arrivals, indicated substantial resource commitment to these schemes (GOV.UK, 2021a; GOV.UK, 2021b). However, the actual deployment of these resources encountered major operational challenges.

For instance, The Independent reported that resources for processing ARAP cases were notably depleted because staff had been diverted to handle the Ukrainian refugee crisis (The

Independent, 2022). This shift in personnel contributed to further delays in processing eligible Afghan cases and suggested that resources were not sufficient to support both responses equally. A parliamentary statement in March 2023 noted that the backlog had reached 66,000 unprocessed applications (UK Parliament, 2023). The Guardian further reported that more than 500 caseworkers were assigned to the Ukraine response, whereas fewer than ten caseworkers were assigned to Afghanistan-related cases (The Guardian, 2022a). These implementation pressures were also reflected in the very low number of arrivals through ACRS Pathway 2, which relocated only four Afghans between the Taliban takeover and the end of 2022 (UK Parliament, 2023).

Housing also posed a major feasibility challenge. Thousands of Afghans brought to the UK during the Kabul evacuation were later told they would be evicted from the Home Office hotels with only three months' notice and without confirmed long-term housing (The Independent, 2023c; The Standard, 2023).

In terms of legal and administrative structure, ARAP and ACRS were implemented within the UK government's legal framework, particularly through the Home Office and Ministry of Defence (GOV.UK, 2024e). They were not follow-up pilot programmes, but rather direct policy responses to the Afghanistan crisis (Home Office, 2022). Their delivery also depended on effective coordination among multiple actors, including government departments, local authorities, health services, and NGOs. Local councils, for example, received dedicated funding to support resettlement and integration, playing a significant role in the policy's execution (GOV.UK, 2021b).

Overall, while ARAP and ACRS were feasible in legal and institutional terms, their implementation was significantly constrained by staffing shortages, administrative backlogs, and housing pressures.

4.5.1.6 Acceptability

ARAP and ACRS were primarily designed for Afghan nationals who had worked with or for the UK government in Afghanistan, alongside their families, as well as other groups identified as

vulnerable. Key stakeholders included Afghan applicants and their families, the UK government, local authorities, non-governmental organisations, and international actors such as UNHCR. The schemes were generally presented as necessary interventions in response to an urgent protection crisis (GOV.UK, 2023b). This was reflected in statements by then-Prime Minister Boris Johnson, who said that Britain owed a "*debt of gratitude to all those who have worked with us to make Afghanistan a better place over the last 20 years and many of them, particularly women, are now in urgent need of our help*" (Aljazeera, 2021).

Stakeholders, including human rights organisations and refugee advocacy groups, emphasised the importance of providing comprehensive support for Afghan refugees, including housing, healthcare, education, and employment opportunities, in order to support integration in the UK (Europe Must Act, 2022). While many stakeholders welcomed the UK's stated commitment to Afghan refugees, concerns were repeatedly raised about the actual delivery of the schemes. Criticism focused particularly on the slow pace of relocation, the difficulties in securing permanent housing, and the exclusion of some groups who were perceived to be at risk (Library of Congress, 2023; The Independent, 2023c; The Standard, 2023; The Independent, 2022; The Standard, 2022; The Independent, 2021).

Some stakeholders also drew attention to the contrast between the UK's response to Afghan and Ukrainian refugees, arguing that the latter appeared to receive more favourable treatment in terms of speed, flexibility, and public mobilisation (Europe Must Act, 2022). For example, Big Issue reported that government data showed only 427 people had offered to host Afghans in their homes, whereas over 150,000 people expressed interest in accommodating Ukrainian refugees (Big Issue, 2022). Although these figures are not directly equivalent to formal acceptability measures, they do suggest differing levels of public engagement with the two crises.

The evolution of the Afghan schemes also indicated some responsiveness to emerging criticism. For instance, the reversal of the policy requiring at-risk Afghans to secure accommodation in the UK before relocation suggested that stakeholder concerns and practical difficulties were at least partly acknowledged by the government (Electronic Immigration Network, 2023).

Overall, while the principle of offering protection to Afghans was widely recognised as legitimate and necessary, the acceptability of ARAP and ACRS was weakened by sustained criticism of their implementation, especially in relation to speed, fairness, and practical delivery.

4.5.2 Ukraine Family Scheme and Homes for Ukraine Sponsorship Scheme

These policies were also assessed using the six dimensions of the policy analysis framework:

4.5.2.1 Effectiveness

By 29 February 2024, the UK had received a significant number of applications under the two Ukrainian schemes, totalling 331,000 applications, with 253,000 visas issued (GOV.UK, 2024h). The breakdown showed 108,000 (32.6%) applications for the Ukraine Family Scheme and 223,000 (67.4%) for the Homes for Ukraine Sponsorship Scheme. Of these, 72,000 (28.5%) visas were issued under the Ukraine Family Scheme and 181,000 (71.5%) under the Homes for Ukraine Sponsorship Scheme. Importantly, 200,900 (79.4%) of these visa holders arrived in the UK. This high arrival rate suggested that a large proportion of those granted visas were able to travel and access the relevant support (GOV.UK, 2024h).

The processing of applications and the issuance of visas fluctuated over time. Initially, there was a high volume of weekly visa grants for both schemes, with the Homes for Ukraine Sponsorship Scheme peaking at 14,315 grants in one week in April 2022. The Ukraine Family Scheme peaked earlier, with 9,236 grants in one week in March 2022 (GOV.UK, 2023f). By the end of June 2023, visa grants under the Family Scheme had fallen to below 100 per week. Similar trends were observed in arrivals. However, this decline also coincided with a substantial fall in the number of applications being made (GOV.UK, 2023f).

The Homes for Ukraine Sponsorship Scheme provided an immediate route to accommodation for many arrivals. However, reported challenges included sponsorship breakdowns, shortages of accommodation, and difficulty transitioning into longer-term housing (National Audit

Office, 2023). These issues were similar to what Afghan refugees faced under their resettlement schemes, where delays in securing permanent housing were a significant problem (The Standard, 2023).

Overall, the Ukrainian schemes enabled large-scale entry and arrival in the UK, but longer-term effectiveness was affected by housing instability and difficulties moving from initial accommodation arrangements into more sustainable settlement.

4.5.2.2 Unintended effects

A key unintended effect associated with the Ukrainian schemes was the shortage of stable long-term housing. While the government response included significant funding (more detail under the cost dimension) for local authorities to manage immediate accommodation and support needs, many Ukrainian refugees still experienced difficulty securing longer-term housing after their initial arrival. This resulted in an increase in homelessness cases among Ukrainian refugees, which emerged as a significant unintended negative effect requiring further attention from central government and local councils (Local Government Association, 2023; Sky News, 2023).

One Ukrainian refugee woman who became homeless nine months after arriving in the UK described her situation as follows: "*I'm just trying to move on and survive*" (Sky News, 2023). In addition, a survey by the Office for National Statistics (ONS) found that 45% of the 3,000 Ukrainian refugees reported barriers to accessing private rented accommodation, with lack of a guarantor or references being the most commonly reported obstacles (The Guardian, 2022b).

4.5.2.3 Equity

The equity dimension of the Ukrainian schemes presented a mixed picture. Arrivals data revealed a marked gender imbalance among those entering the UK. By the end of June 2023, women aged 18 to 64 accounted for 48% of arrivals, while children under the age of 18 accounted for 28%. Men aged 18 to 64 accounted for only 19% of the total arrivals (GOV.UK, 2023f). However, this pattern was likely shaped largely by martial law restrictions within

Ukraine, which limited the ability of many adult men to leave the country (The Washington Post, 2022).

The schemes appeared to provide important routes to safety, particularly for those with family connections or sponsors in the UK. However, the closure of the Ukraine Family Scheme in early 2024 raised further equity concerns, especially for those seeking to reunite with vulnerable family members in Ukraine (National Audit Office, 2023). As a member of No5 Barristers' Chambers, Blair, stated: "*This means that people in the UK with vulnerable and disabled family members may be left with no way to bring them to safety*" (The Guardian, 2024b).

Although the government stated that the termination of the Ukraine Family Scheme was intended to simplify the visa process and that the Homes for Ukraine Sponsorship Scheme could be used as an alternative route (The Guardian, 2024b), this alternative route was also associated with significant housing instability. Government data from 24 February 2022 to 31 January 2024 recorded over 6,000 Ukrainian households receiving homelessness support (GOV.UK, 2024d), likely reflecting sponsorship breakdowns and difficulties securing longer-term accommodation (UK in a Changing Europe, 2023).

The policies also granted Ukrainian refugees the right to work, which was potentially important for economic independence and integration (GOV.UK, 2024g; Home Office, 2024). However, finding employment that matched their skills and qualifications remained a challenge for many. This challenge was exacerbated by language barriers and the need for UK-specific certifications or qualifications (The Migration Observatory, 2023). A survey of 3,500 Ukrainian refugees conducted in April 2023 found that 54% did not meet the English-language requirement for available jobs, 37% could not find jobs that matched their skills, and 24% were working in different fields because their qualifications were not recognised in the UK (The Migration Observatory, 2023).

Overall, the evidence suggests that while the Ukrainian schemes provided important routes to refuge and initial support, equity issues remained in relation to family reunification, housing stability, and access to appropriate employment.

4.5.2.4 Cost

Similar to the support provided for Afghan refugees, the UK government allocated significant funding to support Ukrainian refugees, although the scale and structure of funding differed.

Since the inception of the Homes for Ukraine Sponsorship Scheme in March 2022, the UK government allocated over £1.24 billion to local councils to assist with the integration and support of Ukrainian arrivals, including a payment of £10,500 per refugee at the start of the scheme (GOV.UK, 2024c). This amount was later reduced to £5,900 per refugee in January 2023. Additional funding included £150 million for 2023/2024 and £120 million for 2024/2025 to support local authorities in helping Ukrainian refugees move into their own accommodation and reduce homelessness risks (GOV.UK, 2024c).

A further £500 million was allocated to the Local Authority Housing Fund to councils facing significant housing pressures associated with Ukrainian arrivals. This fund also included provisions for housing up to 500 Afghan families living in bridging hotels (GOV.UK, 2024c; GOV.UK, 2024b; GOV.UK, 2022).

Sponsors of Ukrainian refugees also received monthly "*thank you*" payments, initially set at £350 for the first 12 months and later increased to £500 thereafter (GOV.UK, 2024c). By March 2023, £100 million had been disbursed through these payments to sponsors (UK Parliament, 2024).

Overall, the Ukrainian schemes were associated with very substantial and highly visible public expenditure, particularly in relation to local authority support, sponsor payments, and housing provision. The scale of this funding reflected both the size of the response and the policy's reliance on sponsorship and local delivery mechanisms.

4.5.2.5 Feasibility

The analysis of the feasibility dimension drew upon the guiding questions outlined in the appendix section of the framework (Morestin, 2013). It focused on how effectively the UK

government could implement the Ukraine Family Scheme and Homes for Ukraine Sponsorship Scheme within its legal, administrative, and logistical structures (Morestin, 2013).

The large number of arrivals under these schemes (GOV.UK, 2024h) indicated substantial government capacity to respond to the Ukrainian crisis. The schemes operated within the UK's legal framework and provided routes of entry and support for Ukrainians with and without family links in the UK (Ashfords, 2022).

Their implementation also demonstrated administrative flexibility. For instance, between 15 March 2022 and 7 December 2023, applicants with biometric Ukrainian passports could apply online without the need to attend a visa centre to provide biometric information, which simplified and accelerated the process (GOV.UK, 2024i). After December 2023, however, applicants were again required to provide biometric information prior to visa issuance (GOV.UK, 2024f).

At the same time, the schemes faced notable logistical challenges, particularly in ensuring adequate housing and safeguarding for refugees. Safeguarding concerns emerged early on, with local authorities reporting difficulties managing checks, inspections, and support needs at scale. This led to instances of safeguarding issues, as well as cases of homelessness, when hosting arrangements broke down (Local Government Association, 2024; Forced Migration Review, 2023). Moreover, the reduction in financial support for new arrivals under the Homes for Ukraine Sponsorship Scheme in 2023, together with the absence of dedicated funding for the Ukraine Family Scheme, raised concerns about the long-term sustainability of the response (Forced Migration Review, 2023).

Overall, the Ukrainian schemes were feasible in terms of legal structure and initial administrative delivery, but their longer-term feasibility was challenged by safeguarding pressures, housing shortages, and concerns about sustainable funding.

4.5.2.6 Acceptability

The acceptability of the Ukraine Family Scheme and Homes for Ukraine Sponsorship Scheme appeared relatively high among stakeholders, as indicated by widespread public participation and the large number of applications and arrivals under the schemes.

The primary stakeholders included Ukrainians seeking refuge in the UK, the UK government, local authorities, sponsors, and host families. The scale of applications and acceptance rates suggested broad engagement with these schemes, while the sponsorship model in particular reflected a high level of public participation in hosting and supporting Ukrainian refugees (GOV.UK, 2023e).

The displacement resulting from the war in Ukraine was widely recognised as a humanitarian crisis requiring international action. The speed and scale of the UK's response suggested a particularly high level of political and public acceptability. Furthermore, the government's decision to waive application fees and the Immigration Health Surcharge under the schemes reduced formal barriers to entry and may have further strengthened their acceptability among applicants and supporting stakeholders (GOV.UK, 2024i). Adjustments to the application process, including biometric waivers and later visa extensions, also indicated an evolving approach intended to respond to applicants' needs effectively (GOV.UK, 2024i).

Overall, the Ukraine Family Scheme and Homes for Ukraine Sponsorship Scheme appeared to attract strong stakeholder support, particularly in the initial phase of the response, although this support existed alongside growing awareness of practical challenges affecting longer-term settlement.

4.5.3 Comparative analysis

The analysis of the UK's policies toward Afghan and Ukrainian forced migrants revealed a complex landscape marked by both achievements and challenges. Both the ARAP and ACRS, alongside the Ukraine Family Scheme and Homes for Ukraine Sponsorship Scheme, represented the UK's commitment to offering refuge to individuals fleeing conflict and persecution. At the same time, the policies reflected differing approaches shaped by political,

social, and logistical factors. The comparison across the six dimensions—effectiveness, unintended effects, equity, cost, feasibility, and acceptability—brought into focus important differences in how Afghan and Ukrainian forced migrants were supported. These differences can be interpreted in light of broader theoretical perspectives on identity, belonging, and group membership, which suggest that perceptions of familiarity, deservingness, and social proximity may shape policy responses (Lindbeck and Snower, 2001; Goffman, 1990; Tajfel and Turner, 1978).

While the same analytical dimensions were applied consistently across both case studies, the degree of direct comparability varied between them. In some areas, particularly effectiveness, cost, and feasibility, there was more directly comparable documentary evidence available across the Afghan and Ukrainian schemes, including official statistics, funding allocations, and implementation reports. In other areas, especially unintended effects, equity, and acceptability, the available evidence was more uneven and often relied on differently reported examples, stakeholder accounts, or media coverage. The comparative conclusions presented below should therefore be understood as stronger where similar forms of evidence were available across the two cases, and more cautious or indicative where the evidence base was less directly comparable.

Table 14 highlights the key comparative insights between the two sets of policies across the various dimensions. To make the basis of comparison more transparent, the table also indicates whether the available evidence was directly comparable, partially comparable, or more limited and indirect.

Table 14 | Summary comparison of UK policies for Afghan and Ukrainian forced migrants across the six analytical dimensions, indicating the comparability of evidence.

Dimension	Afghan policies (ARAP and ACRS)	Ukrainian policies (Family Scheme and Sponsorship Scheme)	Comparability of evidence
Effectiveness	Around 25,000 individuals relocated by December 2023, but substantial delays, stranded cases, and uneven progress across pathways were reported.	Over 250,000 visas issued with approximately 200,900 arrivals, alongside faster initial rollout and more flexible routes of entry.	**Partly directly comparable.** Admission, visa, and arrival figures allow comparison of scale and pace. However, the figures are not perfectly equivalent because Afghan data refer mainly to relocations and resettlement, whereas Ukrainian data include applications, visas issued, and arrivals.
Unintended effects	Narrow eligibility criteria, delays in third countries, and exclusion of some at-risk groups were reported.	Hosting breakdowns, homelessness risks, and longer-term accommodation pressures were reported.	**Limited/partly comparable.** Both policy responses produced unintended housing and accommodation-related pressures, but the evidence concerns different stages of the migration pathway. For Afghans, much of the evidence relates to pre-arrival or third-country delays; for Ukrainians, it relates more to post-arrival housing instability.
Equity	Documentary evidence suggested that women, children, ethnic or religious minorities, subcontracted staff, and some pregnant women were not always equally served by eligibility rules or implementation.	Women and children formed a large proportion of arrivals, but later policy changes and practical barriers affected some family reunification and settlement outcomes unevenly.	**Uneven evidence.** Ukrainian schemes had more visible demographic data on arrivals, while the Afghan evidence relied more heavily on policy eligibility rules, implementation delays, stakeholder concerns, and reported cases involving vulnerable groups. The comparison therefore supports conclusions about different forms of inequality, but not a precise quantitative comparison of which group experienced greater overall inequality.
Cost	Substantial government investment was reported, including ACRS funding and per-person integration support.	More extensive documented funding was reported, including local authority allocations, sponsor payments, and housing funds.	**Directly comparable to a moderate extent.** Both cases had documented public expenditure, although funding structures differed.
Feasibility	Staff shortages, backlog, diversion of resources to Ukrainian crisis, and	Faster operational rollout and digital processing improved delivery,	**Directly comparable.** Both cases had documentary evidence on administrative capacity and implementation constraints, allowing comparison of delivery capacity.

	administrative delays suggested major feasibility challenges.	though housing and safeguarding pressures created later challenges.	
Acceptability	More limited public participation and more sustained stakeholder criticism were reported.	Broader public and political support, including large-scale sponsorship, was reported.	**Partly comparable.** The evidence supports a cautious conclusion that the Ukrainian schemes attracted stronger public engagement, while the Afghan schemes drew more criticism around implementation and equity.

