

**A Qualitative Study Exploring Perceptions of Physical Activity among Kuwaiti Older Adults**

**By:**

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# ABSTRACT

**Background**

Research targeting the health of older adults is limited in the Arab world, with most studies into physical activity (PA) behaviour being conducted in the West. Kuwaiti adults have low level of PA and high prevalence of obesity and chronic diseases, increasing burden on the health sector. Improving PA among this population could have positive influence in preventing and treating chronic disease.

There is a need for an in-depth understanding of appropriate, gender- and age-relevant physical activities which consider cultural, social and religious factors that are important to people in Gulf Cooperation Council (GCC) countries.

**Aims**

To explore perceptions and attitudes of older Kuwaiti adults and their significant others toward engaging in PA and provide suggestion for developing effective, culturally sensitive strategies to increase PA levels.

**Methods**

The research had two phases:

1. Systematic review to explore barriers/facilitators to PA among adults in the GCC. Twenty-one papers met the inclusion criteria.
2. Qualitative study: Face-to-face semi-structured interviews with older Kuwaiti adults and their significant others. Twenty-four interviews were conducted, with 32 participants. Data were analysed thematically using NVivo 10.

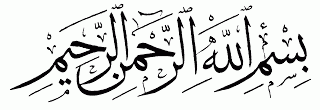
**Findings**

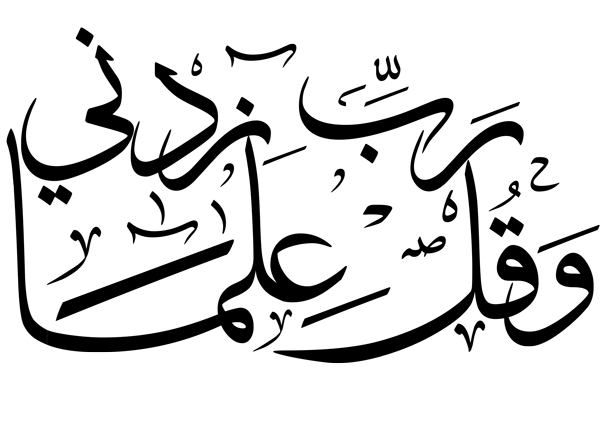
The systematic review identified barriers and facilitators influencing PA among adults in the GCC. These were synthesised according to an ecological model to intrapersonal, interpersonal and environmental levels. Included papers related to ‘adults’ generally, and no research targeted older people specifically.

Findings from the semi-structured interviews identified individual, social and environmental barriers to PA including Kuwaiti culture and weather which related to the complexity of PA behaviour. Findings showed that significant others in older adults’ lives, such as spouses, adult children, friends and health professionals, influenced PA behaviour. To overcome many cultural and social barriers that could prevent the regular adoption of PA, the findings suggested collaboration between health professionals and community leaders to deliver leisure-time family-based PA in the community.

**Conclusion**

This study is the first to explore the perceptions of older adults and their significant others regarding PA in Kuwait. The findings help to develop an understanding of the barriers/facilitators to PA among older people in Kuwait, including their own ideas for improving levels of PA. Findings suggest that PA promotional strategies targeting older adults should be culturally sensitive, age appropriate and designed to target the family as a whole to be effective. The results of the research will inform practitioners and policymakers of culturally appropriate PA promotion guidelines for older people in Kuwait.



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**{…and say: O my Lord! Increase me in knowledge}**

The Holy Qur’an, Chapter 20- Taha: Verse 114

**DEDICATION**

To the memory of my beloved brother

**Abdulmalik Alkhezi (1991–2009)**

Who tragically died in a car accident in January 2009, at age 17.

He always had something nice to say, and his unexpected death opened my eyes to life and helped me to re-value my own life.

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The Holy Qur’an, Chapter 17- Al-Isra’: Verse 24

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# LIST OF ABBREVIATIONS

ADL: Activity of Daily Living

CASP: Critical Appraisal Skills Programme

CHD: Coronary Heart Disease

GCC: Gulf Cooperation Council

GDP: Gross Domestic Product

HBM: Health Belief Model

HHS: U.S. Department of Health and Human Services

HRQOL: Health Related Quality of Life

KGO: Kuwait Government Online

KOC: Kuwait Oil Company

KPC: Kuwait Petroleum Cooperation

KSA: Kingdom of Saudi Arabia

LBP: Low Back Pain

METs: Metabolic Equivalent of Task

MOH: Ministry of Health

NCD: Non-Communicable Disease

NIH: National Institutes of Health

PA: Physical Activity

PACI: Public Authority of Civil Information

PPM: Precede-Proceed Model

QOL: Quality of Life

RCT: Randomised Controlled Trial

SCT: Social Cognitive Theory

TPB: Theory of Planned behaviour

TRA: Theory of Reasoned Action

TTM: Transtheoretical Model

UAE: United Arab Emirates

UK: United Kingdom

UN: United Nations

USA: United States of America

WHO: World Health Organisation

**CHAPTER 1 - INTRODUCTION TO THE THESIS**

# Introduction

My motivation for this research is both personal and professional. I always put great emphasis on physical activity (PA) as an essential step in being healthy. This view was further developed when I become a physiotherapist. In this role, I mainly treated people aged 50 years and above, many of whom suffered from chronic diseases. As a physiotherapist, I was aware of the importance of adopting a more active lifestyle and how this can help in not only reducing the symptoms of chronic diseases but also preventing these symptoms in the first place. Unfortunately, in Kuwait, there are no guidelines about promoting PA, particularly amongst older people, so the main problem was that I did not know how to go about this. The second challenge I faced during my work was that this age group usually do not adhere to their exercise treatments and do not take the advice they receive about their PA in general. I had the same problem when trying to advise my older relatives to be more active. It was for these reasons that I was motivated to explore how older adults perceived PA, what barriers prevented them from adopting PA and what might motivate them to be more active. I conclude my thesis with some recommendations that may help promote PA amongst older people that are particularly suited to the Kuwaiti culture and environment.

# Outline of Thesis

This thesis contains 11 chapters. A brief overview of each chapter is presented. In Chapter 2, an overview of the Kuwaiti context is introduced. The chapter focuses on Kuwait’s geography, history, culture, social and economic developments and health problems.