In terms of effectiveness, both sets of policies succeeded in enabling substantial numbers of people to reach safety in the UK. The Afghan schemes successfully relocated approximately 25,000 individuals (GOV.UK, 2024a), while the Ukrainian schemes issued over 250,000 visas and facilitated 200,900 arrivals (GOV.UK, 2024h). These figures are not perfectly equivalent because the Afghan data relate mainly to relocations and resettlement, whereas the Ukrainian data include visas issued and arrivals. Even allowing for this limitation, the available evidence suggests that the Ukrainian schemes appeared to be implemented more rapidly and on a greater scale, with the UK government mobilising its administrative capacity to process applications and issue visas at a much faster pace (The Independent, 2022). The evidence therefore supports a cautious conclusion that the Ukrainian response was operationally faster and broader in its early delivery, while the Afghan response was more constrained by delays and narrower routes of access.

The evidence on unintended effects was less directly comparable, but it still suggested notable differences in the kinds of problems each policy response generated. In the Afghan case, the restrictive criteria of ARAP and ACRS contributed to the exclusion of some at-risk groups, including Afghan journalists and individuals who had supported the UK's efforts indirectly, raising concerns about inclusivity and fairness (Library of Congress, 2023). For Afghans stranded in Pakistan and other third countries for extended periods, prolonged uncertainty and limited access to basic services, including education and adequate living conditions, appeared to create further hardship, particularly for vulnerable groups such as women, children, and ethnic minorities (Electronic Immigration Network, 2023). In the Ukrainian case, the schemes were more often associated with post-arrival unintended effects, particularly sponsorship breakdowns, homelessness risks, and difficulties securing longer-term housing (Local Government Association, 2023; Sky News, 2023). These findings suggest that both policy responses generated unintended consequences, but that they operated at different stages of the migration pathway: for Afghans, more strongly around exclusion and delayed access before arrival or resettlement, and for Ukrainians, more visibly around accommodation instability after arrival.

Equity was another dimension where important differences emerged, although the evidence was not equally comparable across the two cases. In the Afghan case, documentary evidence suggested that some vulnerable groups, including women, children, ethnic or religious minorities, and subcontracted workers, were not always equally served by the design or implementation of ARAP and ACRS. Narrow eligibility criteria and prolonged delays appeared to create particular difficulties for groups already facing heightened vulnerability. For example, reported cases involving pregnant Afghan women left without adequate healthcare while awaiting relocation in Pakistan drew attention to serious gaps in protection and access to essential support (The Guardian, 2023). In the Ukrainian case, the schemes enabled large numbers of women and children to arrive through the available routes, and these groups formed the majority of arrivals (GOV.UK, 2023f), although this pattern was also shaped by Ukraine's martial law restrictions on adult men leaving the country. Nonetheless, the evidence available for the two cases was not identical in form: for Afghanistan, concerns about equity were more often documented through eligibility rules, stakeholder accounts, and reported cases, whereas for Ukraine they were more visible through demographic data and later implementation issues. The comparison therefore supports the conclusion that both policy responses raised equity concerns, but in different ways and on the basis of differently reported evidence.

Cost was one of the more directly comparable dimensions, as both cases included documentary evidence on public expenditure and funding allocations. The UK's commitment to both Afghan and Ukrainian refugees was considerable, but the scale and distribution of resources differed across the two responses. The Afghan schemes received substantial government funding, including £200 million allocated for the first year of the ACRS alongside additional NHS and local authority support (GOV.UK, 2021a). However, the Ukrainian schemes were backed by more extensive funding, including over £1.24 billion in overall support (GOV.UK, 2024c). The available evidence suggested that the larger and more flexible funding associated with the Ukrainian schemes may have contributed to their faster operational rollout, while the Afghan schemes appeared more affected by resource strain and delay, particularly where resources were reported to have been redirected towards the Ukrainian crisis (The Independent, 2022).

Feasibility also showed clearer contrast between the two policy responses. Here, the evidence was more directly comparable because both cases included documentary material relating to administrative processes, delivery mechanisms, staffing, and implementation barriers. The Ukrainian schemes appeared to demonstrate stronger administrative feasibility, particularly through the use of online processes and simplified application routes for biometric passport holders (GOV.UK, 2024i). In contrast, the Afghan schemes faced deeper feasibility challenges, including staff shortages, backlogs, and evidence that resources and personnel were redirected towards the Ukraine response, contributing to slower delivery for Afghan applicants (The Independent, 2022). The comparison therefore supports the conclusion that, while both policy responses encountered feasibility challenges, the Afghan schemes appeared more constrained by administrative and operational limitations.

Acceptability also appeared to differ between the two cases, although this dimension relied more on stakeholder responses and public reporting than on uniform official indicators. The Ukrainian schemes appeared to receive broader public and political support, reflected in the large number of people registering to host Ukrainian refugees and the stronger visibility of community engagement (Big Issue, 2022). By contrast, the Afghan schemes appeared to attract less public participation and more sustained criticism in relation to delays, exclusions, and delivery problems. The available documentary evidence therefore supports a cautious conclusion that the Ukrainian response generated stronger public mobilisation, whereas the Afghan response was more frequently associated with dissatisfaction and critique.

4.6 Discussion

The UK's policies towards Afghan and Ukrainian forced migrants highlight the complexities and challenges involved in responding to large-scale humanitarian crises. Although both policy responses were framed around protection and support, they differed considerably in pace, eligibility, routes of access, resource allocation, and public engagement. These differences matter not only administratively, but also socially and psychologically, because resettlement policy can shape the post-migration conditions through which forced migrants rebuild their lives.

Importantly, this chapter did not directly measure individual mental health outcomes among Afghan or Ukrainian forced migrants. Rather, it examined how policy design and implementation shaped conditions that are already well-established in the wider literature as relevant to refugee and migrant mental health. These include legal uncertainty, access to safe housing, healthcare, employment, family reunification, social support, and experiences of stigma or discrimination (WHO, 2023; Hajak et al., 2021; Gleeson et al., 2020). The World Health Organization identifies community support, basic needs and security, stigma, trauma exposure, and access to services as key factors shaping refugee and migrant mental health, while Hynie's critical review similarly argues that post-migration social determinants are central to understanding refugee mental health outcomes (WHO, 2025; Hynie, 2018).

4.6.1 Social and structural dynamics

The comparative findings suggested important differences in the treatment of Afghan and Ukrainian forced migrants. These differences were partly operational, including variation in staffing, processing speed, application systems, funding, and accommodation arrangements. However, they also reflected broader social and structural dynamics that shaped who was able to access protection quickly, whose claims were processed efficiently, and which groups attracted greater public mobilisation.

The Social-Ecological Model (SEM) offers a useful framework for interpreting these findings because it allows policy effects to be understood across individual (micro), social (meso), and

structural (macro) levels (McLeroy et al., 1988; Bronfenbrenner, 1979). In this chapter, however, the micro-level was not assessed through direct measurement of individual attitudes, stigma, or psychological responses. Instead, micro-level implications were inferred cautiously from documentary evidence about how policies positioned different groups and from wider literature on how social perceptions can influence responses to forced migrants. For example, Iordache and Blanchard's study of European participants found more positive attitudes towards Ukrainian refugees than Afghan refugees, with attitudes towards Afghans more strongly associated with factors such as symbolic threat, intergroup anxiety, fear of terrorism, ethnicity, religiosity, political orientation, and region (Iordache and Blanchard, 2024).

At the meso-level, patterns of public and community response also differed sharply. The Homes for Ukraine Sponsorship Scheme created a visible mechanism through which members of the public could offer accommodation and support. This did not remove all risks, as later sponsorship breakdowns and homelessness showed, but it did create a formal route through which social support could be mobilised. By contrast, public hosting participation for Afghans was far more limited, and Afghan schemes relied more heavily on government-led hotel or bridging accommodation. This matters because social support emerged in earlier chapters of this thesis as a key protective factor for mental health, and the World Health Organization (WHO) also identifies community support and social inclusion as important determinants of refugee and migrant mental health (WHO, 2025).

A central interpretation of the findings is primarily at the macro-level. The Afghan schemes were narrower, slower, and more affected by backlogs, stranded cases, and resource pressures, whereas the Ukrainian schemes provided greater funding, broader and faster routes linked to family-based entry, and community sponsorship. These were not merely administrative differences. They shaped whether people could reach safety quickly, enter the welfare and healthcare system, reunite with relatives, and begin rebuilding daily life. Wider literature consistently shows that uncertain legal status, unstable or shared accommodation, family separation, discrimination, and barriers to healthcare are associated with poorer mental health among refugees and asylum seekers (WHO, 2023; Hajak et al., 2021; Gleeson et al., 2020).

Theories of stigma and in-group/out-group dynamics remain useful in interpreting these differences, but they should be applied cautiously (Goffman, 1990; Tajfel and Turner, 1978). The chapter's evidence does not permit a definitive causal claim that cultural proximity alone determined the differential response. What it does show is stronger public mobilisation for Ukrainians, wider sponsorship uptake, and a more flexible policy architecture. These patterns are consistent with the possibility that perceptions of familiarity, deservingness, and belonging shaped public and political responses, but they may also reflect other factors, including scheme design, pre-existing family links, geopolitical pressures, media coverage, and real-world constraints. For that reason, claims about micro-level stigma or belonging should be interpreted cautiously, as this chapter did not directly measure individual attitudes or experienced stigma, but instead inferred possible lived consequences from observable policy arrangements, stakeholder responses, and public participation.

4.6.2 Mental health implications

The mental health implications of the Afghan and Ukrainian schemes should be understood through the post-migration conditions that each policy appeared to have created or failed to resolve. A large body of literature consistently shows that forced migrants' mental health is shaped not only by pre-migration trauma, but also by legal insecurity, family separation, unstable housing, poor access to services, unemployment, discrimination, social support, and other post-migration living difficulties (WHO, 2023; Hajak et al., 2021; Blackmore et al., 2020; Gleeson et al., 2020; Bogic et al., 2015; Lindert et al., 2009; Steel et al., 2009). An updated European review likewise found that post-migration living stressors were associated with symptoms of depression, anxiety, and PTSD, with especially strong findings around family separation, social hardship, and residence security (Nowak et al., 2023a).

For Afghan forced migrants, the most important implication was prolonged uncertainty before arrival or onward transfer, which is widely associated with increased psychological distress among refugee populations (Miller and Rasmussen, 2017; Carswell et al., 2011). Many eligible or potentially eligible individuals spent extended periods in Pakistan or elsewhere while awaiting decisions, travel, or clarification of their cases. Research has shown that long-term uncertainty about one's legal status and resettlement prospects significantly increases

the risk of PTSD and depression among displaced individuals, particularly asylum seekers and refugees awaiting decisions on their status (Silove et al., 2017; Laban et al., 2004). Furthermore, mixed-methods evidence from Germany indicates that insecure legal status can negatively affect well-being and access to healthcare, while the Royal College of Psychiatrists has argued that immigration arrangements that prolong uncertainty and limit legal or healthcare access compound distress among people seeking sanctuary (Royal College of Psychiatrists, 2024; Nowak et al., 2023b). In this sense, delay was not only an administrative problem. It created a post-migration environment likely to intensify distress, particularly where people also faced expired documents, threat of return, and restricted access to healthcare and education.

The implications were particularly serious for Afghan women during the perinatal period. Chapter 3 showed that perinatal mental health among forced migrant women is shaped by trauma, inadequate support, and barriers to care. Reported cases involving Afghan women who were pregnant while awaiting relocation under ARAP and ACRS illustrated severe psychological distress, stemming from a lack of access to maternal healthcare, fears over the survival of their infants, and prolonged separation from family members (The Guardian, 2023). In that context, delayed relocation, lack of maternal healthcare, social isolation, and prolonged separation from family were likely to increase rather than reduce vulnerability.

Housing instability provides a second clear link between policy and mental health. For Ukrainians, faster rollout of visa schemes, the right to work, and the availability of sponsorship routes may have reduced some dimensions of uncertainty by enabling quicker entry and access to local support. However, the sponsorship model also created dependence on private hosting arrangements, and later evidence of sponsorship breakdowns, homelessness support, and barriers to private renting showed that housing instability became a major post-arrival stressor. Research has consistently demonstrated that housing instability is a significant predictor of poor mental health among refugees (Abdulrahman, 2025; Brake et al., 2023; Hanley et al., 2019). A recent systematic review found that poor living conditions adversely affect asylum seekers' mental health, with collective accommodation and detention being particularly harmful, while safer and more autonomous housing arrangements were associated with better mental health outcomes (Spira et al., 2025). WHO similarly identifies

housing, legal support, safety, and access to services as central determinants of refugee and migrant mental health (WHO, 2025; WHO, 2023). Housing therefore links the Afghan and Ukrainian cases in different ways. For Afghans, housing problems appeared through prolonged hotel accommodation, third-country confinement, and difficulties moving out of bridging hotels. For Ukrainians, housing problems appeared more strongly after arrival, through sponsorship breakdowns and difficulty securing private rented accommodation. In both cases, the policy issue is not whether shelter was provided, but whether accommodation was stable, safe, suitable, and connected to wider support.

Access to services also differed between the two cases. More secure and operational routes allowed many Ukrainians faster access to visas, arrival, work rights, benefits, and local support, whereas narrower Afghan routes often left applicants outside the UK or moving through slower and more restrictive pathways. In practical terms, legal routes and policy status shaped how quickly people could move from being at risk to being entitled to healthcare, welfare, schooling, and local support. Wider evidence shows that insecure legal status can negatively affect access to healthcare and well-being, and a recent scoping review of reviews found that barriers to refugee and asylum seeker mental healthcare are not only individual but also embedded in service structures and systems of entitlement (Dumke et al., 2024; Nowak et al., 2023b).

Employment is another route through which policy design matters for mental health. The Ukrainian schemes formally granted the right to work, but evidence in the Results showed that many Ukrainians faced barriers linked to English-language requirements, skills mismatch, and non-recognition of qualifications. Review evidence suggests that good-quality employment is generally beneficial for refugee health, particularly mental health, while employment barriers and underemployment may themselves become sources of stress (Lai et al., 2022). Recent UK government research on refugee mental health and employment also reported that secure housing, financial stability, employment, and social connections were closely linked with mental well-being, while unstable accommodation, uncertainty, and difficulty forming new connections contributed to stress and loneliness (GOV.UK, 2025b). The implication is not that employment alone resolves psychological distress, but that access to

work, language support, and recognition of prior skills are part of the wider settlement conditions through which mental health may improve or deteriorate.

Social support is particularly important because it emerged across this thesis. In this policy review, social support appeared as an important feature of policy design: it was facilitated through sponsorship and public hosting in the Ukrainian case, but appeared more limited and less formalised in the Afghan case. The overwhelming public support for Ukrainians, exemplified by the 150,000 individuals who volunteered to host refugees, contrasts sharply with the significantly lower public support for accommodating Afghan refugees (Big Issue, 2022). This suggests that social support should not be treated only as a personal resource. It is a policy-relevant determinant that can be strengthened or weakened through housing models, family reunification rules, local authority support, community sponsorship, language provision, and links with voluntary organisations. Research indicates that perceived discrimination and lack of community support are significant predictors of poor mental health outcomes among refugees, especially those from ethnic minority backgrounds (Szaflarski and Bauldry, 2019; Alemi et al., 2014). Evidence from immigrant and refugee health research likewise suggests that discrimination can act as a major stressor associated with increased psychological distress, including symptoms of depression and anxiety (Szaflarski and Bauldry, 2019). Afghan forced migrants may therefore have been more exposed to weaker public engagement, lower levels of organised community reception, and greater risk of social isolation, all of which are relevant to mental health vulnerability (Alemi et al., 2014).

4.6.3 Policy recommendations

The findings suggest that mental health should be integrated into resettlement policy design from the outset rather than treated as a later clinical issue after arrival. This does not mean that every forced migrant should be assumed to have a mental health disorder. Rather, it means that resettlement systems should be designed to reduce avoidable stressors and strengthen protective factors such as safety, stability, family unity, community connection, and access to culturally appropriate support.

First, mental health screening and psychosocial support should be embedded into arrival and integration pathways. The Centers for Disease Control and Prevention (CDC) refugee guidance emphasises that domestic mental health screening is intended to identify people who need support and referral, rather than to provide a stand-alone diagnosis, and WHO similarly recommends integrating mental health into general health and community services for refugees and migrants (WHO, 2025; CDC, 2024). In UK terms, this could be done through coordinated local authority and NHS pathways, with screening or well-being assessments offered shortly after arrival and repeated at key transition points, such as movement from temporary accommodation to permanent housing, family reunification, childbirth, or entry into employment support. Screening should be culturally safe, voluntary, and linked to referral pathways, not used as a gatekeeping tool. A scoping review by Magwood et al. (2022) found that delays in mental health diagnosis and care can reduce the impact of resettlement services and contribute to poorer long-term outcomes, while also highlighting the need for culturally and psychologically safe screening approaches (Magwood et al., 2022).

Second, housing stability should be treated as a mental health intervention as well as a logistical requirement. In practice, this would mean that the Home Office and the responsible housing/resettlement departments should work with local authorities before arrival to confirm whether accommodation is safe, suitable, and sustainable. Local authorities should be adequately funded to conduct checks, provide tenancy support, and arrange contingency accommodation where sponsorship or hotel arrangements break down. The review of community sponsorship in the UK emphasised the importance of clear government leadership, sustained local authority funding, safeguarding, pathways to permanence, employment support, language provision, mental health support, and monitoring and evaluation (Phillimore et al., 2025).

Third, employment support should be integrated with mental health and wider integration services. This could include English-language provision, recognition or bridging of overseas qualifications, job-matching, volunteering routes, and mental health-aware employment advice. Existing approaches such as the Refugee Employability Programme offer relevant lessons, although the evidence base should still be treated as emerging rather than definitive (GOV.UK, 2025a). Recent evaluation material on the Refugee Employability Programme

reported that housing insecurity affected service users' mental health and their ability to engage with employability and language support, reinforcing the need to address employment, housing, and mental health together rather than separately (GOV.UK, 2025a). Furthermore, there is strong evidence that employment is generally beneficial for refugee health, including mental health, and recent UK government analysis suggests that earlier mental health support may improve engagement with employment services (GOV.UK, 2025b; Lai et al., 2022).

Fourth, social support appeared consistently as a recurring protective factor across the thesis; therefore, it should be deliberately built into resettlement policy. In practice, this could be achieved by requiring each resettled household to be linked shortly after arrival with a named local authority or voluntary-sector coordinator who can assess social support needs and connect individuals with peer mentors, diaspora and refugee-led organisations, English-language classes, schools, GP registration, employment services, faith or community groups, and mental health support where needed. Local authorities could also maintain trained volunteer and community support networks, with safeguarding and trauma-informed guidance, so that support is available consistently across schemes rather than depending on the level of public sympathy generated by a particular crisis. This is important because the Afghan and Ukrainian comparison showed that public mobilisation can vary substantially between groups and over time. A more equitable model would therefore create a minimum social support offer across all resettlement routes, including peer mentoring, family reunion support, links with community organisations, and clear referral pathways into health and mental health services. This aligns with UNHCR guidance emphasising the role of social connections in refugee integration, NICE guidance on using trained community members to improve health and well-being, evidence from the UK Community Sponsorship evaluation showing that volunteers can support refugees with English learning, GP registration, benefits, education, and employment, and WHO recommendations to promote community support, social inclusion, and access to service entitlements for refugees and migrants (Phillimore et al., 2025; WHO, 2025; UNHCR, 2024b; NICE, 2016).

Fifth, reducing uncertainty should be another policy priority. Faster case processing, adequate casework staffing, transparent eligibility decisions, and timely access to healthcare would not only improve administration but also reduce conditions associated with distress. The evidence is especially strong that insecure status and prolonged uncertainty matter for well-being and access to care (Royal College of Psychiatrists, 2024; Nowak et al., 2023b). For the Afghan schemes in particular, this means avoiding prolonged stays in third countries without stable documentation, healthcare access, or clear timelines.

Finally, policy recommendations should be evaluated rather than assumed to work. Future schemes should include routine monitoring of housing stability, access to healthcare, employment outcomes, English-language provision, family reunification, social support, and mental health referrals. This would make it possible to assess whether policy changes actually reduce post-migration stressors and improve integration outcomes. Without such monitoring, governments risk repeating the same pattern observed in this analysis: rapid policy creation during crisis, followed by uneven evidence on longer-term consequences.

4.6.4 Researcher reflexivity and positionality

In reflecting on these findings, it is essential to acknowledge my positionality as an Afghan and a forced migrant. This personal connection inevitably shapes my perspective, potentially heightening sensitivity to the challenges faced by Afghan refugees and deepening my critique of policy shortcomings, particularly in relation to delay, exclusion, uncertainty, and perceived inequity. While lived experience can provide valuable insights, particularly in identifying structural inequalities that might be overlooked by outsiders, it also requires careful reflexivity to ensure that conclusions remain firmly grounded in systematic evidence rather than personal experience alone (Delve and Limpaecher, 2022). Throughout this thesis, I have striven to balance empathy with academic objectivity, critically engaging with data and existing scholarship to present a rigorous and nuanced analysis. A more in-depth discussion of how my positionality influenced the research process will be explored in the Reflective Chapter.

4.7 Conclusion

The UK's responses to Afghan and Ukrainian forced migrants demonstrate that resettlement policy is not only about admission but also about the post-migration conditions through which people attempt to rebuild their lives. Although both policy responses were framed around protection and support, they differed substantially in pace, eligibility, routes of access, resource allocation, and public mobilisation. These differences mattered because they shaped exposure to legal uncertainty, housing instability, barriers to services, employment challenges, and uneven social support, all of which are known in the wider literature to influence refugee and migrant mental health.

The findings therefore suggest that future resettlement policy should move beyond a narrow focus on immediate refuge and place greater emphasis on long-term integration and stability. In practical terms, this means treating housing, healthcare access, employment support, family unity, and social support as core components of resettlement rather than secondary concerns. More equitable and sustainable policy design, supported by adequate funding, timely administration, and culturally responsive support systems, is likely to be important not only for integration outcomes but also for reducing avoidable post-migration stressors that may undermine mental well-being among forced migrants.

5 Discussion Chapter: Integration of Findings and Implications for Future Research

5.1 Chapter overview

This final Discussion chapter draws together the multiple strands of analysis developed throughout the thesis to present a cohesive understanding of migrant mental health disparities. While the earlier chapters approached this topic through distinct methodological and conceptual lenses, this chapter synthesises those insights to examine how individual, social, and structural influences interact to shape mental health outcomes among migrants.

The thesis began with a core aim: to investigate whether and why migrants, and forced migrants in particular, are at increased risk of poor mental health outcomes, and to examine how these vulnerabilities are produced and maintained across multiple levels of experience. Informed by the Social-Ecological Model (SEM) introduced in the Foundational Chapter (Chapter 1), the thesis has taken a multilevel approach, exploring micro-level (individual), meso-level (interpersonal and social), and macro-level (policy and structural) factors.

Chapters 2 to 4 addressed specific research questions through different but complementary forms of evidence. The Secondary Data Analysis (Chapter 2) provided population-level evidence on how migration status is associated with depression and depression severity across Europe, highlighting key predictors such as health status, affordability of care, and social support. The Scoping Review (Chapter 3) focused on perinatal mental health among forced migrant women, showing how trauma, stigma, barriers to care, and reduced support converge within a particularly vulnerable subgroup. The Policy Review (Chapter 4) then examined macro-level policy frameworks, comparing the UK's resettlement responses to Afghan and Ukrainian forced migrants and considering how differences in policy design shaped post-migration conditions relevant to mental health.

In this chapter, the findings are synthesised through the SEM to show that migrant mental health disparities are not simply the product of individual vulnerability, but the cumulative outcome of layered and interacting forms of disadvantage. Across the thesis, recurring themes such as stigma, social support, uncertainty, access to care, affordability, legal status, and related structural or cultural barriers emerged in different forms and at different levels. The

chapter proceeds by integrating findings across the SEM levels, positioning them within the wider academic literature, reflecting on the thesis aims and research questions, evaluating strengths and limitations, and identifying future directions for research, policy, and practice. Through this synthesis, the chapter reaffirms the thesis's central argument: that migrant mental health disparities are produced not in isolation, but through the interaction of micro-, meso-, and macro-level forces, and therefore require equally multilevel, equity-driven responses.

5.2 Integration of findings

The findings across this thesis consistently point to the need for a multilevel understanding of migrant mental health: one that acknowledges how mental health outcomes are shaped by the interaction of individual (micro), social (meso), and structural (macro) influences. The Social-Ecological Model (SEM) provides a useful framework for understanding these relationships, but the thesis also suggests that the boundaries between the micro, meso, and macro levels are more permeable than they may first appear. What emerges most clearly from the combined findings is not simply that different levels matter, but that they are mutually reinforcing: structural conditions shape social environments, social environments shape the meaning and availability of support, and these forces are then experienced and embodied at the individual level.

Across the thesis, each chapter illuminated a different part of this wider process. The Secondary Data Analysis quantified disparities in depression-related outcomes and identified important predictors across migrant and home populations. The Scoping Review showed how these vulnerabilities become particularly acute among forced migrant women during the perinatal period. The Policy Review then demonstrated how resettlement systems and policy design can shape the post-migration conditions through which migrants access housing, healthcare, employment, legal stability, and social support. Taken together, these findings suggest that migrant mental health disparities are not produced by individual vulnerability alone, but by layered processes of stigma, marginalisation, and exclusion that operate across the multiple levels of migrants' lives.

Micro-level (individual) influences

At the micro-level, the Secondary Data Analysis showed that migrants faced an elevated risk of depression relative to home populations, and that this pattern also extended across depression severity levels. Individual predictors such as poor self-perceived health, prior history of depression, younger age, and socioeconomic disadvantage were all associated with poorer outcomes. On the surface, these may appear to be personal-level risk factors. However, when interpreted alongside the wider thesis, they cannot be understood simply as isolated

individual characteristics. Rather, they reflect the ways in which broader inequalities become embodied as individual distress.

The Scoping Review echoed these concerns in a focused subgroup: forced migrant women during the perinatal period. These women faced an exceptionally high burden of depression, anxiety, and PTSD, with prevalence estimates in some studies exceeding 50%. The review showed that these outcomes were closely linked with trauma histories, interpersonal violence, social isolation, and fear of judgement or misunderstanding. The importance of this finding lies not only in identifying perinatal forced migrant women as a particularly vulnerable subgroup, but also in showing more clearly how vulnerability is produced. Pregnancy and the postpartum period are already times of heightened support needs for many women, yet for forced migrant women these needs may be intensified by displacement, insecure status, disrupted family networks, social isolation, and barriers to care. In that sense, the perinatal case does not sit outside the wider thesis argument; it sharpens it.

Taken together, these chapters suggest that micro-level mental health risk among migrants is not reducible to either pre-migration trauma or post-migration adversity alone. Instead, distress emerges through the interactions of both. Pre-migration experiences may create vulnerability, but post-migration conditions often determine whether that vulnerability is alleviated, sustained, or intensified. Fear of deportation, uncertainty about legal status, poor access to healthcare, language barriers, unaffordable services, and internalised stigma all illustrate that the individual level is not merely about symptoms or diagnoses. It is also about the everyday psychological effort of living under conditions of instability, restricted support, and unequal recognition. One of the clearest insights of the thesis is therefore that what appears as “individual vulnerability” is often the lived expression of layered social and structural disadvantage rather than a purely personal problem.

Meso-level (social and interpersonal) influences

At the meso-level, social relationships, stigma, and community-level support, or the lack of it, played a pivotal role. The Secondary Data Analysis showed that social support was a significant protective factor, particularly among settled migrant groups. However, its protective role was

not uniform across all migrant groups. For some, including non-settled migrants, a greater number of social contacts did not appear to reduce the risk of depression. This suggests that the quality of social support may matter more than the quantity, as some groups of migrants may not always experience their networks as trustworthy or emotionally accessible. The thesis therefore moves beyond a simple assumption that "more support is always better" and instead points to the importance of support quality, reciprocity, and perceived adequacy.

The Scoping Review reinforced this pattern. Across the perinatal literature, perceived support often appeared more important than the amount of support received. At the same time, the review showed that social environments can be ambivalent rather than uniformly protective. Families and communities may provide practical and emotional support, but they can also reproduce stigma, silence, and fear. Women described shame around mental distress, fear of being labelled, and anxiety that interpreters might breach confidentiality or that personal disclosures might become community gossip. These findings are important because they complicate any simplistic distinction between "social support" and "social barrier". In practice, the same social world that can offer comfort, belonging, and care can also produce judgement, shame, and mistrust.

The Policy Review extended this insight by showing that meso-level support is also shaped by policy design. In the Ukrainian case, sponsorship schemes created a visible and formal route through which members of the public could offer accommodation and support. Although later sponsorship breakdowns showed that such support could be fragile, the policy itself still created a mechanism through which community mobilisation could occur. In the Afghan case, by contrast, support was less publicly mobilised and more weakly institutionalised, with greater reliance on state-led hotel or bridging accommodation. This matters because it shows that meso-level dynamics are partly organised from above. Family reunion routes, sponsorship design, housing pathways, local authority support, and the role of voluntary or refugee-led organisations all help shape whether migrants encounter social inclusion or exclusion after arrival.

Taken together, these findings suggest that meso-level influences operate as a crucial bridge between structural conditions and individual well-being. Social support, community

reception, stigma, and trust are not secondary to mental health inequalities; they are among the core mechanisms through which such inequalities are produced and either softened or reinforced. This is one of the clearest integrative contributions of the thesis. Migrant mental health is shaped not only by what migrants have experienced, but by whether they are able to find reliable, culturally safe, and socially meaningful relationships after displacement.

Macro-level (structural and policy) influences

At the macro-level, the thesis shows that policy and institutional arrangements are not merely background context but active determinants of mental health-relevant conditions. The Policy Review demonstrated that the UK's responses to Afghan and Ukrainian forced migrants differed substantially in pace, eligibility, routes of access, public participation, and resource allocation. The Ukrainian response was comparatively rapid, well-resourced, and widely supported by the public. The Afghan response was narrower, slower, and more burdened by delay, uncertainty, and resource constraint. These differences matter because they shaped whether people could reach safety quickly, secure housing, reunite with family, access services, and begin rebuilding ordinary daily life. This macro-level finding does not mean that the Policy Review directly measured mental health outcomes. Rather, it shows how resettlement policy can structure the conditions through which mental health risks are intensified or reduced.

The Secondary Data Analysis also identified macro-level processes more directly. One of its clearest findings was the importance of affordability barriers to healthcare and mental health care, which significantly predicted both the presence and severity of depression. This points to structural exclusion: for many migrants, access to care depends more on economic capital than clinical need. This pattern illustrates how structural exclusion can become clinically relevant: when people cannot afford care, cannot understand entitlement rules, or cannot navigate services, their mental health needs may remain unrecognised or untreated.

The Policy Review extended this point by showing that migration status and policy route can shape access to services in ways that matter for mental health. Afghan applicants awaiting relocation in third countries had limited access to UK-based healthcare, housing, education,

and integration support, despite often having a recognised connection to UK protection commitments. Ukrainian arrivals, by contrast, had faster access to visas, arrival routes, and local authority support. Thus, the thesis shows that access to services is not simply a matter of individual willingness to seek help; it is structured by legal status, eligibility rules, policy route, and the administrative capacity of the host state.

Macro-level exclusion also operates through data infrastructure and research gaps. The Secondary Data Analysis highlighted the absence of disaggregated data on forced versus voluntary migrants, limiting the visibility of the most vulnerable groups in policy and service planning. The Scoping Review complements this picture by showing that many of the vulnerabilities observed at the individual level were not matched by adequately responsive systems of care. Despite the high prevalence of depression, anxiety, PTSD, trauma exposure, and stigma-related barriers identified among forced migrant women, the review found very limited evidence of intervention studies and limited policy attention to perinatal-specific needs. This lack of data reflects a wider structural problem: when migrant groups are treated as broad and undifferentiated categories, important differences in trauma exposure, legal uncertainty, gendered risk, perinatal status, and access to services become hidden. Migrants who are not measured are, in effect, not seen, making it more difficult to advocate for targeted mental health support.

Cross-cutting themes and intersections

Across all levels of the SEM, several cross-cutting dynamics emerged that help explain how disadvantage can accumulate and deepen over time. Migrant mental health risks are rarely the outcome of a single factor. Instead, they represent a pattern of cumulative disadvantage unfolding across personal histories, social environments, and structural systems (Qiu et al., 2023). A migrant woman, for instance, may enter the host country carrying the burden of trauma from war or displacement. Once resettled, she may encounter cultural stigma around mental health, mistrust within her community, and fear of judgement, inhibiting help-seeking. At the same time, she may be excluded from affordable or accessible services due to restrictive immigration policy or unclear eligibility. These layered stressors (i.e., individual, social, and

structural) not only coexist but can interact in ways that compound vulnerability and sustain ongoing cycles of exclusion and distress.

A key theme that emerged across this thesis was the role of stigma, particularly in relation to mental health, motherhood, and migration status. This operated at multiple levels simultaneously. At the individual level, it appeared in the internalisation of shame and fear around mental health disclosure. At the social level, it appeared in worries about judgement, gossip, confidentiality breaches, and being seen as weak or unstable. At the structural level, it appeared in broader public and policy discourses that cast certain groups of migrants as outsiders or less deserving of support. The thesis therefore suggests that stigma should not be understood narrowly as a personal attitude or social prejudice alone. It is also institutional, shaping how migrants are recognised, categorised, and responded to within systems of care and policy.