Chapter 3 presents a description of the ageing population and successful ageing, and definitions, classifications and the public health agenda related to PA. The benefits of PA, theories of health behavioural change, barriers and motivators to PA among older adults and the importance of a culturally appropriate health promotion programme are also discussed.

In Chapter 4, a systematic review of the barriers and motivators of PA among adults in the Gulf Cooperation Council (GCC) region is presented. Chapter 5 discusses the research rationale, research questions, aims and objectives.

Chapter 6 discusses the research approach, sampling, recruitment and data collection methods, the data analysis, ethical issues and potential problems and difficulties in the research. In Chapter 7, background about each participant is presented.

Chapter 8 presents the first theme from the data analysis, which is the barriers to PA among older Kuwaitis. Chapter 9 discusses the second theme from the data analysis, which is the role of family, friends and health professionals in influencing older adults’ PA attitudes and behaviours. Chapter 10 presents the third theme from the data analysis, which is strategies and ideas to improve the PA level among older adults in Kuwait.

Chapter 11 consists of discussion of the results in detail by comparing them with and contrasting them to those in the literature. The chapter continues by outlining the implications for policy and practice, as well as the strengths and limitations of the study. Finally, suggestions for future research and the study’s contribution to knowledge in this field are presented.

# CHAPTER 2 - OVERVIEW OF THE KUWAITI CONTEXT

This chapter sets out the context to my research, including background about Kuwait and Kuwaiti lifestyle, and finally health problems and healthcare delivery in Kuwait.

# 2.1. Kuwait

## 2.1.1. Geography

Officially, the State of Kuwait is an eastern Mediterranean country (World Health Organization [WHO], 2015a) on the Arabian Peninsula. It borders the Republic of Iraq to the north and north-west, the Kingdom of Saudi Arabia (KSA) to the south and south-west and the Arabian Gulf to the east. Kuwait’s total area is 17,818 km2, including nine islands (Al-Diwan Al-Amiri, 2018; Kuwait Government Online [KGO], 2018). The State of Kuwait is distributed into six governorates, namely the Capital, Hawalli, Al Farwaniya, Al Ahmedi, Mubarak Al Kabir and Al Jahra (Al-Diwan Al-Amiri, 2018). In 1981, Kuwait and five other countries on the Arabian Peninsula – the KSA, Qatar, the United Arab Emirates (UAE), Bahrain and Oman – established the Gulf Cooperation Council (GCC). These six countries share a similar geography, environment, religion, language, history, traditions and economy (GCC, 2018).

## 2.1.2. Climate

As Kuwait lies in a desert area, it has a continental climate which is characterised by dry, hot, long summers and short, warm winters with little rainfall. Dust storms are very common during summer, with temperatures reaching 50°C in the shade; during winter, the temperature ranges from 0°C to 18°C (Al-Diwan Al-Amiri, 2018; KGO, 2018; Meteorological Department, 2017).

## 2.1.3. Population

The total population of Kuwait is 4,504,073 persons, of which 1,363,543 are Kuwaitis, while the rest are foreign nationals (Public Authority of Civil Information [PACI], 2017). In 2013, approximately 25% of the population was under the age of 15, while 4% was over 60 years of age (WHO, 2015a). Kuwait’s young population may be due to the high fertility and low infant mortality rates (Ministry of Health [MOH], 2008). However, population statistics from around the world show that people aged ≥60 years represent the fastest growing population segment (United Nations [UN], Department of Economic and Social Affairs, Population Division, 2017). In Kuwait, the percentage of people ≥60 years is expected to increase from 3.4% in 2015 to 20.1% in 2050; meanwhile, the percentage of people aged +80 years will increase from 0.2% in 2015 to 1.9% in 2050 (UN, Department of Economic and Social Affairs, Population Division, 2015b). This increase in the ageing population is due to the decline in fertility rate, increased life expectancy and reduction in mortality (UN, Department of Economic and Social Affairs, Population Division, 2017).

## 2.1.4. Language and Religion

Arabic is the official language in Kuwait (Al-Diwan Al-Amiri, 2018); this is the language of the Holy Quran. Most GCC countries have their own local dialects (Yeatts et al., 2012), and Kuwait is no exception. Kuwaitis speak their own dialect of Arabic; this is similar to classic Arabic but has distinct characteristics (KGO, 2018). Islam is the official religion in Kuwait and has an extensive influence on everyday life (Al-Diwan Al-Amiri, 2018; KGO, 2018).

## 2.1.5. Economic Development

Before the oil era, Kuwait had limited income. Historically, Kuwaitis living near the sea depended on fishing, pearl diving and trading for their livelihood; people living in the desert depended on sheep and camel herding; and people living near agricultural areas depended on farming (Al-Diwan Al-Amiri, 2018). In 1938, oil was discovered in the Burgan field; this is now considered one of the largest oil fields in the world. In 1946, the first oil shipment left a Kuwaiti port, and in 1975, Kuwait’s oil industry was nationalised (Kuwait Oil Company [KOC], 2012; Kuwait Petroleum Cooperation [KPC], 2017). Nowadays, the GCC countries are the richest of the Arab countries, with the highest gross domestic product (GDP) per capita (Saxena, 2013). Kuwait is a high-income country; its GDP was US$ 110.8 billion in 2016 (World Bank, 2018), with 80% of governmental earnings coming from the petroleum trade. Crude oil reserves in Kuwait represent 10% of the world reserves (Al-Diwan Al-Amiri, 2018). Similar to most GCC countries, Kuwait may be considered an urban society (El-Haddad, 2003), with 98% of the population living in urban areas (WHO, 2015a). The government provides social amenities and good healthcare and education services (WHO, 2017a).