A second major cross-cutting theme was social support. Across the thesis, social support emerged not simply as a background protective factor, but as a central mechanism through which mental health inequalities are mediated. Chapter 2 showed that support mattered for depression-related outcomes, but not equally across all migrant groups. Chapter 3 showed that perceived adequacy of support mattered deeply for perinatal mental health and that support could be compromised by stigma and mistrust. Chapter 4 showed that policy design could either facilitate or constrain support through sponsorship, family reunion, housing arrangements, and community mobilisation. The thesis therefore adds an important interpretive point: social support is not only something migrants either “have” or “lack”; it is also something that institutions can enable, erode, or distribute unevenly.

A third cross-cutting theme was uncertainty. This appeared in different forms across the thesis: uncertainty around legal status, resettlement pathways, service access, housing, employment, and interpretation of rights. Uncertainty mattered psychologically because it made planning, trust, and future orientation more difficult. It also mattered structurally because it was often produced by institutional arrangements rather than simply by the fact of migration itself. This helps explain why distress among migrants should not be understood as

a natural or inevitable consequence of displacement alone. In many cases, it is prolonged or intensified by the way post-migration systems are organised.

The thesis also points to the importance of intersectionality in understanding how these processes combine. Intersectionality, a concept introduced by Crenshaw (1989), is useful here because it helps explain how overlapping social identities, such as gender, race, class, migration status, and legal insecurity, interact to shape experiences of disadvantage or support (Crenshaw, 1989). The thesis shows that gender, migration status, legal insecurity, ethnicity, and reproductive status can intersect in ways that magnify risk. For instance, the Policy Review showed that Afghan women, particularly during pregnancy, faced overlapping disadvantages, including restricted healthcare access, prolonged visa delays, and limited public support, while Ukrainian women were more likely to benefit from faster entry routes and stronger societal mobilisation. Their vulnerability was therefore not simply additive, but shaped by how institutions responded, or failed to respond, to different combinations of identity, status, and perceived deservingness. While existing research often focuses on single risk factors, this analysis highlights the value of looking at how different vulnerabilities can come together within larger social and structural systems of inequality.

These patterns are further reinforced through institutionalised notions of belonging and exclusion. As shown in the Policy Review, public and political responses to forced migration were not determined solely by humanitarian need, but may have also been mediated by perceived cultural proximity. Ukrainian refugees were rapidly accepted and widely supported in the UK, framed through political discourse and media narratives as familiar, European, and deserving (Munandar and Akmal, 2023). In contrast, Afghans facing similarly severe displacement encountered greater barriers to resettlement. These dynamics mirror broader global trends in which the allocation of empathy, resources, and support is shaped by who is deemed to belong (Ajana et al., 2024). This process of selective inclusion has real consequences because it shapes who is included and who is excluded.

Together, these themes reveal that migrant mental health cannot be fully understood or effectively addressed by examining isolated variables or single-level explanations. The central integrative argument of the thesis is that migrant mental health disparities are produced

through layered and interacting processes operating across individual, social, and structural domains. Migrants are not only marginalised by institutions or excluded from services, but are also often stigmatised in ways that undermine their sense of belonging. The value of the SEM in this thesis is therefore not only that it helps organise the findings, but that it makes visible how these forms of disadvantage overlap, accumulate, and reinforce one another. The implication is that equally layered responses are required: responses that address immediate clinical need, strengthen trusted social support, and challenge the structural conditions through which exclusion and poor mental health are reproduced.

To synthesise the thesis's key findings and better illustrate how multilevel determinants interact, **Table 15** presents an integrated SEM mapping. The table maps the core factors identified at each level of the SEM, the sources of evidence across chapters, and the mechanisms through which these factors shape mental health outcomes. It also outlines practical implications to inform more responsive, equitable, and culturally sensitive mental health interventions.

Table 15 | Integrated SEM framework mapping determinants, evidence, mechanisms, and implications.

SEM level	Key determinants/themes	Evidence source(s)	Cross-study pattern	Mechanism and implication
Micro	Younger age	Secondary Data Analysis	Higher odds of depression in younger adults	Younger adults may face greater stress. Services should consider early intervention and support for this age group.
	Self-rated health, multimorbidity, prior depression	Secondary Data Analysis	Strongest predictors of depression and severity	Poor physical health and prior mental illness compound risk. Holistic care must integrate mental and physical health services.
	Socioeconomic disadvantage, employment status, and student status	Secondary Data Analysis	Socioeconomic disadvantage was associated with poorer outcomes	Economic insecurity, study-related pressures, and uncertain future prospects may compound distress. Mental health support should be integrated into employment, education, and welfare pathways.
	Trauma exposure and interpersonal violence in the perinatal period	Scoping Review	High rates of depression, anxiety, PTSD in forced migrant women	Past trauma plus perinatal stress increases vulnerability. Trauma-informed, culturally sensitive perinatal care is essential.
	Internalised stigma and fear of labelling	Scoping Review	Reluctance to disclose or seek help	Fear of being judged deters help-seeking. Services must create safe, confidential, and stigma-aware environments.
Meso	Social support (quality, perceived adequacy, and trust)	Secondary Data Analysis; Scoping Review; Policy Review	Perceived adequacy and trust in support appeared more important than quantity alone	Trusted, consistent support networks buffer stress. Peer support, family reunion, and community connection can strengthen mental health.
	Language barriers and interpreter mistrust	Scoping Review	Concerns over privacy and confidentiality	Concerns about interpreters breaching confidentiality can block engagement. Trusted, gender-sensitive interpreting services are needed.
	Community stigma, judgement, and mistrust	Scoping Review; Policy Review	Social environments could be both supportive and restrictive, with stigma undermining help-seeking and trust	Mental health support must address not only service access but also the social contexts in which disclosure and help-seeking occur.
	Community reception and public mobilisation	Policy Review	Stronger community mobilisation for Ukrainians than Afghans	Positive reception can support daily inclusion. Community-based outreach can reduce isolation for stigmatised groups.

Macro	Legal status uncertainty, slow processing	Policy Review	Long delays for Afghans; faster routes for Ukrainians	Delays and unclear pathways can prolong uncertainty and psychological strain. Regular updates and transparency in visa processes can reduce avoidable stress.
	Access to healthcare and services shaped by legal status, policy route, and affordability	Secondary Data Analysis; Policy Review	Access to care depended not only on need, but on affordability, eligibility, policy route, and administrative capacity	Mental health needs may remain unmet when people cannot afford care, do not understand entitlements, or are excluded by legal and administrative barriers. Policies should reduce cost barriers, clarify entitlements, and ensure timely access to care.
	Housing insecurity	Policy Review	Homelessness risk post-sponsorship for Ukrainians; hotel and third-country accommodation pressures for Afghans	Insecure or unsuitable housing can increase stress and undermine recovery. Long-term, stable, and safe accommodation should be treated as mental-health-relevant infrastructure.
	Policy design, eligibility rules, administrative capacity, and resource allocation	Policy Review	Afghan schemes were more affected by narrow eligibility, delays, staffing pressures, and less visible public mobilisation; Ukrainian schemes had faster and broader routes	Policy design shapes who reaches safety, who accesses services, and who waits. Crisis planning should include equitable routes, sufficient staffing, and safeguards against less visible groups being deprioritised.
	Lack of detailed data and disaggregation	Secondary Data Analysis; Scoping Review	Limited breakdown of migrant subtypes, legal status, perinatal needs, and mental health outcomes	Broad migrant categories mask disparities. More granular data distinguishing forced versus voluntary migration, legal status, perinatal status, and a broader range of mental health indicators is essential for designing targeted, evidence-based interventions.

5.3 Positioning within the existing literature

5.3.1 Alignment with previous research

The thesis aligns strongly with a substantial body of literature showing that migrants, refugees, and asylum seekers face heightened vulnerability to poor mental health outcomes, including depression, anxiety, and post-traumatic stress disorder (WHO, 2023; Stevenson et al., 2023; Blackmore et al., 2020; Henkelmann et al., 2020; Silove et al., 2017; Lindert et al., 2009). The broader evidence base has consistently shown that these inequalities are shaped not only by trauma exposure before migration, but also by post-migration determinants such as legal insecurity, social exclusion, stigma, unstable housing, and barriers to care (Nowak et al., 2023a; WHO, 2023). For example, the WHO Global Evidence Review on refugee and migrant mental health concluded that risk and protective factors operate across individual, family, community, and national and government levels, including community support, basic needs and security, stigma, trauma exposure, and the ability to navigate health and other systems (WHO, 2023). Similarly, Nowak et al.'s systematic review of adult refugees in Europe found that post-migration living stressors were associated with symptoms of depression, anxiety, and PTSD (Nowak et al., 2023a).

This thesis fits within that literature but also helps clarify why such risks should not be interpreted as the inevitable psychological consequence of migration itself. Across the chapters, mental health inequalities were repeatedly linked to conditions that occur after migration: affordability of care, poor housing, weak or mistrusted social support, uncertainty, stigma, and uneven policy support. This matters because it shifts the interpretation away from a deficit model in which migrants are treated as inherently vulnerable, and towards a structural and social explanation in which vulnerability is produced, sustained, or reduced by the environments into which people are received. The thesis therefore supports the post-migration stressor literature, but also shows that these stressors do not operate as isolated variables; they cluster across different levels of the SEM.

The Secondary Data Analysis fits closely with prior work showing that socioeconomic disadvantage, poor physical health, and reduced social support are strongly associated with

poorer mental health among migrants and refugees (Rada et al., 2022; Snoubar and Zengin, 2022; Kemmak et al., 2021). The findings of this thesis support the now well-established view that migrant mental health is not adequately explained by migration status alone, but by the unequal distribution of social determinants after arrival. The fact that affordability of healthcare and mental health care emerged as important predictors in the Secondary Data Analysis is also consistent with wider research showing that access to services is shaped not simply by need, but by entitlement, navigability, financial protection, and administrative inclusion (Nowak et al., 2023a). Dumke et al.'s (2024) scoping review of reviews similarly found that barriers to mental healthcare for refugees and asylum seekers in high-income countries operate across the care pathway, including both demand-side barriers, such as stigma and lack of awareness, and supply-side barriers, such as language, cost, service navigation, and system-level access problems (Dumke et al., 2024). This strengthens the interpretation of the Secondary Data Analysis findings: affordability is not merely an individual financial problem, but one part of a wider structure of access and exclusion.

The thesis also aligns with previous literature on migrant and refugee women's perinatal mental health. A recent global review reported that migrant women experience a substantial burden of perinatal common mental health disorders, including high levels of depression, anxiety, and PTSD, while earlier systematic reviews have likewise shown elevated rates of antenatal and postnatal mental health problems among migrant women (Stevenson et al., 2023; Anderson et al., 2017; Fellmeth et al., 2017; Falah-Hassani et al., 2015). The Scoping Review in this thesis is consistent with that broader pattern, particularly in showing high prevalence of depression, anxiety, and PTSD among forced migrant women in the perinatal period. It also aligns with evidence that barriers to care are shaped not only by language, but by stigma, fear of disclosure, confidentiality concerns, and difficulties establishing trust in healthcare systems. Recent work on help-seeking and perinatal mental healthcare among refugee and asylum-seeking women has similarly highlighted stigma, low mental health literacy, language barriers, interpreter concerns, and system-level obstacles as persistent barriers to access (Markey et al., 2024; Byrow et al., 2020; Sambrook Smith et al., 2019). However, the thesis also extends this literature by situating perinatal mental health within a broader multilevel account. The perinatal period is not treated only as a clinical window of

risk, but as a point where forced migration, gender, motherhood, legal insecurity, language barriers, social isolation, and service exclusion converge.

The Policy Review also resonates with a growing literature showing that responses to refugees are mediated by politics, media discourse, and public attitudes rather than humanitarian need alone (Higashijima and Woo, 2024; McCann et al., 2023; Mulvey, 2010). A recent study found that European participants expressed more positive attitudes toward Ukrainian refugees than Afghan refugees, with attitudes towards Afghans more strongly shaped by symbolic threat, fear of terrorism, intergroup anxiety, religiosity, political orientation, and region (Iordache and Blanchard, 2024). De Coninck (2023) similarly argues that the reception of Ukrainian and Afghan refugees in Europe and North America reflects a "refugee paradox", in which the public may feel greater closeness or moral responsibility towards some groups than others (De Coninck, 2023, p. 578). Ajana and colleagues' (2024) analysis of UK media coverage also found discursive differences in framing of Ukrainian, Afghan, and Syrian refugee crises, with Ukrainian displacement more often associated with sympathetic and humanitarian framing, while resource concerns were more visible in the coverage of Afghan and Syrian crises (Ajana et al., 2024). The differential treatment identified in the Policy Review therefore sits within a wider pattern already recognised in the literature: some refugee groups are represented, received, and supported more favourably than others.

At the same time, the thesis does not simply replicate these bodies of literature. Its value lies partly in showing how findings that are often discussed separately in previous work, such as trauma, stigma, social support, affordability, entitlements, data gaps, and differential policy treatment, can be understood as connected parts of the same multilevel process. In that sense, the thesis aligns with previous research, but it also helps to integrate it. Its contribution therefore lies not only in confirming known determinants, but in showing how these determinants cluster and interact across the individual, social, and structural levels of migrant experience.

5.3.2 Unique contributions and added value

While much of this thesis supports existing literature, it also makes several distinctive contributions by bridging empirical research and theoretical perspectives in a distinctly multilevel structure. Its most important contribution is not that it identifies a wholly new risk factor, but that it demonstrates more clearly how migrant mental health disparities are produced through the interaction of micro-, meso-, and macro-level processes. Many existing studies focus on one domain in relative isolation, for instance, clinical symptoms, service barriers, or policy discourse. By contrast, this thesis brings together population-level analysis, subgroup-specific synthesis, and policy comparison within a single multilevel framework. This makes it possible to show not only that migrants face poorer mental health outcomes, but how these outcomes are linked to layered systems of disadvantage across everyday life, social relationships, and institutional arrangements. In doing so, the integrated approach here demonstrates how individual well-being depends on the alignment or misalignment of multiple layers of support or, conversely, multiple layers of obstruction.

The first contribution is the thesis's integrated multilevel account of migrant mental health disparities. The Secondary Data Analysis showed that depression-related outcomes varied by migration status and were strongly associated with health, affordability, socioeconomic position, and social support. The Scoping Review showed how these determinants become particularly acute among forced migrant women during the perinatal period. The Policy Review then showed how resettlement policies can structure access to housing, healthcare, legal certainty, employment, and social support. Taken together, these findings offer more than a set of separate results. They demonstrate how mental health disparities are produced through interactions between individual vulnerability, social relationships, and structural conditions. This is the central added value of the thesis: it transforms a collection of findings into an explanatory account of how stigma, marginalisation, and exclusion become linked across levels.

Second, the Scoping Review contributes by explicitly differentiating forced migrant women from broader migrant populations. Many previous reviews combine voluntary migrants, economic migrants, refugees, asylum seekers, and other migrant groups, which can obscure

the specific stressors associated with forced migration. The WHO evidence review itself highlights that risk and protective factors vary across refugee and migrant groups, contexts, and stages of the migration process (WHO, 2023). By focusing on forced migrant women during the perinatal period, the review was able to identify a more specific pattern of compounded vulnerability involving trauma exposure, interpersonal violence, social isolation, stigma, and barriers to care. This focus is important because pregnancy and postpartum experiences are not simply biological or clinical events; they are shaped by legal status, housing, language, family separation, and cultural safety. By embedding the Scoping Review within the wider thesis, it becomes evident that the unique challenges faced by pregnant or postpartum forced migrant women mirror, and in some cases amplify wider patterns of marginalisation and exclusion identified in the Policy Review.

A third contribution lies in the way the Secondary Data Analysis combines empirical breadth with critical caution, demonstrating both the value and the limitations of large-scale European health data. Although the dataset did not allow distinctions between forced and voluntary migration, legal status, length of residence, reason for migration, perinatal status, or exposure to trauma, it nevertheless showed that broad migrant categories were associated with significant depression-related inequalities. This finding is important because it indicates that meaningful disparities can still be identified within imperfect systems of routine data collection. However, the thesis does not treat this visibility as sufficient. Instead, it uses the limitations of the analysis itself, particularly the absence of more detailed and disaggregated migration categories, as part of the wider argument. In doing so, it reframes the absence of data as a structural rather than merely technical issue. The absence of disaggregated migrant data shapes what can be known, whose needs can be identified, and which groups become visible in policy and service planning. This contribution is therefore both substantive and methodological: it highlights depression-related inequalities among migrants while also showing how data systems that fail to distinguish migration pathways may reproduce invisibility and constrain the development of targeted policy and service responses.

Fourth, a further contribution comes from the Policy Review's within-country comparison of UK responses to Afghan and Ukrainian forced migrants. The added value here lies less in proving one single explanation for differential treatment, and more in showing how policy

route, eligibility structure, administrative capacity, public mobilisation, and representations of deservingness can combine to produce materially different post-migration conditions within the same host state. This comparison is analytically valuable because it holds the national setting constant while revealing how different refugee groups may still encounter very different routes to safety, support, and settlement. This strengthens the thesis's wider argument that belonging is not only personal or interpersonal, but can also be institutionalised through eligibility criteria, administrative systems, funding priorities, public mobilisation, and representations of deservingness. Existing work has shown that public attitudes and media framing differ across refugee groups. In this way, the thesis adds to that literature by showing how differences between refugee groups are not merely discursive; they become embedded in policy design and implementation, shaping the conditions through which forced migrants are received, supported, and enabled to rebuild their lives.