# 2.2. Kuwaiti Lifestyle

## 2.2.1. Religious/Cultural and Family Norms

In the past, Kuwait had three traditional societies: nomadic tribes (Bedouin or desert dwellers), farmers and fishermen (non-Bedouin; KGO, 2018). These societies lived in a harsh desert environment. In these arduous surroundings, individualism was not an option, as it was necessary for people to belong to a tribe and support one another in order to survive. Thus, traditional Kuwaiti society developed as a collectivist culture with the family as the main unit and a high degree of social support (El-Haddad, 2003). The tribe was expected to provide support for its members (KGO, 2018). Like most Arabs, Kuwaitis were family-oriented and saw loyalty to the family as an obligation; the interest of the family came before that of the individual (Hammad et al., 1999). Intergenerational co-residence was the norm in Kuwait. Most people lived in a traditional extended family, which provided stability, coherence and support (Dhami and Shaikh, 2000) and helped to build strong ties between members (KGO, 2018).

After the swift modernisation that occurred in the country, the social structure shifted, and the nuclear family started to be the dominant and preferred type of family. The nuclear family in Kuwait is relatively large (El-Haddad, 2003), with an average of eight members living in the household excluding domestic workers (MOH, 2008; MOH, 2013). The nuclear family in Kuwait and most Arab countries continues to be characterised by a sense of solidarity and closeness with extended relations. Traditional kinship ties were retained even after urbanisation; today, most kin interact on a daily or weekly basis. Most families prefer to live next door to other family members, as this arrangement provides the necessary privacy and freedom of the nuclear family (Dhami and Shaikh, 2000) and reduces conflicts. At the same time, it facilitates interaction between family members, resulting in stronger ties amongst relatives and preventing isolation and loneliness. Assistance from family members in times of need is also a norm (e.g. illness, child care, financial and business issues; Al-Thakeb, 1985). The economic changes in Kuwait have affected the functions of the family. For example, the dependence on foreign servants [all servants are non-Kuwaiti] (Shah et al., 2002), high levels of education and women’s involvement in the work force all represent factors which have changed the role of the husband and wife (El-Haddad, 2003). Engagement in social activity is common among Kuwaitis, such as attending religious activities and weddings, meeting in the homes of others and going out to malls and beaches in summer and desert camps in winter (MOH, 2013).

In addition to the influence of the tribal culture, Kuwaiti culture is also dominated by the religion of Islam, which is seen as a ‘comprehensive way of life’. To Muslims, God is the originator of all fate; success comes from God, but errors come from humans. There is a total dependency on God in every aspect of life. Modesty is one of the most important Islamic principles, as the body is private and should be concealed from the opposite gender. Men should be covered from at least the navel to the knees, while women should cover their whole body, excluding their face and hands. Wearing the head veil (hijab) is a woman’s religious duty (Al-Oraibi, 2009; Hammad et al., 1999; Rashidi and Rajaram, 2001). Traditional clothing has been influenced by the perception of modesty. Although Arab attire has changed to suit the current cultural and environmental conditions, as most men and women now wear Western-designed garments, the traditional costume is still commonly worn (KGO, 2018), especially amongst older adults. Gender segregation is another societal norm (Yeatts et al., 2012) encouraged by Islam (Al-Oraibi, 2009; Dhami and Shaikh, 2000; Hammad et al., 1999; Rashidi and Rajaram, 2001), so interaction between genders is usually limited to relatives.

## 2.2.2. The Status and Lifestyle of Older People in Kuwait

The Arab Islamic culture confers a very high status on older adults. They are respected and admired. The Prophet (peace be upon him) said, ‘He is not one of us, who does not show mercy to our young ones and does not respect our old ones’ (At-Tirmidhi, 1919). In a collectivist, interdependent society, cultural traditional norms compel families to provide support to older adults; immediate family members are responsible for taking care of their older relatives who have lost the ability to care for themselves (Al-Oraibi, 2009; Musaiger and D’Souza, 2009; Rashidi and Rajaram, 2001). A survey carried out by Shah et al. (2002), to examine the living arrangements of 687 Kuwaiti males and females aged 60 years and over found that most older people live with their adult children and those who do not expect a visit from them regularly (on a daily basis). These regular visits are facilitated by Kuwait’s small size, which means that parents usually live within driving distance of their children (Shah et al., 2002).

According to Arab cultural standards, it is considered shameful to place parents in a nursing home. Children are taught to obey their parents and respect older adults (Hafez et al., 2000; Hammad et al., 1999). Taking care of older adults is not only a religious duty or a parental right (Al-Oraibi, 2009; Dhami and Shaikh, 2000); rather, it also shows compassion, which is seen as a gateway to paradise (The Holy Qur’an, 17). Visiting people who are sick is another religious tradition in Islam (Al-Oraibi, 2009; Hammad et al., 1999; Muslim, 2596; Rashidi and Rajaram, 2001). Muslims are encouraged to visit their parents’ friends regularly and provide aid when necessary (Abu Dāwūd, 5124).

A study by Muaiger and D’Souza (2009), which assessed the perceptions and attitudes of 305 Kuwaiti adults (20–60 years old) towards older people, found that only 1.6% agreed that older people should be cared for in nursing homes. This indicates a positive attitude toward the care of older people within the family (Musaiger and D’Souza, 2009); however, the huge socioeconomic changes Kuwait has witnessed in recent decades may also have weakened the role of the older generation (El-Haddad, 2003). Nevertheless, older adults are still seen as fundamental members of the Kuwaiti family, and when care is provided for them, it contributes to a healthy ageing process (Musaiger and D’Souza, 2009). Al-kandari (2011a) conducted a study with 1,427 participants to examine the relationship between social support, hypertension and general health amongst older Kuwaiti adults who live with their families and receive care from a mobile care unit (a home care arrangement). The findings showed a direct positive relationship between social support and general health status, indicating that social support and social networking have a positive influence on older adults’ lives. Another study examined the relationships amongst religiosity, social support, and health among 1,472 older Kuwaiti adults (≥60 years) and showed that religiosity has a strong impact on well-being. Positive relationships were shown between religiosity, social support and systolic and diastolic blood pressure (Al-Kandari, 2011b).

# 2.3. Physical Activity in Kuwait and the GCC

Islam encourages Muslims to take care of their health, as a healthy body is a gift from God and must be maintained and protected. Any harmful food or action, such as smoking, is forbidden. Islam also encourages moderate eating (Al-Oraibi, 2009; Rashidi and Rajaram, 2001) and engaging in PA to maintain good health. The Prophet Mohammad (peace and mercy of god be upon him) said, ‘any action without the remembrance of Allah is either a diversion or heedlessness excepting four acts: Walking between targets [during archery practice], training a horse, playing with one’s family and learning to swim’ (Tabarani). In addition, Omar ibn Al-Khattab (2nd Caliphate) exhorted parents to ‘teach your children swimming, archery and horse-riding’. Thus, being active is an Islamic teaching which may give Muslims the necessary strength to carry out their religious duties. Prayer (Salat), the second pillar of Islamic faith, is a form of short, frequent PA carried out five times daily (Reza et al., 2002).

Although economic affluence has positively affected Kuwaitis’ lives, it has also had a negative effect on aspects of their lifestyles (Ng et al., 2011). The increased wealth from oil and the rapid transition from rural to urban living changed the dietary habits (WHO, 2004) of Kuwaitis, such that they now frequently consume food which is high in salt, partially hydrogenated fat and calories due to the influx of Western foods (Popkin, 2006) and the economic ability to buy richer local food (Abdul Rahim et al., 2014). Moreover, the physically demanding jobs Kuwaitis did traditionally, such as fishing, diving and pearl gathering, have been replaced by less physically demanding professional and administrative work with less energy expenditure (Popkin, 2006; WHO, 2004). There has also been increased reliance on foreign domestic workers for housework, where every house has at least one helper (Shah et al., 2002), as well as reliance on cars for transportation and heavy use of computers, the internet and mechanised appliances (Abdul Rahim et al., 2014). Due to this radical change in lifestyle, new health problems have started to appear in the society. The Kuwait STEPS Survey 2014 was a three-step population-based survey for adults 18–69 years old aiming to obtain core data about the disease burden and risk factors in the Kuwait population (MOH, 2015). The study included 4,391 participants; socio-demographic and behavioural information were collected in step 1, physical measurement (which included anthropometric measurement, blood pressure and heart rate) in step 2 and biochemical measurement (which included fasting blood sugar, total cholesterol, high-density lipoprotein) in step 3. A STEP-wise approach to chronic disease risk factor surveillance was initiated by WHO in 2000 (but adopted in Kuwait in 2006 and repeated in 2014). It is a systematic and sustainable framework with a standardised protocol which uses culturally specific examples to assure full understanding of the questions. In Kuwait, the results showed that 62.6% of the participants reported a PA below the WHO-recommended level (WHO recommendations are discussed in Section 3.3.3). Participants aged 60–69 years old accounted for the highest percentage of those not meeting WHO PA recommendations (78.8%). Moreover, 63% of the sample reported doing no recreational activity at all, while 81.5% reported not doing transport activity (such as walking). Ultimately, 68.9% of respondents were found to have low total daily PA (<600MET) (MOH, 2015). Factors that affect older adults’ PA were not mentioned, so research to explore the reasons for older adults’ low level of PA is needed in Kuwait.

A review of eight population survey studies conducted in five GCC countries (KSA, Bahrain, Qatar, UAE and Kuwait) examining prevalence of PA among adults also showed low prevalence of PA among both males and females (age range 15-69 years old) in the region, although the prevalence was lower in females (Mabry et al., 2010). The review showed that this gender variation was related to sociocultural and environmental factors, such as the traditional role of women, hot weather and depending on cars for transport (Mabry et al., 2010). In addition to Mabry et al.’s (2010) review, several other studies have investigated PA level in the GCC area. For example, a cross-sectional study examined the level of PA among Saudi women and the association between PA and health beliefs. The study included 161 Saudi female participants (19-44 years old) and used a pedometer to measure step counts (average daily steps: 5,1142,213). A low level of PA was found among young Saudi females, and the results showed that health behaviours are associated with health beliefs and self-efficacy (Al-Eisa and Al-Sobayel, 2012). Similarly, another cross-sectional observational study conducted by Ng et al. (2011) included 628 Emirati households and used the International Physical Activity Questionnaire (IPAQ) to assess PA among children, adolescents and adults (females only) (≥19 years). Low levels of PA were also found among the 478 Emirati women who participated in the study, with only 41% of participating women having a moderate or high PA level. The GCC area has a low prevalence of PA (<50%) compared to other regions globally (Hallal et al., 2012). PA is lower in high-income GCC countries compared to other Arab countries such as Tunisia and Comoros (Abdul Rahim et al., 2014). The lowest levels of PA in the eastern Mediterranean region have been found in Kuwait and the KSA, where 60% of adults are inactive according to the WHO recommendations (Bull and Milton, 2014; MOH, 2013). In a pooled analysis of 358 population-based surveys reporting the prevalence of insufficient PA (based on WHO PA recommendations; see Section 3.3.3), Kuwait had the highest prevalence of physical inactivity (67%) compared to all included countries (Guthold et al., 2018). The world health survey in Kuwait (2013), which included 2,523 Kuwaiti households, showed that the level of PA decreases with age, especially among Kuwaiti males; those with insufficient level of PA increased from 45% for males <30 years to >82% for males aged ≥60 years (according to WHO recommendations for PA) (Furthermore, physical inactivity is a major risk factor for NCDs).

# 2.4. Health in Kuwait

The world health survey in Kuwait (MOH, 2013) showed that amongst the 2,523 Kuwaiti household respondents, 3.5% had angina, 16.1% had osteoarthritis and 25.4% had hypertension. Kuwait, the KSA and Qatar are amongst the top 10 countries (globally) in terms of the prevalence of diabetes in adults; in Kuwait, 23.1% of adults are diabetic and 17.9% have impaired glucose tolerance (International Diabetes Federation, 2013). Seventy-six per cent of all deaths in Kuwait are due to NCDs, particularly coronary heart disease and cancer; cardiovascular disease alone is responsible for 41% of the total deaths (WHO, 2014c). Shah et al. (2010) conducted a study that included 2,487 Kuwaiti persons aged ≥ 50 years. The analysis reported a prevalence of diabetes, hypertension and heart disease among Kuwaiti older adults of 53.4%, 50.6% and 17.5%, respectively.