Fifth, the thesis contributes by developing social support as a cross-cutting concept rather than treating it as a simple micro- or meso-level variable. Across the thesis, social support emerges as something that connects different levels of the Social-Ecological Model. In the Secondary Data Analysis, social support was associated with depression-related outcomes. In the Scoping Review, perceived adequacy and trustworthiness of support were especially important in the perinatal context, where support could be undermined by stigma, mistrust, and fear of disclosure. In the Policy Review, social support was shown to be partly structured by resettlement design, including sponsorship routes, family reunion, local authority support, and community mobilisation. The thesis therefore adds a more expansive interpretation of social support: it is not simply something migrants possess or lack at the individual level, but something structured by policy, shaped by social trust, and unequally distributed across groups.

Finally, the thesis contributes conceptually by bringing together the SEM with the themes of stigma, marginalisation, and exclusion. The SEM provided the structure for analysing multilevel influences, while the thesis title captured the processes through which those influences operate. Stigma was visible in mental health disclosure, community judgement, and public narratives about migrants. Marginalisation appeared through weak social support, language barriers, isolation, and difficulty accessing appropriate care. Exclusion appeared

through unaffordable services, narrow policy criteria, legal uncertainty, and gaps in data infrastructure. Together, these concepts offer a way of understanding migrant mental health disparities not as random or inevitable, but as patterned, produced, and sustained through systems that define who is recognised, who is included, and most importantly, who is excluded.

Collectively, these contributions offer a richer understanding of how migrant mental health inequalities are produced and sustained. The thesis shows that disadvantage is not random and not adequately understood as a collection of separate risk factors. Rather, it is structured, layered, and reinforced by systems that shape recognition, entitlement, support, and belonging. In that sense, the thesis contributes not only additional evidence, but a more cohesive account of how migrant mental health disparities come to be reproduced across everyday life, social relationships, and institutional systems. It also demonstrates why responses to migrant mental health must be equally multilevel: clinical care is necessary, but insufficient without social trust, accessible services, stable housing, legal security, and policy frameworks that recognise migrants, particularly forced migrants, as entitled to protection, support, and equitable access to care.

5.4 Reflecting on thesis aims, objectives, research questions, and theoretical framework

This thesis originally set out to investigate whether and why migrants, and forced migrants in particular, experience poorer mental health, with attention to drivers operating at the individual, social, and structural levels. It sought to assess the prevalence patterns, identify risk and protective factors, clarify the role of policy in shaping post-migration conditions, explore how perinatal needs are addressed or overlooked, and generate evidence-based recommendations.

Taken together, the analytical chapters addressed these aims from different but connected angles. The Secondary Data Analysis provided quantitative evidence of higher depression prevalence among migrants and identified social support, affordability of healthcare, socioeconomic position, and health status as key predictors. The Scoping Review showed how cumulative trauma, stigma, barriers to care, and reduced support converge in the perinatal mental health of forced migrant women. The Policy Review clarified how macro-level policy arrangements shape access to housing, healthcare, legal certainty, family reunion, and social support in ways that are highly relevant to mental health. Collectively, these findings address the central research questions by showing not only that vulnerabilities exist, but how they are produced, mediated, and expressed differently depending on migration status and policy context.

The Social-Ecological Model (SEM) proved central to integrating these strands of the thesis. It guided both the structure and the analysis, offering a framework through which mental health disparities could be understood as arising through the interaction of micro-level experiences (e.g., trauma and health vulnerabilities), meso-level social environments (e.g., stigma, social support, and belonging), and macro-level structures (e.g., legal status, policy responses, and broader forms of exclusion). The SEM therefore did more than organise the thesis: it helped show that these are not isolated domains, but overlapping and mutually reinforcing spheres of influence that jointly shape migrant mental health. This was important in ensuring that migrant mental health was not treated solely as an individual issue, but as one embedded in

wider social and structural conditions. A fuller reflection on researcher positionality and the role of lived experience in shaping the research process is provided in the following reflective chapter.

5.5 Strengths and limitations

One of the thesis's notable strengths lies in its multi-method design, integrating a secondary data analysis, a scoping review, and a policy review, each bringing distinct yet complementary perspectives. Rather than relying on a single source of evidence, the thesis examined migrant mental health disparities across different levels of analysis. The Secondary Data Analysis provided a broader population-level view, identifying key predictors of depression among migrants across multiple European countries. The Scoping Review addressed an important gap by focusing explicitly on forced migrant women during the perinatal period, an understudied group facing heightened mental health vulnerability. The Policy Review added structural depth by examining how national-level policy design in the UK may shape post-migration conditions differently for Afghan and Ukrainian forced migrants. Taken together, these components strengthened the thesis by allowing mental health inequalities to be examined across individual, social, and structural levels.

Another important strength is the use of the Social-Ecological Model (SEM) to structure both analysis and synthesis. By organising evidence across micro (individual), meso (social), and macro (structural) levels, the thesis avoided an overly individualised view of mental health and instead emphasised the layered and interacting nature of disadvantage. The SEM provided a cohesive analytical structure that made it possible to connect findings across the different chapters and methods, while also helping to show that themes such as stigma, social support, uncertainty, and access to care move across levels rather than sitting neatly within one domain.

However, the thesis also faces several limitations. First, the Secondary Data Analysis drew on European survey data that did not differentiate between migrant groups or migration characteristics, such as forced versus voluntary migration, reason for migration, legal status, length of residence, or particularly vulnerable subgroups such as pregnant women. This lack of specificity limited the ability to make precise claims about the unique experiences of forced migrants, particularly in relation to trauma exposure, legal vulnerability, or subgroup-specific mental health risks. Furthermore, the Secondary Data Analysis reflected a European context, which may not capture the realities of migrants in other resettlement settings. These

constraints affect both the generalisability of the findings and their direct relevance beyond Europe.

Second, while the Secondary Data Analysis identified predictors such as social support, self-rated health, and affordability of care, its cross-sectional design did not permit causal inference (Wang and Cheng, 2020). It is not possible to determine whether these factors led to poorer mental health, or whether poorer mental health itself shaped participants' perceptions of health and social connectedness. The findings are therefore best interpreted as evidence of association rather than causation.

Third, the Scoping Review was limited by the nature of the evidence base it identified. Many of the included studies were cross-sectional, small-scale, or methodologically heterogeneous, and relatively few examined mental health outcomes beyond depression, anxiety, and PTSD. This limited the extent to which the review could trace trajectories of mental health over time or draw stronger conclusions about causality, intervention effectiveness, or changes across different stages of resettlement. In addition, because the review was restricted to English-language studies, some relevant evidence may have been missed.

Fourth, the Policy Review focused on UK responses to the Afghan and Ukrainian displacement crises. While the comparative analysis generated important insights into differential treatment, policy design, and mental-health-relevant post-migration conditions, its findings may not be directly transferable to other national contexts. The analysis also relied on publicly available documentary sources, meaning that the evidence base was shaped by what had been officially published, reported, or made visible in public debate.

Fifth, the thesis as a whole brings together different methods, populations, and evidence types. This is a strength because it enables multilevel synthesis, but it also means that the final integration is interpretive rather than a single unified empirical test. The chapters do not all examine the same participants, countries, outcomes, or policy settings. Therefore, the synthesis should be understood as an integrated explanatory account built across complementary forms of evidence, rather than as a direct causal model.

Finally, the researcher's own positionality as a forced migrant brought both strengths and challenges. It enhanced cultural insight, reflexivity, and sensitivity to forms of exclusion that might otherwise have been overlooked, but it also required careful attention to the risk of over-identification or interpretive bias, particularly when analysing policy failures. This tension was managed through reflexive awareness and sustained engagement with the evidence base, but it remains important to acknowledge. At the same time, this positionality strengthened the thesis by contributing an informed and ethically engaged perspective, consistent with wider calls for more participatory and reflexive migration research (Ryan, 2015). A fuller reflection on researcher positionality, including how lived experience shaped the research process and interpretation, is provided in the following reflective chapter.

5.6 Future directions

The findings of this thesis point to several important directions for future research, policy, and practice. One clear priority is the improvement of data systems. Enhanced data collection that differentiates between migrant groups, especially in large surveys, would enable more precise analyses of risk factors and better identification of group-specific needs. For example, distinguishing between types of migration status, levels of legal protection, reason for migration, length of residence, and perinatal stage would help ensure that both research and services can be more appropriately targeted. Surveys would also benefit from including questions on mental health outcomes beyond depression, such as anxiety, PTSD, and stress-related disorders, which are highly relevant to migrant populations but often overlooked in routine datasets.

Second, longitudinal studies are essential to capture the temporal dynamics of migrant mental health. Much of the evidence examined in this thesis was cross-sectional, limiting the ability to understand how mental health changes over time. Longitudinal research would make it possible to identify critical periods of vulnerability, examine the long-term effects of migration-related stressors, and better understand how post-migration conditions such as legal insecurity, unstable housing, employment barriers, or family separation shape mental health trajectories. It could also help clarify whether factors such as social support, housing stability, legal certainty, and access to care have lasting protective effects, or whether their impact changes across different stages of settlement. The World Health Organization has similarly emphasised the importance of longitudinal research for understanding the evolving mental health needs of migrant populations and informing effective interventions (World Health Organization, 2018).

Third, future research should place greater emphasis on qualitative and mixed-methods research. Quantitative surveys are valuable for identifying patterns and predictors, but they cannot fully capture how migrants understand stress, decide whether to seek help, or navigate systems that may feel unfamiliar, unsafe, or exclusionary. Qualitative studies could examine how migrants negotiate trust in clinical settings, especially when interpreters are involved; how stigma operates within families, communities, and services; and how structural

exclusions such as benefit ineligibility, housing uncertainty, or unclear healthcare entitlements are experienced emotionally and psychologically. Participatory approaches involving migrants, refugee-led organisations, and community groups would also help ensure that future research and service design are shaped by lived experience rather than institutional assumptions. These are critical aspects of service accessibility, acceptability, and mental health experience that cannot be adequately understood through quantitative measures alone.

Fourth, policy research should be expanded beyond single-country case studies to examine how different legal frameworks, welfare systems, and resettlement models shape mental-health-relevant conditions. The Policy Review showed how UK schemes for Afghan and Ukrainian forced migrants created different post-migration conditions, but it remains unclear how far similar patterns operate elsewhere, or whether different welfare, asylum, and healthcare systems produce different mental health implications. Comparative policy studies across countries could therefore help clarify whether the kinds of differential treatment identified in this thesis are specific to the UK context or reflect a broader pattern in refugee reception and resettlement.

Fifth, future health and resettlement frameworks should embed mental health considerations at every stage of migrants' journeys, from arrival through longer-term integration. Stable housing, legal certainty, access to healthcare, employment support, family reunion, and early mental health screening are all practical measures that could reduce avoidable distress. Similarly, addressing stigma at community, service, and structural levels may encourage earlier help-seeking among migrants who might otherwise fear discrimination, judgement, or cultural insensitivity (Mascayano et al., 2015).

Finally, the findings highlight the need for more intervention research. There remains a significant gap between documenting mental health need and testing what actually improves outcomes. Intervention studies are essential in this context, as they rigorously evaluate the effectiveness of specific mental health interventions, ensuring they are both culturally sensitive and effective. Such studies have demonstrated that culturally adapted interventions can significantly improve mental health outcomes among ethnic minorities by promoting patient-centred, respectful care and strengthening family and community-based support

systems (Joo and Liu, 2021). Early and appropriately tailored interventions have also been shown to reduce the severity of mental health symptoms and improve overall quality of life (Li et al., 2024), underscoring the need for research that evaluates not only clinical effectiveness and cultural acceptability but also how interventions engage with the wider social and structural conditions that shape migrant mental health.

5.7 Conclusion

The central argument of this thesis is consistent with its title: "*Stigmatised, Marginalised, Excluded: A Multilevel Investigation of Migrant Mental Health Disparities*". The thesis has demonstrated that migrant mental health disparities should not be understood as isolated or individualised clinical phenomena, but as the outcome of intersecting forces operating across multiple levels. Stigma, marginalisation, and exclusion were not confined to separate parts of the Social-Ecological Model; rather, they appeared across individual experiences, social relationships, service encounters, data systems, and policy frameworks.

The findings from the Secondary Data Analysis, the Scoping Review, and the Policy Review collectively highlight that disadvantage is layered, cumulative, and often systematic. The thesis shows that mental health inequalities are shaped not only by trauma or individual risk factors, but also by post-migration conditions such as social support, affordability of care, legal certainty, housing stability, family reunion, culturally safe services, and equitable policy design. Taken together, these findings show that migrant mental health is shaped by how people are received, recognised, and supported after migration, as much as by what they experienced before it.

In this sense, the thesis contributes a multilevel explanatory account of migrant mental health inequalities. It shows that these inequalities are not random, nor are they adequately understood as the result of separate risk factors considered in isolation. Rather, they are produced and sustained through the interaction of personal vulnerabilities, social environments, and institutional structures. This has important implications for research, policy, and practice. Responses to migrant mental health must go beyond clinical intervention alone and engage with the wider conditions that shape well-being, including social support, service accessibility, housing, legal security, and culturally safe care.

While the thesis does not claim to resolve all the complexities surrounding migrant mental health, it identifies clear directions for progress. These include more refined and inclusive data systems, greater attention to subgroup-specific needs, stronger evidence on intervention

effectiveness, and policies that reduce rather than reproduce uncertainty, exclusion, and unequal access to support.

Ultimately, the thesis advocates for multilevel, equity-driven responses to migrant mental health disparities. Recognising migrants as entitled to comprehensive, empathetic, and culturally sensitive mental health support is not only a policy imperative but a moral one. Dismantling the stigma, marginalisation, and exclusion that persist across systems is a necessary step towards more just, humane, and effective migration and health practices.

6 Reflective Chapter: Behind the Scenes – Research Obstacles, Ethical Challenges, and Lived Realities

6.1 Challenges and adaptations

The research process was not without obstacles. One of the most significant was the failed attempt to conduct a qualitative study involving interviews with refugee women in the UK to understand their mental health experiences. The recruitment process, which I had anticipated would be difficult but achievable, turned out to be one of the biggest hurdles. After months of effort and various outreach attempts, I was only able to recruit two participants, which was far below the number needed for meaningful qualitative analysis and ultimately led me to abandon the study.

This was both a practical and emotional setback. I had envisioned being able to give voice to refugee women through their narratives, but I faced an unexpected barrier to accessing these voices. Towards the end of the recruitment period, a new wave of interest emerged when I circulated posters with the help of an acquaintance at a refugee welcoming café. Initially, I was optimistic, receiving dozens of emails expressing interest. However, as I began contacting potential participants, red flags started to emerge. Many of the responses featured English or British names, which was unusual for the population I was targeting. Nonetheless, I set aside my assumptions and tried to contact the eligible participants. Upon further investigation, it became clear that the vast majority of these responses were spam, with fake names and non-functioning phone numbers. I later learned that other researchers have reported similar experiences with online recruitment, in some cases, studies have had to be paused or participants' data discarded due to widespread misrepresentation or "*imposter participants*" (Pullen Sansfaçon et al., 2024; Santinele Martino et al., 2024, p. 1291). The disappointment was profound, as I had to abandon the qualitative study that I had so passionately wanted to conduct.

This experience, while frustrating, highlighted the ethical complexities and challenges of conducting research with vulnerable populations. Ethical considerations were of utmost importance throughout this process. From the outset, I had carefully considered issues of consent, confidentiality, and the emotional risks associated with discussing sensitive topics such as migration and mental health. I worked hard to ensure that participants would be fully informed about the purpose of the study and their right to withdraw at any time without

consequence. Furthermore, given the sensitive nature of the population, I was committed to minimising any potential distress caused by the interview process. I specifically designed the interviews to be conducted sensitively, offering flexibility such as telephone or online interviews and even the option to have a family member present for support during the interview. Given the potential sensitivities around my gender as a male researcher, these adaptations were especially relevant. While my gender could have been seen as a potential barrier, in practice, it was not a significant factor in the recruitment challenges. It never reached the point where participants expressed interest but then declined due to my gender. Of the two participants interviewed, my gender was not an issue. However, despite these efforts, the recruitment process underscored the difficulty of engaging vulnerable populations in research, particularly in contexts where trust and privacy are significant concerns.

Materials developed for the qualitative study included the research protocol, information sheet, consent form, poster, and topic guide. These documents detailed the ethical considerations and processes that were established to ensure participant safety, confidentiality, and informed consent, which were integral to the study design.

In the end, the failure of this recruitment effort was a significant setback, but it also taught me important lessons about the challenges of conducting research with migrants, particularly forced migrant women. It reinforced the need for community trust-building and the importance of working closely with refugee-serving organisations from the very beginning. Moreover, it taught me about the emotional challenges of researching sensitive topics. As someone who has experienced forced migration firsthand, it was disheartening to feel that I had failed to connect with people whose experiences I deeply wanted to understand and amplify. Nonetheless, these challenges pushed me to adapt my research approach and to explore new methods, such as policy analysis, to answer my research questions.

6.2 Researcher positionality and potential biases

My own background as a forced migrant from Afghanistan deeply influenced the shape and tone of this research. That identity was not a bias to be eliminated, but a reality to be acknowledged and reflected upon throughout the thesis. It brought strengths: cultural insight, empathy, and a heightened awareness of stigma, exclusion, and belonging. These perspectives were especially relevant when analysing themes such as interpreter mistrust, the weight of silence around mental illness, or the psychological effects of visa uncertainty.