Kuwait’s world health survey (MOH, 2013) also showed that 71.9% of the 1,523 Kuwaiti respondents were overweight or obese based on BMI calculation. Furthermore, 90% of females (≥45 years) were found to be obese/overweight, and 70% of the sample 60–69 years old classified as obese. The prevalence of obesity is high (Abdul Rahim et al., 2014) throughout the GCC countries. Badr et al. (2013) conducted a cross-sectional face-to-face survey to explore the prevalence of overweight and obesity among 2,487 older Kuwaiti males and females (aged ≥50 years), using height and weight measurement to calculate their body mass index (BMI). The researchers found that 81% of participants were overweight and 46% of them were obese (mean BMI 30) (Badr et al., 2013). Relatively young older adults (50-59 years old) were more likely to be overweight and obese than the eldest older adults (≥70 years). Badr et al. (2013) attribute the lower prevalence of obesity among the eldest older adults to loss of appetite and increased morbidities sometimes associated with ageing. Women were 3.6 times more likely to be obese than men. Married persons had a higher risk of being obese than non-married ones. Overweight and obesity were found to be independent risk factors for diabetes, hypertension and osteoarthritis. However, as the study was cross-sectional with regression analysis to identify associations, causal relationship between obesity and comorbidities can’t be assessed.

# 2.5. Healthcare Delivery in Kuwait

In Kuwait, before modernisation, infectious diseases represented a major cause of death, but after the development of the healthcare sector and primary care, NCDs became the leading cause of death (Abdul Rahim et al., 2014; MOH, 2008; MOH, 2013). Kuwait has a strong health infrastructure and service, which is free of charge at the point of use for Kuwaitis (WHO, 2014b). The country has three levels of healthcare delivery – primary, secondary and tertiary. In 2014, general government expenditure on health represented 5.77% of the total government expenditure (WHO, 2017a). As of 2012, the MOH had five general hospitals (one in each health region), as well as the specialised Sabah Medical Centre (including the Sabah General Hospital), nine specialist hospitals, 94 primary healthcare clinics and 73 diabetes clinics. Healthcare is also provided by 12 private sector hospitals, which are not free at the point of delivery, and three hospitals belonging to oil companies, which only serve the oil companies’ employees and their families. The Kuwait MOH has a very effective curative approach, but the statistics related to NCDs indicate a shift is required to a preventive approach to reduce the mortality and morbidity resulting from these diseases (WHO, 2014b; MOH, 2013), especially among older adults (Kronfol et al., 2013).

Physiotherapists are an important part of the healthcare system in Kuwait. In 2013, 235,206 outpatient visits were recorded for physiotherapy departments in different general hospitals in Kuwait (National Centre of Health Information, 2013). There is a physiotherapy department in every hospital in Kuwait, and patients need a referral from a medical practitioner to be able to use physiotherapy services. Most of the cases treated in the physiotherapy department include sport injuries, recovery from surgery and rehabilitation and treatment for chronic musculoskeletal disorders such as arthritis, especially among older adults. The World Confederation for Physical Therapy (WCPT) (2011) explained that physiotherapists have obligations as care providers to promote public health and help in designing programs to tackle the NCDs (WCPT, 2011a), and that physiotherapists’ knowledge of exercise and physiology may confer an advantage in designing PA programs (WCPT, 2011b). Therefore, physiotherapist departments in Kuwait are in a suitable position to explore the possibilities of promoting PA among older adults in Kuwait.

# 2.6. Chapter Summary

In summary, there have been significant changes to Kuwaiti lifestyle after the discovery of oil in 1938. These include a reduction in physically demanding jobs, an increased dependence on domestic servants for housework and an increase in use of cars for transportation. This has resulted in a reduced level of PA among Kuwaitis, especially older adults, and an increased prevalence of obesity and NCDs such as diabetes, hypertension and cardiovascular disease. The next chapter will include a literature review of the ageing population; a discussion of successful ageing; and an overview of PA, the public health agenda of PA, and the benefits, barriers and motivators of PA.

# CHAPTER 3 - OLDER ADULTS AND PHYSICAL ACTIVITY

This chapter includes a review of literature concerning ageing populations and successful ageing, as well as definitions, classifications and the public health agenda for PA. This chapter also discusses the benefits of PA, theories of health behavioural change, barriers and motivators for PA among older adults and the importance of a culturally appropriate health promotion programme.

# 3.1. Search Strategy

The search strategy used for this study identified relevant literature regarding the promotion of PA among older adults. Using a combination of terms (Table 3-1), MEDLINE, EMBASE, PubMed, Cochrane library, CINAHI, Web of Science and PsycINFO were searched for articles published between January 2000-2018. The search included articles and books published in English. Abstracts were scanned to locate appropriate articles and, where the abstract was unclear, the full paper was retrieved. Further relevant papers were identified by retrieving reference lists from related papers to build up the body of literature.

*Table 3-1 Search strategy*

|  |
| --- |
| #1. physical activity OR exercise OR inactivity OR physical fitness |
| #2. health promotion OR health campaigns OR promotion of health OR health education OR health advice |
| #3. elderly OR older adults OR aged 50 and over OR ageing OR geriatric OR senior OR frail |
| #4. lifestyle OR health behaviour OR behaviour change |
| #5. community OR population OR culture |
| #6. attitude OR belief OR perceptions  #7. motivator OR barrier OR factors OR influencer OR facilitator OR enabler OR predictor |

The search yielded a large amount of papers, only the most relevant papers were examined, which were those relating to older adults and PA. A decision was also taken to select systematic reviews when applicable and then extract papers included in the reviews as needed. If many papers covered the same subject, the most recent papers were chosen.

# 3.2. Older Adults

## 3.2.1. Definition

People aged 60 years and older are typically classified as older adults (WHO, 2002b), although in some research, people are classified as older adults when they reach 50 years of age (Ford and Hurst, 2008). Classification of older adults solely based on chronological age may not be accurate, as older adults are not a homogenous group and there are differences in health and levels of independence between individuals of similar age (WHO, 2002b; UN, 2015a; Saxena, 2013; Sanderson and Scherbov, 2013).

There is a global trend toward ageing due to reductions in mortality and fertility rates (UN, 2015a; WHO, 2011), and this trend is visible in the Arab world (Kronfol et al., 2013; Saxena, 2013). The number of oldest-old (≥80 years) individuals is expected to increase (UN, 2015a). As females have a higher life expectancy, they constitute a larger proportion of the ageing population (UN, 2015a; WHO, 2002b).

## 3.2.2. Natural Ageing Process

Ageing is defined as ‘progressive, generalised impairment of function resulting in loss of adaptive response to a stress and in a growing risk of age-associated disease’ (Kirkwood, 1996, cited in WHO, 2002b, p26). Several theories have attempted to explain the complex process of ageing (Kirkwood, 2002). The normal ageing process may include reductions in movement, sensory, cognitive or immune functions (WHO, 2015b; Chodzko-Zajko et al., 2009). Multi-morbidity, dementia, frailty and falls are some of the health problems faced by older adults (WHO, 2015b). The risk of developing non-communicable diseases also increases with age, while physical activity levels typically decline (Chodzko-Zajko et al., 2009; UN, 2015a; WHO, 2002b).

Several internal and external factors may affect the ageing process. The effects of genetic, psychological and internal factors on the ageing process varies between individuals, while external, behavioural and environmental or lifestyle factors may have a greater effect on the ageing process (WHO, 2002b; Ford and Hurst, 2008; WHO, 2015b). Gender differences are also noted, as women usually experience morbidity more frequently than men (UN, 2015a). Genetics, early life experiences and environmental factors can play a role in developing non-communicable diseases (NCD) during an individual’s lifespan and may affect the ageing process (Aboderin et al., 2002; WHO, 2002b).

Ageing can have social and economic consequences (UN, 2015a). NCD are the leading cause of disability in older people (UN, 2015a), causing older adults to be the primary users of health-care systems. As the care needs of older adults are diverse and complex (Ford and Hurst, 2008; WHO, 2011), these needs may increase health care and social security expenditures (Silcock and Sinclair, 2012; UN, 2015a; WHO, 2002b; WHO, 2015b; WHO, 2011).

## 3.2.3. Effects of Gender and Culture on Older Adults

Norms, traditions and values may affect how society views older adults and the ageing process. Culture may have a primary effect on the ageing process, as it can affect the daily lives of older adults. For example, living arrangements differ between cultures and can affect the ageing process. In developed countries, three quarters of people aged 60 years and older live independently, compared to only one quarter in developing countries. In the latter, intergenerational co-residence and strong family support may be cultural norms (Kronfol et al., 2013; UN, 2013). However, as global cultural norms shift and are affected by urbanisation (WHO, 2015b), independent living among older adults is becoming more common in developing countries (UN, 2013).

Misconceptions and negative assumptions may affect older adults in many parts of the world. According to the WHO (2015b), older adults may be stereotyped and discriminated against based on their age; this is called ‘ageism’. Older adults may be viewed as frail, dependent and powerless (Rizzo and Seidman, 2009; Saxena, 2013). For example, in the Arab world, older adults are sometimes seen as passive members of society (Kronfol et al., 2013) and are usually neglected by the media, which predominantly advertise that countries are developed by younger generations (Saxena, 2013).

Gender may also play a role in the lives of older adults, as status differences between women and men exist in many cultures. For example, Arab culture is considered male-dominated, so men may have more freedom (Saxena, 2013). Some activities, such as specific jobs and outdoor PA, are viewed as unacceptable for women. In Arab culture, a woman’s role is usually limited to that of family caregiver or housewife (Saxena, 2013), though this may be specific to older adults as younger women become more empowered and gain freedom to join the workforce and participate in leisure activities (Saxena, 2013).

## 3.2.4. Successful, Active and Healthy Ageing

As life expectancy and the number of older adults increases, the chances of developing NCD rises and it becomes necessary to develop strategies for improving quality of life (QOL) and reducing disabilities (WHO, 2002b; Aboderin et al. 2002) in the ageing population. Rowe and Kahn (1987) define successful ageing as ‘the absence of disease and disease-related disability, maintaining high cognitive and functional capacity, and active engagement with life’ (p.433). In the late 1990s, the WHO adopted the ‘active ageing’ approach (WHO, 2002b), which is defined as ‘the process of optimising opportunities for health, participation and security in order to enhance quality of life as people age’ (WHO, 2002b, p.12). ‘Healthy ageing’ is a similar term and means ‘the process of developing and maintaining the functional ability that enables well-being in older age’ (WHO, 2015b, p28).

## 3.2.5. The Role of Physical Activity in Successful Ageing

The importance of PA has been well documented. Physical inactivity is one of the leading public health problems of the 21st century (Blair, 2009), and is the fourth leading cause of death worldwide (WHO, 2010). In 2008, physical inactivity (defined as activity levels insufficient to meet WHO PA recommendations) caused 9% of all premature deaths globally (Lee et al., 2012), while 6-10% of the major NCDs (coronary heart disease, type 2 diabetes, and breast and colon cancers) diagnosed globally were caused by physical inactivity (Lee et al., 2012). In the U.S., inactivity and obesity comprised 9.4% of the total governmental health care spending (Colditz, 1999). Data from 122 countries shows that, globally, 31.1% of adults (≥15 years) are inactive (95% CI) and in 2011, rates of physical inactivity reached 43% in Eastern Mediterranean countries. 41.4% of adults in the Eastern Mediterranean region typically spend four hours or more per day engaged in sedentary behaviour (time spent sitting) (Hallal et al., 2012). Levels of PA tend to decrease in affluent countries (Hallal et al., 2012), with older adults and women usually being the least active members of society (WHO, 2010; Hallal et al., 2012). This was confirmed in a study by Guthold et al. (2008) that estimated the variability in levels of physical inactivity (defined as not meeting the current WHO recommendation for PA) among 212,021 participants from 51 countries using data from the World Health Survey (2002-2003). The analysis showed that prevalence of physical inactivity differed between countries, but in general, older adults (60-69 years old) were found to be less active than other age groups. Living in urban areas was also associated with reduced physical activity (Guthold et al., 2008). A low prevalence of PA was found among participants from the UAE (the only GCC state to be included in the study), particularly among women, with 37.9% of men and 56.7% of women found to be inactive (Guthold et al., 2008).