However, this positionality also posed risks. I had to remain cautious not to project my own experiences onto broader migrant groups or assume uniformity where diversity exists. To mitigate this, I deliberately sought to maintain reflexive practices, including journaling, critical engagement with theory, discussion of emerging findings with supervisors and peers, and consistently revisiting the methodological framework to ensure my interpretations remained grounded in objective evidence rather than my own assumptions. This helped me move between insider and outsider perspectives depending on the stage or subject of research.

I occupied what Dwyer and Buckle (2009) call the "*space between*" insider and outsider (Dwyer and Buckle, 2009, p. 60). As an insider, I shared language, history, and cultural reference points with many whose experiences I sought to understand; this facilitated empathy and interpretive sensitivity. As an outsider, I held institutional privilege as a university-based researcher and enjoyed relative stability compared with newly arrived families.

6.3 Intellectual growth and insights

As I progressed through the research, I gained a deeper appreciation for the complexity of migration and its intersection with mental health. The process challenged me to think critically about the limitations of current data and research methodologies, and it deepened my understanding of the individual, social, and structural factors that influence the mental health of migrants.

One of the most significant lessons I learned was the importance of flexibility in research. My initial expectations were challenged at multiple points, from the failed recruitment efforts to the limitations in available data, but each of these challenges pushed me to think critically and adapt my research approach. Another key insight I gained was the realisation that mental health issues among migrants are often under-recognised and poorly addressed at both the policy and healthcare levels. The lack of specific data and the difficulty in accessing relevant information are symptoms of a broader neglect of this population's needs. This realisation has driven me to advocate for more robust data collection practices and policies that specifically address the needs of migrants, particularly forced migrants during vulnerable periods such as pregnancy.

By blending personal perspective with academic methodologies, I gained new insight into the ways in which migration shapes well-being at both individual and collective levels. Each phase of this research, from Chapter 1 to the final Discussion Chapter, contributed a piece to the puzzle of understanding the disparities in migrant mental health.

6.4 Contribution and future outlook

The contributions of this research extend beyond the academic findings. The thesis has drawn attention to critical gaps in our understanding of migrants' mental health. This research highlights the urgent need for more comprehensive data collection and more nuanced policy approaches to address the mental health needs of migrants.

On a practical level, I hope this research will serve as a call to action for both academics and policymakers. There is a clear need for more targeted studies that focus specifically on the perinatal mental health of forced migrants, and for policies that prioritise the health and well-being of this vulnerable population. I also hope that my work will encourage greater collaboration between researchers, community organisations, and policymakers to ensure that migrants are given the attention and support they need. On a personal level, navigating forced migration while undertaking a Ph.D. and becoming a parent, made me realise that research must not only generate knowledge but also drive meaningful change for marginalised populations. Migration, and forced migration in particular, is often shaped by political forces, but at its core, it is a deeply human experience, and its impact on mental health deserves far greater attention in both academia and policy.

In conclusion, this research journey has been both challenging and deeply rewarding. It has allowed me to connect my personal experiences as a forced migrant with my academic work, and it has given me the opportunity to contribute to an important and underexplored field. Looking ahead, I am committed to continuing this work, both in terms of future research and in advocating for the mental health needs of migrants, particularly women and families.

Appendix A: Regression Tables

Table A1 | Factors associated with depression severity among home populations from multinomial logistic regression analysis.

Factor variables	Mild depression RRR	p-value	Moderate depression RRR	p-value	Moderately severe depression RRR	p-value	Severe depression RRR	p-value
Sex								
Male	REF							
Female	1.44 (1.29-1.60)	<0.01	1.35 (1.10-1.66)	<0.01	1.55 (1.29-1.87)	<0.01	1.14 (0.85-1.52)	0.40
Age group								
≥ 60	REF		REF		REF		REF	
25 – 59	1.42 (1.31-1.54)	<0.01	2.33 (1.41-3.86)	<0.01	2.53 (1.83-3.51)	<0.01	1.88 (1.55-2.27)	<0.01
15 – 24	2.58 (2.16-3.08)	<0.01	4.66 (2.31-9.41)	<0.01	4.11 (2.08-8.11)	<0.01	2.58 (1.02-6.50)	0.04
Residential area classification								
Cities	REF		REF		REF		REF	
Towns and suburbs	0.90 (0.82-0.99)	0.02	0.87 (0.76-0.99)	0.04	0.84 (0.79-0.90)	<0.01	1.21 (0.86-1.71)	0.27
Rural areas	0.84 (0.80-0.88)	<0.01	0.72 (0.67-0.77)	<0.01	0.72 (0.66-0.78)	<0.01	1.01 (0.72-1.41)	0.97
Education								
No formal education	REF		REF		REF		REF	
Primary education	0.87 (0.84-0.90)	<0.01	0.64 (0.59-0.71)	<0.01	0.46 (0.27-0.78)	<0.01	0.41 (0.26-0.63)	<0.01
Secondary education	0.89 (0.67-1.18)	0.41	0.67 (0.41-1.12)	0.13	0.41 (0.24-0.69)	<0.01	0.32 (0.12-0.81)	0.02
Post-secondary education	1.09 (0.91-1.30)	0.37	0.87 (0.54-1.39)	0.57	0.30 (0.13-0.66)	<0.01	0.37 (0.13-1.02)	0.05
Tertiary education	1.08 (0.85-1.38)	0.52	0.74 (0.44-1.23)	0.24	0.36 (0.20-0.66)	<0.01	0.26 (0.09-0.77)	0.01
Employment status								
Employed	REF		REF		REF		REF	
Unemployed	0.89 (0.76-1.04)	0.15	0.90 (0.76-1.05)	0.18	1.36 (0.92-2.02)	0.12	0.85 (0.48-1.52)	0.59
Retired	0.83 (0.71-0.98)	0.02	0.80 (0.66-0.97)	0.03	1.00 (0.78-1.29)	0.99	0.57 (0.27-1.19)	0.13
Unable to work due to health	1.01 (0.72-1.41)	0.97	1.70 (1.29-2.24)	<0.01	2.48 (1.92-3.20)	<0.01	1.85 (1.31-2.62)	<0.01
Student, pupil	0.98 (0.85-1.13)	0.80	0.79 (0.58-1.09)	0.16	3.14 (1.49-6.62)	<0.01	1.55 (0.79-3.05)	0.20
Fulfilling domestic tasks	0.85 (0.68-1.07)	0.16	0.76 (0.62-0.94)	0.01	0.88 (0.63-1.24)	0.47	0.84 (0.60-1.18)	0.31
Other	1.12 (0.90-1.38)	0.31	1.56 (1.43-1.70)	<0.01	1.67 (1.07-2.61)	0.03	2.19 (1.37-3.52)	<0.01
Marital status								
Single	REF		REF		REF		REF	
Married	0.91 (0.84-1.00)	0.04	0.83 (0.67-1.03)	0.09	0.91 (0.62-1.35)	0.64	0.72 (0.47-1.10)	0.13
Widowed	0.97 (0.79-1.19)	0.76	1.07 (0.94-1.23)	0.30	1.07 (0.52-2.17)	0.86	1.41 (1.02-1.94)	0.04
Divorced	0.79 (0.63-1.00)	0.05	0.74 (0.63-0.88)	<0.01	0.92 (0.72-1.19)	0.54	0.59 (0.49-0.70)	<0.01
Household size	0.87 (0.83-0.92)	<0.01	0.84 (0.77-0.93)	<0.01	0.76 (0.66-0.87)	<0.01	0.94 (0.75-1.17)	0.56
Household type								
Couple with children	REF		REF		REF		REF	

Factor variables	Mild depression RRR	p-value	Moderate depression RRR	p-value	Moderately severe depression RRR	p-value	Severe depression RRR	p-value
One-person household	1.26 (1.16-1.38)	<0.01	1.13 (0.98-1.30)	0.10	0.91 (0.85-0.97)	<0.01	0.76 (0.48-1.21)	0.25
Lone parent with children	0.95 (0.86-1.05)	0.33	0.90 (0.77-1.06)	0.21	0.97 (0.75-1.24)	0.78	0.59 (0.36-0.97)	0.04
Couple without children	0.97 (0.85-1.10)	0.62	0.80 (0.66-0.97)	0.03	0.76 (0.64-0.90)	<0.01	0.63 (0.59-0.68)	<0.01
Other	1.75 (1.40-2.18)	<0.01	1.89 (1.43-2.51)	<0.01	1.06 (0.52-2.16)	0.88	1.11 (0.71-1.74)	0.64
Number of children under 14	1.24 (1.17-1.31)	<0.01	1.18 (1.01-1.38)	0.03	1.49 (1.18-1.89)	<0.01	1.00 (0.87-1.16)	0.96
Household income								
Below 1st quintile (lowest income)	REF		REF		REF		REF	
Between 1st and 2nd quintile	0.95 (0.88-1.02)	0.17	1.10 (1.01-1.21)	0.03	1.33 (1.08-1.63)	0.01	0.82 (0.54-1.24)	0.34
Between 2nd and 3rd quintile	0.97 (0.91-1.04)	0.35	1.05 (0.99-1.11)	0.11	1.22 (1.01-1.46)	0.03	0.89 (0.68-1.18)	0.43
Between 3rd and 4th quintile	0.93 (0.86-1.01)	0.09	0.80 (0.64-1.00)	0.05	0.86 (0.66-1.12)	0.26	0.61 (0.35-1.06)	0.08
Between 4th and 5th quintile (highest income)	0.84 (0.77-0.91)	<0.01	0.77 (0.64-0.92)	<0.01	1.18 (1.00-1.39)	0.05	0.92 (0.72-1.16)	0.47
Self-perceived general health								
Very good	REF		REF		REF		REF	
Good	1.83 (1.63-2.06)	<0.01	2.98 (2.22-3.99)	<0.01	3.30 (0.82-13.37)	0.09	1.11 (0.48-2.58)	0.80
Fair	4.10 (3.67-4.57)	<0.01	9.16 (6.06-13.87)	<0.01	12.44 (2.04-75.71)	<0.01	4.82 (0.76-30.57)	0.10
Bad	8.48 (7.42-9.68)	<0.01	31.97 (25.24-40.50)	<0.01	79.23 (13.76-456.19)	<0.01	36.48 (7.15-186.03)	<0.01
Very bad	15.88 (10.66-23.65)	<0.01	88.85 (50.75-155.57)	<0.01	294.88 (60.22-1444.04)	<0.01	289.77 (55.28-1518.87)	<0.01
Long-standing health problem (N/Y)	1.21 (1.06-1.37)	<0.01	1.30 (1.07-1.58)	0.009	1.44 (1.22-1.69)	<0.01	1.09 (0.76-1.56)	0.64
Chronic conditions (N/Y)	1.17 (1.16-1.19)	<0.01	1.24 (1.17-1.32)	<0.01	1.22 (1.10-1.36)	<0.01	1.15 (1.06-1.26)	0.001
History of depression (N/Y)	3.34 (3.22-3.47)	<0.01	7.68 (5.98-9.87)	<0.01	13.14 (7.74-22.28)	<0.01	15.27 (6.88-33.90)	<0.01
Consultation with mental health professional (N/Y)	1.98 (1.70-2.30)	<0.01	2.46 (1.69-3.60)	<0.01	3.90 (3.13-4.86)	<0.01	4.17 (3.00-5.78)	<0.01
Ability to afford medical services (Y/N)	1.44 (1.18-1.76)	<0.01	1.76 (1.42-2.19)	<0.01	1.61 (1.32-1.97)	<0.01	1.62 (1.17-2.25)	<0.01
Ability to afford mental health services (Y/N)	2.18 (1.77-2.70)	<0.01	3.46 (2.70-4.44)	<0.01	3.84 (2.73-5.41)	<0.01	7.27 (6.01-8.79)	<0.01
Social support (number of close people)								
0	REF		REF		REF		REF	
1 or 2	0.90 (0.79-1.03)	0.12	1.16 (0.74-1.80)	0.52	0.75 (0.58-0.98)	0.03	1.05 (0.40-2.79)	0.92
3 to 5	0.77 (0.65-0.92)	<0.01	0.83 (0.61-1.13)	0.24	0.46 (0.34-0.63)	<0.01	0.52 (0.23-1.17)	0.12
6 or more	0.67 (0.52-0.87)	<0.01	0.67 (0.50-0.90)	<0.01	0.27 (0.20-0.36)	<0.01	0.53 (0.20-1.40)	0.20
BMI	0.99 (0.98-0.99)	<0.01	0.97 (0.95-0.99)	<0.01	0.97 (0.94-0.99)	0.01	0.99 (0.93-1.06)	0.80

Table A2 | Factors associated with depression severity among settled migrants from multinomial logistic regression analysis.

	Mild depression		Moderate depression		Moderately severe depression		Severe depression	
Factor variables	**RRR**	**p-value**	**RRR**	**p-value**	**RRR**	**p-value**	**RRR**	**p-value**
Sex								
Male	REF							
Female	1.50 (1.24-1.83)	<0.01	1.27 (0.92-1.76)	0.14	1.27 (0.76-2.13)	0.36	0.97 (0.49-1.90)	0.92
Age group								
≥ 60	REF		REF		REF		REF	
25 – 59	1.65 (1.28-2.13)	<0.01	1.14 (0.79-1.65)	0.50	1.51 (0.62-3.64)	0.36	4.90 (2.23-10.76)	<0.01
15 – 24	1.93 (1.34-2.77)	<0.01	2.46 (1.18-5.14)	0.02	3.36 (0.72-15.61)	0.12	#VALUE!	<0.01
Residential area classification								
Cities	REF		REF		REF		REF	
Towns and suburbs	0.73 (0.60-0.90)	<0.01	0.81 (0.58-1.14)	0.23	0.76 (0.45-1.28)	0.30	1.33 (0.67-2.61)	0.41
Rural areas	0.72 (0.56-0.93)	0.01	0.62 (0.40-0.97)	0.04	0.69 (0.36-1.34)	0.28	1.26 (0.52-3.03)	0.60
Education								
No formal education	REF		REF		REF		REF	
Primary education	0.91 (0.33-2.50)	0.85	- (-) *	-	1.45 (0.21-10.11)	0.71	0.62 (0.07-5.36)	0.66
Secondary education	1.04 (0.40-2.70)	0.94	- (-)	-	1.71 (0.29-10.19)	0.55	0.81 (0.12-5.29)	0.82
Post-secondary education	1.04 (0.38-2.89)	0.93	- (-)	-	2.48 (0.35-17.38)	0.36	0.20 (0.01-3.34)	0.26
Tertiary education	1.09 (0.42-2.87)	0.85	- (-)	-	1.48 (0.24-9.12)	0.67	0.90 (0.13-6.22)	0.91
Employment status								
Employed	REF		REF		REF		REF	
Unemployed	1.09 (0.77-1.54)	0.63	1.56 (0.90-2.68)	0.11	2.32 (1.04-5.19)	0.04	1.96 (0.73-5.29)	0.18
Retired	1.32 (0.93-1.87)	0.12	1.35 (0.78-2.33)	0.29	1.76 (0.76-4.08)	0.19	2.08 (0.60-7.21)	0.25
Unable to work due to health	1.63 (0.83-3.22)	0.16	2.48 (1.10-5.56)	0.03	5.57 (2.09-14.87)	<0.01	5.00 (1.53-16.33)	<0.01
Student, pupil	1.48 (0.89-2.48)	0.13	2.20 (0.99-4.89)	0.05	1.14 (0.20-6.46)	0.89	0.00 (0.00-0.00)	0.98
Fulfilling domestic tasks	1.00 (0.68-1.48)	0.99	1.09 (0.55-2.18)	0.80	1.05 (0.34-3.23)	0.93	2.43 (0.70-8.45)	0.16
Other	1.17 (0.62-2.22)	0.62	1.11 (0.35-3.48)	0.86	6.45 (2.01-20.71)	<0.01	1.60 (0.18-14.60)	0.68
Marital status								
Single	REF		REF		REF		REF	
Married	0.67 (0.50-0.89)	<0.01	0.55 (0.33-0.91)	0.02	1.35 (0.54-3.39)	0.52	0.93 (0.30-2.85)	0.90
Widowed	0.65 (0.42-0.99)	0.05	0.64 (0.33-1.24)	0.19	1.33 (0.46-3.87)	0.60	2.96 (0.82-10.75)	0.10
Divorced	0.57 (0.40-0.81)	<0.01	0.44 (0.24-0.80)	<0.01	1.18 (0.47-2.99)	0.73	0.86 (0.27-2.78)	0.80
Household size	1.01 (0.90-1.14)	0.89	0.95 (0.77-1.17)	0.63	1.02 (0.74-1.41)	0.91	1.24 (0.84-1.82)	0.28
Household type								
Couple with children	REF		REF		REF		REF	