PA, however, could be a modifiable factor that may help people to age successfully (Chodzko-Zajko et al., 2009; WHO, 2015b; Heo et al., 2013). Adopting a healthy lifestyle (including an adequate level of PA), even later in life, may help prevent diseases and functional decline and improve QOL (WHO, 2002b). The current biomedical orientation of health services is not enough to address the needs of older adults, and a shift toward a more comprehensive approach to health care is needed (Kronfol et al., 2013; WHO, 2002b), with a greater focus on health promotion and prevention.

The WHO framework for action emphasises the importance of designing community-based approaches to health promotion by fostering an environment that encourages healthy choices (WHO, 2002b). For programmes to be effective, cultural contexts and gender differences should be considered during the design process (WHO, 2002b). Considering the needs, preferences and capacities of older adults is an important process for ensuring acceptance and long-term effectiveness of PA promotion programmes (WHO, 2015b).

# 3.3. Physical Activity

## 3.3.1. Definition and Classifications

The WHO defines PA as ‘as any bodily movement produced by skeletal muscles that requires energy expenditure’ (WHO, 2010). Based on psychological, behavioural and contextual aspects, PA may be classified into the following categories:

1. Occupational activities related to work performance (WHO,2002a; Ainsworth et al., 2011; Howley, 2001; Marttila et al., 1998)

2. Lifestyle activities, including routines of daily living, which can be further subdivided into two categories (WHO, 2002a; WHO, 2010; Department of Health, 2011; Ainsworth et al., 2011; Marttila et al., 1998):

a. Domestic, including household tasks and daily, family and community activities

b. Transportation or active commuting (e.g., walking or cycling)

3. Leisure activities (WHO, 2002a; WHO, 2010; Department of Health, 2011; Ainsworth et al., 2011; Howley, 2001; Marttila et al., 1998), including:

a. recreational activities, such as playing games

b. exercise, which may be performed for fitness or health improvement

c. sports, which may include some competitive aspects

Additionally, PA may be classified by frequency, duration and intensity. PA intensities may be classified as light (1.6-2.9 Metabolic Equivalent of Task [METs], such as slow walking or ironing), moderate (3-5.9 METs, such as dancing or gardening) and vigorous intensity (≥6 METs, such as running or competitive sports) (Ainsworth et al., 2011).[[1]](#footnote-1)

## 3.3.2. Historical Perspectives on Physical Activity and Health Research

The importance of PA was mentioned by Hippocrates over 2,000 years ago. In the mid-20th century, Professor Jeremy Morris and his colleagues, medical researchers from the United Kingdom (UK), carried out the first studies to demonstrate a causal relationship between (occupational) PA and health outcomes. They conducted seminal quantitative studies to show the protective ability of PA, especially vigorous exercise, against coronary heart disease (CHD) (Morris and Crawford, 1958). The first study included 31,000 men aged 35-64 years, employed as drivers or conductors on London city buses, trams and underground. The results showed that sedentary drivers had a higher incidence of CHD than active conductors. A further study of 110,000 men aged 35-59 years who worked either as postmen or telephonists and clerks was conducted to see if the results of the first study could be reproduced in different occupational settings. Similar results were found, showing the physically active postmen had lower incidences of CHD compared to the men employed in inactive jobs (telephonists and clerks) (Morris et al., 1953). As a result of these studies, more attention has been given to PA by health care researchers (Paffenbarger et al., 2001).

Several types of PA interventions have been designed and studies conducted to test their effectiveness (Conn et al., 2003; Muller and Khoo, 2014; Van der Bij et al., 2002). One type of intervention is the lifestyle PA intervention, which includes a variety of moderate-intensity activities that can be performed throughout the day. This type of intervention considers individual, cultural and environmental differences among individuals. A review of lifestyle PA interventions carried out by Dunn et al. (1998), including samples of older adults, found that lifestyle PA interventions were usually delivered face-to-face with a small group of individuals in clinical settings, so the public health effect was limited. However, the review suggested that a larger number of people could be reached when using mail or telephone to deliver the information. Technological innovations, such as the internet, can also be effective tools for reaching larger segments of the population (Dunn, 2009). Dunn et al. (1998) stated that lifestyle interventions may have long-term effects for increasing activity levels and decreasing sedentary behaviours. Dunn (2009) concluded that lifestyle PA may also be effective for reducing cardiovascular diseases among several populations, and that more attention should be given to exploring how long-term maintenance may be achieved.

Opdenacker et al. (2008) conducted a study in Belgium to evaluate the short- and long-term effects of lifestyle PA interventions (n=60) and structured exercise interventions (n=60) among older adults (≥60 years) and compared the results with those from a control group (n=66) who only participated in fitness/health status check-ups and did not receive any PA information. The home-based lifestyle intervention encouraged participants to incorporate PA into their daily routine, especially walking and cycling for transport, and consisted of individualised PA programs adapted to each person’s needs, with booklets including all of the exercises they were to do at home. The program was supported by phone calls from instructors as well as optional group sessions to ensure the exercises were being performed correctly. The results of the study showed that both interventions were equally effective in improving PA, with the lifestyle intervention group having a significant increase in PA one year after the study’s completion, while the structured exercise group did not maintain their PA. These results indicate that integrating PA into the daily lives of older adults may be an effective way to sustain physical activity levels. There is evidence to suggest that lifestyle PA benefits older adults by preventing chronic diseases, reducing mortality and improving QOL (see Section 3.4.).

## 3.3.3. Public Health Recommendations

To tackle the epidemic of physical inactivity and the high levels of NCD, WHO (2004) developed a strategy to address two of the main risk factors for NCD: diet and PA. Several international agencies and organisations, including WHO, have also established guidelines for the recommended level of PA for adults, including for adults over age 65 (WHO, 2010; Commonwealth of Australia, 2014; Brown et al., 2005; Canadian Society for Exercise Physiology, 2012; Bull et al., 2010; US Department of Health and Human Services (HHS), 2008; Garber et al., 2011; Chodzko-Zajko et al., 2009; Haskell et al., 2007; Department of Health, 2011). Countries such as the UK, United States of America (USA), Canada and Australia have developed national recommendations for PA. Similar recommendations have also been established in Qatar (Al-Bibi, 2014). The international recommendations for adults are generally as follows:

1. Adults aged 18 years and older should perform at least 150 minutes of moderate-intensity aerobic PA throughout the week or at least 75 minutes of vigorous-intensity aerobic PA throughout the week, or an equivalent combination of moderate- and vigorous-intensity activity.