Factor variables	Mild depression RRR	p-value	Moderate depression RRR	p-value	Moderately severe depression RRR	p-value	Severe depression RRR	p-value
One-person household	1.16 (0.94-1.43)	0.18	0.80 (0.33-1.97)	0.64	1.44 (0.40-5.15)	0.58	2.55 (0.54-12.02)	0.24
Lone parent with children	0.87 (0.48-1.59)	0.66	0.69 (0.27-1.33)	0.21	1.32 (0.66-2.65)	0.43	1.39 (0.17-11.37)	0.76
Couple without children	1.05 (0.84-1.29)	0.68	0.80 (0.46-1.39)	0.43	0.90 (0.38-2.12)	0.80	0.90 (0.26-3.07)	0.86
Other	1.52 (1.08-2.12)	0.02	1.01 (0.55-1.86)	0.97	1.41 (0.66-3.00)	0.38	1.08 (0.47-2.47)	0.86
Number of children under 14	1.15 (0.98-1.34)	0.09	1.26 (0.95-1.68)	0.11	1.55 (1.00-2.40)	0.05	1.14 (0.67-1.96)	0.63
Household income								
Below 1st quintile (lowest income)	REF		REF		REF		REF	
Between 1st and 2nd quintile	0.94 (0.73-1.23)	0.67	0.88 (0.57-1.34)	0.55	1.14 (0.61-2.12)	0.69	1.19 (0.52-2.74)	0.68
Between 2nd and 3rd quintile	0.96 (0.73-1.27)	0.77	0.93 (0.58-1.48)	0.75	0.82 (0.38-1.78)	0.62	0.99 (0.37-2.65)	0.98
Between 3rd and 4th quintile	0.71 (0.52-0.96)	0.03	0.77 (0.46-1.28)	0.32	0.74 (0.31-1.76)	0.50	0.88 (0.30-2.58)	0.82
Between 4th and 5th quintile (highest income)	0.58 (0.42-0.81)	<0.01	0.89 (0.52-1.52)	0.66	1.63 (0.71-3.72)	0.25	1.52 (0.51-4.54)	0.45
Self-perceived general health								
Very good	REF		REF		REF		REF	
Good	1.82 (1.36-2.44)	<0.01	1.80 (0.96-3.40)	0.07	2.61 (0.55-12.42)	0.23	0.72 (0.18-2.91)	0.64
Fair	3.15 (2.26-4.40)	<0.01	5.10 (2.63-9.89)	<0.01	12.61 (2.75-57.76)	<0.01	4.10 (1.14-14.80)	0.03
Bad	7.32 (4.64-11.54)	<0.01	19.78 (9.33-41.92)	<0.01	64.72 (13.18-317.74)	<0.01	25.59 (6.19-105.72)	<0.01
Very bad	5.98 (2.62-13.65)	<0.01	17.98 (6.19-52.21)	<0.01	103.20 (17.30-615.60)	<0.01	91.70 (17.33-485.04)	<0.01
Long-standing health problem (N/Y)	1.38 (1.11-1.71)	<0.01	2.04 (1.35-3.08)	<0.01	1.30 (0.65-2.61)	0.46	0.93 (0.38-2.25)	0.87
Chronic conditions (N/Y)	1.22 (1.14-1.30)	<0.01	1.21 (1.10-1.34)	<0.01	1.26 (1.10-1.45)	<0.01	1.17 (1.14-1.23)	<0.01
History of depression (N/Y)	2.04 (1.47-2.84)	<0.01	4.71 (3.09-7.17)	<0.01	12.25 (6.74-22.26)	<0.01	9.71 (4.39-21.50)	<0.01
Consultation with mental health professional (N/Y)	2.23 (1.58-3.16)	<0.01	3.29 (2.09-5.18)	<0.01	1.90 (1.01-3.57)	0.05	4.51 (2.09-9.74)	<0.01
Ability to afford medical services (Y/N)	1.44 (1.02-2.04)	0.04	2.13 (1.33-3.41)	<0.01	1.43 (0.71-2.91)	0.32	1.07 (0.43-2.71)	0.88
Ability to afford mental health services (Y/N)	4.47 (2.42-8.27)	<0.01	5.89 (2.81-12.33)	<0.01	8.47 (3.39-21.20)	<0.01	13.43 (4.91-36.74)	<0.01
Social support (number of close people)								
0	REF		REF		REF		REF	
1 or 2	0.74 (0.47-1.16)	0.19	0.55 (0.29-1.04)	0.07	0.62 (0.24-1.62)	0.33	0.30 (0.12-0.79)	0.01
3 to 5	0.69 (0.44-1.07)	0.10	0.47 (0.25-0.88)	0.02	0.38 (0.14-1.00)	0.05	0.10 (0.03-0.28)	<0.01
6 or more	0.58 (0.37-0.93)	0.02	0.49 (0.25-0.96)	0.04	0.32 (0.11-0.94)	0.04	0.15 (0.05-0.48)	<0.01
BMI	1.03 (1.01-1.05)	<0.01	1.00 (0.97-1.03)	0.98	0.95 (0.90-1.00)	0.05	0.98 (0.92-1.04)	0.49

** Values marked with ' - ' represent cases where the model did not converge, and therefore no estimate is available*

Table A3 | Factors associated with depression severity among non-settled migrants from multinomial logistic regression analysis.

	Mild depression		Moderate depression		Moderately severe depression		Severe depression	
Factor variables	**RRR**	**p-value**	**RRR**	**p-value**	**RRR**	**p-value**	**RRR**	**p-value**
Sex								
Male	REF							
Female	1.18 (0.94-1.48)	0.15	1.15 (0.78-1.70)	0.48	0.67 (0.33-1.38)	0.28	1.21 (0.46-3.15)	0.70
Age group								
≥ 60	REF		REF		REF		REF	
25 – 59	1.54 (1.01-2.33)	0.04	1.31 (0.68-2.52)	0.41	1.70 (0.56-5.17)	0.35	9.29 (1.21-71.39)	0.03
15 – 24	1.98 (1.06-3.68)	0.03	2.39 (0.82-6.94)	0.11	5.65 (0.98-32.51)	0.05	9.04 (0.48-171.45)	0.14
Residential area classification								
Cities	REF		REF		REF		REF	
Towns and suburbs	0.83 (0.65-1.06)	0.14	0.90 (0.59-1.37)	0.61	1.77 (0.83-3.76)	0.14	0.99 (0.44-2.21)	0.98
Rural areas	0.93 (0.70-1.25)	0.63	0.96 (0.58-1.58)	0.87	2.02 (0.85-4.77)	0.11	0.88 (0.32-2.41)	0.81
Education								
No formal education	REF		REF		REF		REF	
Primary education	1.58 (0.69-3.62)	0.28	0.80 (0.26-2.47)	0.7	2.52 (0.27-23.64)	0.42	- (-)*	-
Secondary education	1.33 (0.62-2.87)	0.46	0.61 (0.22-1.68)	0.34	0.64 (0.07-5.70)	0.69	- (-)	-
Post-secondary education	1.48 (0.61-3.60)	0.39	0.58 (0.16-2.10)	0.41	1.25 (0.09-16.88)	0.87	- (-)	-
Tertiary education	1.85 (0.84-4.03)	0.13	0.66 (0.23-1.90)	0.44	1.35 (0.15-12.35)	0.79	- (-)	-
Employment status								
Employed	REF		REF		REF		REF	
Unemployed	0.82 (0.56-1.18)	0.28	0.99 (0.53-1.82)	0.96	1.27 (0.42-3.82)	0.67	1.35 (0.41-4.48)	0.62
Retired	1.63 (1.03-2.58)	0.04	1.58 (0.77-3.23)	0.21	2.49 (0.67-9.24)	0.17	7.52 (1.48-38.23)	0.02
Unable to work due to health	3.19 (1.46-6.98)	<0.01	1.92 (0.62-5.97)	0.26	5.92 (1.36-25.75)	0.02	6.64 (1.25-35.44)	0.03
Student, pupil	1.75 (1.09-2.81)	0.02	2.17 (0.94-5.01)	0.07	3.12 (0.84-11.57)	0.09	3.60 (0.84-15.42)	0.08
Fulfilling domestic tasks	1.03 (0.70-1.52)	0.87	1.11 (0.56-2.21)	0.77	2.57 (0.72-9.17)	0.15	1.46 (0.37-5.71)	0.59
Other	2.11 (1.20-3.70)	<0.01	1.41 (0.54-3.70)	0.48	1.26 (0.24-6.51)	0.78	2.87 (0.62-13.25)	0.18
Marital status								
Single	REF		REF		REF		REF	
Married	0.94 (0.68-1.30)	0.73	0.88 (0.50-1.53)	0.64	1.00 (0.35-2.84)	0.99	1.04 (0.35-3.07)	0.94
Widowed	1.14 (0.70-1.87)	0.60	0.92 (0.42-2.00)	0.83	0.82 (0.18-3.82)	0.80	0.66 (0.11-4.06)	0.66
Divorced	0.83 (0.53-1.30)	0.41	0.56 (0.26-1.20)	0.14	0.79 (0.21-2.96)	0.72	0.33 (0.06-1.73)	0.19
Household size	0.98 (0.87-1.12)	0.82	0.62 (0.48-0.81)	<0.01	1.01 (0.69-1.47)	0.96	0.95 (0.60-1.50)	0.84
Household type								
Couple with children	REF		REF		REF		REF	

Factor variables	Mild depression RRR	p-value	Moderate depression RRR	p-value	Moderately severe depression RRR	p-value	Severe depression RRR	p-value
One-person household	1.34 (0.86-2.09)	0.20	0.46 (0.21-0.99)	0.05	1.08 (0.27-4.30)	0.91	0.69 (0.09-5.37)	0.72
Lone parent with children	1.62 (0.97-2.72)	0.07	1.13 (0.47-2.68)	0.79	1.10 (0.20-6.14)	0.92	3.37 (0.40-28.44)	0.26
Couple without children	0.89 (0.66-1.19)	0.42	0.45 (0.26-0.77)	<0.01	0.69 (0.25-1.91)	0.48	1.07 (0.29-4.02)	0.92
Other	1.28 (0.87-1.88)	0.21	1.23 (0.64-2.36)	0.54	3.18 (1.10-9.20)	0.03	2.70 (0.56-13.10)	0.22
Number of children under 14	1.14 (0.95-1.35)	0.16	1.66 (1.18-2.32)	<0.01	0.65 (0.35-1.21)	0.17	1.56 (0.90-2.72)	0.12
Household income								
Below 1st quintile (lowest income)	REF		REF		REF		REF	
Between 1st and 2nd quintile	1.12 (0.85-1.48)	0.44	1.03 (0.64-1.65)	0.92	1.28 (0.56-2.93)	0.56	1.50 (0.60-3.78)	0.39
Between 2nd and 3rd quintile	0.99 (0.73-1.34)	0.95	1.14 (0.68-1.91)	0.62	1.17 (0.46-2.95)	0.74	0.58 (0.15-2.27)	0.43
Between 3rd and 4th quintile	0.99 (0.69-1.41)	0.95	1.28 (0.70-2.36)	0.42	0.90 (0.27-3.05)	0.87	3.85 (1.31-11.30)	0.01
Between 4th and 5th quintile (highest income)	0.87 (0.58-1.30)	0.5	0.65 (0.28-1.48)	0.3	0.47 (0.09-2.52)	0.38	1.37 (0.32-5.91)	0.67
Self-perceived general health								
Very good	REF		REF		REF		REF	
Good	1.52 (1.13-2.04)	<0.01	1.90 (0.99-3.63)	0.05	3.73 (0.77-18.01)	0.1	0.88 (0.29-2.72)	0.83
Fair	2.32 (1.60-3.35)	<0.01	4.96 (2.40-10.21)	<0.01	9.41 (1.80-49.28)	<0.01	2.18 (0.60-7.99)	0.24
Bad	4.45 (2.69-7.38)	<0.01	18.41 (7.91-42.85)	<0.01	25.95 (4.19-160.72)	<0.01	7.77 (1.65-36.56)	<0.01
Very bad	6.95 (2.12-22.77)	<0.01	42.97 (10.80-170.96)	<0.01	108.67 (11.85-996.31)	<0.01	141.61 (21.91-915.25)	<0.01
Long-standing health problem (N/Y)	1.41 (1.07-1.84)	0.01	1.12 (0.69-1.82)	0.66	1.27 (0.52-3.06)	0.6	1.30 (0.47-3.55)	0.61
Chronic conditions (N/Y)	1.31 (1.20-1.42)	<0.01	1.23 (1.08-1.40)	<0.01	1.21 (0.98-1.51)	0.08	1.25 (0.97-1.60)	0.08
History of depression (N/Y)	3.54 (2.30-5.45)	<0.01	9.14 (5.31-15.73)	<0.01	9.60 (4.11-22.42)	<0.01	13.28 (5.19-33.95)	<0.01
Consultation with mental health professional (N/Y)	1.62 (1.01-2.59)	0.04	1.66 (0.87-3.17)	0.12	6.95 (3.03-15.97)	<0.01	1.66 (0.56-4.93)	0.36
Ability to afford medical services (Y/N)	1.66 (1.14-2.40)	<0.01	1.69 (0.96-2.98)	0.07	1.98 (0.76-5.17)	0.16	1.93 (0.69-5.39)	0.21
Ability to afford mental health services (Y/N)	2.64 (1.19-5.86)	0.02	4.08 (1.58-10.57)	<0.01	6.02 (1.71-21.19)	<0.01	8.47 (2.51-28.57)	<0.01
Social support (number of close people)								
0	REF		REF		REF		REF	
1 or 2	1.03 (0.67-1.59)	0.88	0.87 (0.44-1.72)	0.69	1.10 (0.34-3.61)	0.87	0.25 (0.09-0.67)	<0.01
3 to 5	0.76 (0.49-1.18)	0.22	0.66 (0.32-1.34)	0.25	0.78 (0.23-2.68)	0.69	0.20 (0.07-0.59)	<0.01
6 or more	0.65 (0.40-1.07)	0.09	0.77 (0.36-1.67)	0.51	0.78 (0.20-3.07)	0.73	0.29 (0.09-0.93)	0.04
BMI	0.99 (0.97-1.01)	0.44	1.05 (1.01-1.09)	<0.01	1.05 (0.98-1.12)	0.19	0.97 (0.89-1.05)	0.39

** Values marked with ' - ' represent cases where the model did not converge, and therefore no estimate is available*

Table A4 | Factors associated with depression (PHQ-8 score ≥ 10) from multiple logistic regression analysis with interaction terms.

	Multivariate	
Factor Variables	**aOR (95% CI)**	**p-value**
Migration Status		
Home populations	REF	
Settled migrants	3.96 (2.15-7.29)	<0.01
Non-settled migrants	1.28 (0.97-1.69)	0.08
Sociodemographic characteristics		
Sex		
Male	REF	
Female	1.19 (1.00-1.41)	0.048
Age group		
≥ 60	REF	
25 – 59	1.89 (1.39-2.57)	<0.01
15 – 24	2.95 (1.86-4.68)	<0.01
Residential area classification		
Cities	REF	
Towns and suburbs	0.90 (0.84-0.97)	<0.01
Rural areas	0.78 (0.72-0.84)	<0.01
Education		
No formal education	REF	
Primary education	0.60 (0.50-0.71)	<0.01
Secondary education	0.58 (0.37-0.90)	0.01
Post-secondary education	0.64 (0.38-1.07)	0.09
Tertiary education	0.54 (0.33-0.89)	0.02
Employment status		
Employed	REF	
Unemployed	0.99 (0.82-1.19)	0.89
Retired	0.86 (0.70-1.05)	0.13
Unable to work due to health	1.72 (1.55-1.92)	<0.01
Student, pupil	1.07 (0.91-1.27)	0.41
Fulfilling domestic tasks	0.82 (0.69-0.99)	0.04
Other	1.51 (1.33-1.73)	<0.01
Marital status		
Single	REF	
Married	0.90 (0.68-1.18)	0.44
Widowed	1.09 (0.95-1.24)	0.24
Divorced	0.86 (0.80-0.92)	<0.01
Household size	0.88 (0.84-0.92)	<0.01
Household type		
Couple with children	REF	
One-person household	0.95 (0.76-1.19)	0.67
Lone parent with children	0.78 (0.67-0.92)	0.003
Couple without children	1.04 (0.86-1.25)	0.71
Other	1.40 (1.19-1.64)	<0.01
Number of children under 14	1.09 (1.00-1.19)	0.05
Household income		
1st quintile (lowest income)	REF	
2nd quintile	1.10 (1.03-1.18)	0.007

Factor Variables	Multivariate aOR (95% CI)	p-value
3rd quintile	1.04 (0.98-1.11)	0.17
4th quintile	0.79 (0.61-1.01)	0.07
5th quintile (highest income)	0.89 (0.78-1.02)	0.11
Health-related characteristics		
Self-perceived general health		
Very good	REF	
Good	2.28 (1.65-3.14)	<0.01
Fair	5.75 (3.90-8.49)	<0.01
Bad	17.01 (13.41-21.57)	<0.01
Very bad	41.26 (36.54-46.59)	<0.01
Long-standing health problem (N/Y)	1.33 (1.12-1.56)	<0.01
Chronic conditions	1.13 (1.07-1.18)	<0.01
History of depression (N/Y)	5.11 (4.00-6.52)	<0.01
Consultation with mental health professional (N/Y)	1.98 (1.46-2.69)	<0.01
Ability to afford medical services (Y/N)	1.43 (1.11-1.84)	0.005
Ability to afford mental health services (Y/N)	2.36 (1.92-2.89)	<0.01
Social support (number of close people)		
0	REF	
1 or 2	1.08 (0.67-1.73)	0.76
3 to 5	0.78 (0.55-1.12)	0.18
6 or more	0.63 (0.45-0.89)	0.008
BMI	0.98 (0.97-0.99)	<0.01
Interactions		
Interaction: Migration x Sex		
Settled migrants x Female	0.71 (0.52-0.97)	0.03
Non-settled migrants x Female	1.04 (0.60-1.79)	0.89
Interaction: Migration x Employment		
Settled migrants x Unemployed	2.58 (1.90-3.50)	<0.01
Settled migrants x Retired	1.86 (0.92-3.77)	0.09
Settled migrants x Unable to work	1.89 (0.92-3.91)	0.09
Settled migrants x Student	1.08 (0.74-1.60)	0.68
Settled migrants x Domestic tasks	1.48 (1.08-2.01)	0.01
Settled migrants x Other	4.78 (0.94-24.18)	0.06
Non-settled migrants x Unemployed	0.95 (0.72-1.25)	0.69
Non-settled migrants x Retired	0.75 (0.14-3.87)	0.73
Non-settled migrants x Unable to work	0.27 (0.13-0.58)	0.001
Non-settled migrants x Student	2.08 (1.53-2.83)	<0.01
Non-settled migrants x Domestic tasks	0.83 (0.42-1.63)	0.59
Non-settled migrants x Other	0.33 (0.05-2.04)	0.23
Interaction: Migration x Unmet Mental Health Needs		
Settled migrants x Unmet mental needs	1.10 (0.81-1.50)	0.52
Non-settled migrants x Unmet mental needs	1.64 (0.93-2.88)	0.09
Interaction: Migration x Social Support		
Settled migrants x 1 or 2	0.17 (0.04-0.72)	0.02
Settled migrants x 3 to 5	0.41 (0.31-0.55)	<0.01
Settled migrants x 6 or more	0.43 (0.18-1.00)	0.049
Non-settled migrants x 1 or 2	0.77 (0.59-1.01)	0.06

Factor Variables	Multivariate aOR (95% CI)	p-value
Non-settled migrants x 3 to 5	0.84 (0.45-1.55)	0.57
Non-settled migrants x 6 or more	1.51 (1.10-2.09)	0.01

Appendix B: EUROSTAT Application Form

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RPP 66/2023-EHIS - The effect of migration on the mental health of migrant women: a secondary data analysis

Research Entity

Research Entity Reference	2017/091/UK
Network	No
Research Entity Contact Person	Dr Michael Barber

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Research Entity	2017/091/UK

Purpose of the research

Description of the Research Project

Migrant women face unique challenges during their migration process, including the stress of migration and resettlement, language barriers, and limited access to healthcare. The purpose of this study is to conduct a secondary data analysis to examine the relationship between various social, demographic, and health-related factors and the mental health outcomes among migrant women.
The main objective of this study is to investigate the mental health of migrant women, with a focus on the following research questions:

1. What is the prevalence of mental health problems among migrant women compared to non-migrant women?
2. How do demographic and social factors, such as age, marital status, parity, education, employment status, and household size, impact mental health among this population?
3. What is the association between health determinants, such as women's BMI, access to social support, comorbidities, diet, smoking and alcohol consumption, and mental health among migrant women?

Objective's description

Why publicly available data can not be used for the

While there are publicly available datasets on Eurostat website, the available variables in these datasets are limited and do not capture the specific factors that are relevant to our research questions. Specifically, we are interested in examining the effect of migration on mental health among migrant women, which requires information on both migration history and mental health outcomes. Unfortunately, publicly available datasets do not provide the required level of detail on these variables. Therefore, we require access to more comprehensive data that can facilitate our

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analyses.
Access to EHIS data is crucial to our research project as it enables us to study the mental health of migrants, a particularly vulnerable and marginalised population. The mental health of migrants is a matter of substantial public interest given the significant challenges they face throughout their migration journey, including persecution, displacement, and resettlement in unfamiliar environments. These experiences may have long-lasting effects on mental health. Therefore, understanding the mental health outcomes of migrant women is essential for developing effective policies and interventions to support this population and improve their health and well-being. Access to EHIS data will provide us with the necessary information to conduct a robust and comprehensive analysis of this critical public health issue and will feed into a wider investigation of mental health in this population as part of my PhD.

Duration start	02/05/2023
Duration end	01/03/2024

Datasets to be used

Datasets

- European Health Interview Survey (EHIS)

Type of confidential data

- Scientific use files (partially confidentialised data delivered to researchers)

Number of days requested in Eurostat safe 0

Description of variables

We are requesting access to EHIS data for the latest two waves (wave 2: 2013 - 2015, wave 3: 2019) and for all available countries. The target population will be the female participants included in the survey.
The EHIS datasets include various variable groups, including background variables on demography and socio-economic status, health status, health-care use, and health determinants. We will specifically be focusing on the following variables: INTMETHOD, INTLANG, PROXY, SEX, AGE, COUNTRY, REGION, BIRTHPLACE, CITIZEN, DEG_URB, MARSTADEFACTO, MARSTALEGAL, HATLEVEL, MAINSTAT, FT_PT, JOBSTAT, LOCNACE, HHNBPERS, HHNBPERS_0_4, HHNBPERS_5_13, HHNBPERS_14_15, HHNBPERS_16_24, HHTYPE, HHINCOME, HS1, HS2, HS3, CD1o, PN1, PN2, MH1a, MH1b, MH1c, MH1d, MH1e, MH1f, MH1g, MH1h, HO1, HO2, HO3, HO4, AM2, AM4, AM6b, PA8, UN1a, UN1b, UN2a, UN2b, UN2c, UN2d, BM1, BM2, PE6, PE7, PE8, FV3, FV4, SK1, SK3, AL1, AL6, SS1, SS2, and SS3 (for detailed description of these variables please visit the following link to a Google Doc file: https://docs.google.com/document/d/1NL43gmnaUpqrc9YfoHtZY1mjoxjgYjCSpXtw0WgAmh4/edit?usp=sharing).
Additionally, we request Eurostat for further information regarding some of the variables in order for us to conduct a comprehensive analysis.
Firstly, we recognise that the variables from MH1a to MH1h are the first eight questions from the PHQ-9 questionnaire, and we are uncertain whether data was collected for the question nine of this questionnaire (a question relating to suicidal thoughts). We understand the sensitive nature of this question, however it would allow us to calculate the full PHQ-9 score of depression severity. We therefore request Eurostat to provide us with this information, if available.
Secondly, the variable related to country of birth (BIRTHPLACE) includes categories for native-born, born in another EU member state, and born in a non-EU country. To facilitate a more in-depth analysis of the impact of country of birth on mental health, we request Eurostat to provide us additional information on this variable, such as the specific countries in which participants were born, if available. By doing so, we will be able to differentiate between migrants from low-and-middle income countries and high-income countries and investigate differences between particular country populations, which will enable us to explore their respective mental health outcomes. We

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acknowledge the potential identifiability based on the prevalence of individual country origins, and we would ensure that anonymity is maintained. Our wider research is particularly interested in Afghan migrants, so even if it is not possible to provide full country data, a flag for this particular country or any other sub-division of the non-EU group would be extremely useful.
Finally, due to the anonymisation rule, information on the variable related to language used for the interview (INTLANG) has been removed. We request Eurostat to provide us with this information, if available. This information would be vital for identifying non-native speakers who may face additional barriers to accessing mental health services and support. As with all data provided, we assure the Eurostat that the privacy and confidentiality of the data provided will be maintained throughout the research study.

Access to subsequent release Yes

How each of the chosen datasets will be

The EHIS dataset will be used to explore the relationship between migration and mental health outcomes. We plan to use this dataset to conduct various quantitative analyses, including descriptive statistics, regression analyses, and other statistical methods to examine the association between migration and mental health outcomes.

Methods of statistical analysis

We plan to use a variety of descriptive and inferential statistical analysis methods to examine the relationship between migration and mental health outcomes using the EHIS dataset as appropriate for our research questions:
1. To determine the prevalence of mental health problems mainly depression among migrant women compared to non-migrant women, we plan to calculate the prevalence and extent of mental health problems separately for each group. Mental health problems, i.e., depression, will be measured using the variables MH1a-MH1h (questions from Patient Health Questionnaire-9 (PHQ-9)) and other variables related to mental health. We will then use appropriate regression analyses, to compare the prevalence of mental health problems between the two groups.
2. To examine the impact of demographic and social factors on mental health among migrant women, we will use multiple linear regression analysis. The outcome variable will be mental health status as measured by the MH1a-MH1h. The explanatory variables will include age, marital status, parity, education, employment status, and household size. We also intend to control for other potential confounding variables, such as previous chronic health conditions, access to social support, BMI, smoking and alcohol consumption.
3. To investigate the associations between health determinants and mental health among migrant women, we will again use multiple linear regression analysis. The outcome variable will be mental health status as measured by the MH1a-MH1h. The explanatory variable will include BMI (calculated from the height and weight of participants), access to social support, comorbidities, diet, smoking and alcohol consumption. We will also control for potential confounding variables, such as age, marital status, parity, education, employment status, and household size.
In summary, this study will investigate the extent of mental health problems among migrant women compared to non-migrant women and examine the impact of demographic and social factors, as well as health determinants, on mental health among migrant women.

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Results

Expected outcomes of the research

We expect that our research using EHIS dataset will contribute to a better understanding of the association between migration and mental health outcomes. Specifically, we aim to determine whether migrants are at higher risk of mental health problems compared to EU citizens, and to identify the potential mechanisms underlying this relationship.
We anticipate that our findings will highlight the urgent need for targeted interventions to improve the mental health of this group. Our results may also inform policy makers and health care providers on the importance of developing tailored interventions for this vulnerable population.

How the results of the research will be

The study findings will be included in my Ph.D. and submitted for publication in peer-reviewed journals. This will allow the findings to be shared with the academic community and contribute to the limited literature on mental health and migration. In addition to submitting the findings for publication, the results will also be presented at conferences. Overall, the goal is to disseminate the findings of this study in a way that is both accessible and meaningful to different audiences and that has the potential to make a positive impact on the lives and well-being of the population of interest.

Security

Description of safekeeping of data

To ensure security and confidentiality of the data collected in this study, we will store the files securely in accordance with the guidelines provided in the 'Terms of use' (link: https://ec.europa.eu/eurostat/documents/203647/771732/Terms-of-use.pdf) document. All study data will be stored using the University of York password protected and encrypted filestore and accessible to only Yamma Khalid Aria (primary researcher), Amanda Mason-Jones and Ada Keding (the supervisory team). We will ensure that the data is encrypted and only accessible from password-protected computers in the research entity. We will ensure that the data is kept secure and confidential at all times and will comply with all relevant data protection laws and regulations. In addition, we will destroy the data at the end of the project in accordance with the guidelines provided in the 'Terms of use' document.

Description of anonymisation of results

To ensure the anonymity of the statistical units in published results of the research, the guidelines provided in the 'How to use microdata properly' (link: https://ec.europa.eu/eurostat/documents/203647/771732/Self+study+material) manual will be strictly followed. Additionally, the guidelines provided in 'Guidelines for publication' (link: https://ec.europa.eu/eurostat/documents/203647/771732/Guidelines+for+publication) will be followed throughout the research study. The minimum threshold of cell size will be respected, and any cells that do not meet the minimum threshold will be suppressed. We will use the higher threshold (>3 respondents) to further reduce the likelihood of any disclosure. Furthermore, any identifying information, such as names, addresses, and personal identification numbers, will not to be requested from Eurostat. Any published results will only report aggregate statistics, and no individual-level information will be disclosed.

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I hereby certify that the information contained in this questionnaire is complete, accurate and correct and that any future change will be reported immediately to Eurostat. I understand that Eurostat is authorised to check at any time the accuracy of the information given in this questionnaire. I understand that Eurostat may also request more information, if necessary.

I confirm that I submit this request in order to be granted access to confidential data for scientific purposes. The decision of Eurostat and the national statistical authorities providing the data may or may not authorise me to be granted access to confidential data for scientific purposes.

Furthermore, I commit myself to take and maintain all necessary measures in compliance with the requirements stated in the confidentiality declaration.

Principal researcher:

Name: YANMA KHALID ARIA

At: (please state location) University of York Date: 31 / 03 /2023

Signature:

Contact person in the research entity:

The contact person confirms by his/her signature that all persons quoted in the research project proposal are employed by, or formally related to, the research entity. The contact person shall inform researchers named in the research proposal about the obligations described in the terms of use of confidential data.
In case of a network project: the contact persons of each participating organisation sign for their staff (confirmation of participation).

Name: Dr MICHAEL BARBER

At: (please state location) UNIVERSITY OF YORK Date: 11 / 04 / 2023

Signature:

Appendix C: EUROSTAT Confidentiality Regulation

Research Project Proposal RPP 66/2023-EHIS

INDIVIDUAL CONFIDENTIALITY DECLARATION
(to be signed by all persons named in the research proposal)

Regulation (EC) No 223/2009 of the European Parliament and of the Council of 11 March 2009 on European Statistics provides the basic legal framework for the development, production and dissemination of European statistics. That Regulation foresees an additional possibility to give access to confidential data to researchers in the interest of scientific progress in Europe, subject to the strict obligation to respect the statistical confidentiality of the data.

I will be bound by all the terms and conditions of the confidentiality undertaking signed by the duly designated representative of my research entity and will use the dataset indicated in the research proposal in accordance with the terms of use attached to the confidentiality undertaking.
I will:
(a) use the dataset only for the purposes specified in the research proposal;
(b) safeguard the dataset and any usernames and passwords associated with it;
(c) ensure that any results of analyses will not be disclosive or potentially disclosive in conjunction with other publicly available information;
(d) acknowledge the dataset and its source in any research report or publication and also state that the results and conclusions are mine and not those of Eurostat, the European Commission or any of the national statistical authorities whose data have been used;
(e) provide Eurostat with references to publications and other research reports based on this dataset;
(f) preserve the confidentiality of information pertaining to identifiable individuals, households and/or organisations that are recorded in the dataset;
(g) submit the final complete output of my work for the confidentiality check to the competent Eurostat staff (in case of access to secure use files);
(h) destroy the dataset and any data or variables derived from it at the end of the research period specified in the research proposal and sign a declaration to the effect that it has been ensured that all data have been destroyed;
(i) abide by any other conditions notified to me by Eurostat (e.g. guidelines for publication);
(j) inform Eurostat immediately about any breach of the confidentiality rules laid down in the confidentiality undertaking or in the terms of use of confidential data for scientific purposes.

I will not:
(a) use the data (scientific use files) outside the premises of my research entity ;
(b) allow non-authorised users to access the dataset (authorized users are named in the research proposal);
(c) use the data for research purposes before it is checked for confidentiality by Eurostat (in case of access to secure use files)
(d) remove the data or any part of it (in case of access to secure use files);
(e) attempt to link the data to other (including public) datasets, whether or not provided by Eurostat, if not expressly agreed;
(f) attempt to identify any individual record (individual, household, business, etc.) in the dataset, or claim to have done so;
(g) release or publish any information or results which identify any individual record or may lead to the identification of any individual record.

I certify that I have read all of the above clauses, that I understand that I am accountable for correct and responsible use of the data and data access system, and that I understand that if I fail to comply with these clauses, my access to the dataset will be withdrawn and I will be liable to any other sanctions that may be determined by my research entity or are specified in the applicable civil or penal law.

Name: YANMA KHALID ARIA

Signature: 

Date: 31/03/2023

Ada Keding, 02/04/2023



Amanda J. Mason-Jones, 3.4.23



Appendix D: Policy Review

Guiding questions for the six dimensions as outlined in the framework's appendix

Effectiveness

• What are the effects of the public policy under study (positive, neutral, negative) on the targeted health problem?

• How effective is this policy in terms of its intermediate effects?

• Is the intervention logic of this policy plausible?

• How does the implementation context influence this policy's effectiveness?

• How much time is needed before effects can be observed? Do the effects persist over time?

Unintended Effects

• Does the policy under study produce unintended effects, whether positive or negative?

• How can the negative unintended effects be mitigated?

Equity

• What are the effects (intended or unintended) of the policy under study on different groups?

• Does this policy create, reinforce or correct social inequalities in health?

Cost

• What are the financial costs and gains for the government? For other actors (industry, community organizations, consumers, taxpayers, etc.)?

• How are the costs distributed over time?

• To what extent are the costs apparent?

• How do the costs of the policy under study compare with those of other potential policies, including that of inaction?

What is the cost-effectiveness of the policy under study for the government, for society?

Feasibility

• Are the required human, material, and technological resources available?

• Does the policy being studied fall under the legal jurisdiction of the authority who wishes to adopt it? Is it in conformity with existing legislation?

• Is this policy a follow-up to a pilot program?

• Can this policy be administered by pre-existing mechanisms?

• Is the authority promoting this policy also the one that will implement it?

• If not, how many different actors are involved in implementing this policy? Are they effectively guided by the policy's promoters? Do they cooperate well?

• Do the opponents of this policy have the ability to interfere with its adoption, its implementation?

Acceptability

• Which actors are or would be affected by the public policy under consideration?

• Is the problem targeted by this policy considered a social issue that requires intervention? What are stakeholders'

reactions to the idea of intervening to address this problem?

• How do stakeholders think the issue should be addressed?

• What do stakeholders think of the proposed policy? Of its effectiveness, its unintended effects, its equitability, its cost, and its feasibility? Of the degree of coercion it involves?

• What do stakeholders think of the conditions surrounding adoption and implementation of this policy?

• Can the policy's acceptability evolve during the period in which it is being implemented?

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