2. Aerobic activity should be performed in bouts lasting a minimum of 10 minutes.

3. For additional health benefits, adults aged 18 years and older should increase their moderate-intensity aerobic PA to 300 minutes per week or engage in 150 minutes of vigorous-intensity aerobic PA per week, or an equivalent combination of moderate- and vigorous-intensity activity.

4. Muscle-strengthening activities involving major muscle groups should be performed two or more days per week.

Additional recommendations specifically for older adults include:

5. Adults aged 65 years and older who experience poor mobility should perform PA to enhance balance and prevent falls on three or more days per week.

6. When adults 65 years and older cannot do the recommended amounts of PA due to health constraints, they should be as physically active as their abilities and conditions allow.

# 3.4. Benefits of Physical Activity for Older Adults

The importance of adopting a physically active lifestyle in general, and among older adults in particular, has been documented in the available research (Germeaux et al., 2012; Paterson et al., 2007). Some of the benefits of PA are included below.

## 3.4.1. Reducing Mortality

Regular PA may prevent premature death (Warburton et al., 2006). Moreover, regular PA may reduce the physiological effects of ageing, improve active life expectancy (Chodzko-Zajko et al., 2009), increase longevity (Janssen et al., 2013) and reduce mortality among the general population (Samitz et al., 2011; Nocon et al., 2008; Wen et al., 2011; Schoenborn and Stommel, 2011; Menec, 2003). A randomised controlled trial of 946 older adults in the UK showed that increased levels of PA may reduce mortality (Hrobonova et al., 2011). A longitudinal study with eight years’ follow-up conducted in England and involving 10,426 community-dwelling adults aged 50 years and older showed an association between mild-intensity PA and survival (Hamer et al., 2014). Older adults who took part in the study gained health beneﬁts from participating in regular, light-to-moderate PA, although the greatest beneﬁts were observed in individuals who participated in more vigorous activities (Hamer et al., 2014).

## 3.4.2. Physical Activity and the Prevention of Chronic Diseases

Regular PA may help prevent chronic diseases among older adults (Chodzko-Zajko et al., 2009; Vogel et al., 2009; Hollmann et al., 2007), such as type 2 diabetes and cardiovascular disease, as well as metabolic syndrome (Chen et al., 2013) and inflammation (Geffken et al, 2001).

Regular PA may help prevent cancer (Warburton et al., 2006), especially breast and colon cancers (Vogel et al., 2009). Brown et al. (2007) found that regular PA may assist in the prevention of breast, endometrial and colorectal cancers in women. PA may also enhance recovery from cancer and prevent recurrence (Brown et al., 2012).

## 3.4.3. Physical Activity and the Prevention of Obesity

Regular PA may prevent obesity (Warburton et al., 2006) in the general population. PA may also lower the risk of abdominal obesity (Santos et al., 2012) and prevent weight gain in older adults and postmenopausal women (Stehr and Lengerke, 2012).

## 3.4.4. Physical Activity and the Prevention of Osteoporosis, Falls and Fractures

Regular PA may prevent osteoporosis (Warburton et al., 2006) and, for postmenopausal women, exercise may be effective in counteracting age-related decline in bone mineral density (Chodzko-Zajko et al., 2009; Vogel et al., 2009). PA may also help to prevent falls (Moayyeri, 2008; Sherrington et al., 2004; Vogel et al., 2009) and reduce the risk of hip fractures in older adults (Benetou et al., 2011; Moayyeri, 2008; Schmitt et al., 2009).

## 3.4.5. Physical Activity and Improved Functional Outcomes

Short-term moderate to high levels of PA may reduce the risks of morbidity, mortality and loss of independence in older adults (Paterson and Warburton, 2010) as PA has a positive effect on mobility and physical functioning (Vriesa et al., 2012; Brach et al., 2004; Mian et al., 2007; Chou et al., 2012; Pinto et al., 2013; Ourania et al., 2003; Meisner et al., 2010; Gudlaugsson et al., 2012). For older adults suffering from dementia, PA may improve physical function (Potter et al., 2011; Blankevoort et al., 2010). PA has also been found to reduce disability among older adults (+80 years) (Shah et al., 2012; Menec, 2003; Bean et al., 2004).

## 3.4.6. Physical Activity and the Prevention of Cognitive Decline

PA may reduce the risk of developing dementia and Alzheimer’s disease among older people (Fratiglioni et al., 2004; Chodzko-Zajko et al., 2009; Vogel et al., 2009; Laurin et al., 2001) and may improve overall mental health (Lautenschlager et al., 2004). PA counteracts age-related changes in the brain (Hollmann et al., 2007) and slows the progression of cognitive decline (Cyarto et al., 2012; Hertzog et al., 2008; Boucard et al., 2012; Kimura et al., 2013; Huang et al., 2014; Lautenschlager et al., 2008; Yaffe et al., 2001; Weuve et al., 2004).

## 3.4.7. Physical Activity and the Improvement of Wellbeing and Quality of Life

Regular PA is associated with significant improvements in overall psychological wellbeing (Chodzko-Zajko et al., 2009; Ekwall et al., 2009). A positive relationship has been found between PA and successful ageing (wellbeing, function and mortality) (Menec, 2003) as PA can improve QOL for older adults (Figueira et al., 2012; Baker et al., 2009) by positively affecting life engagement (Liffiton et al., 2012).

PA has been shown to have a significant positive impact on healthy behaviours and life satisfaction, with significant reduction in total risk factors among older women (Kim et al., 2003).

Participation in PA has been associated with higher health-related QOL measures in both physical and mental domains among older adults (Acree et al., 2006; Balboa-Castillo et al., 2011). Similar results have been found among menopausal women (Villaverde-Gutierrez et al., 2006).

Regular PA may also prevent depression (Warburton et al., 2006), as PA is associated with lowering depressive symptoms (Chin et al., 2012) and improving mood among older adults (Blake et al., 2009).

## 3.4.8. Physical Activity and the Prevention of Lower Back Pain and Fatigue and Improved Muscle Power

PA may decrease the risk of lower back pain among older adults (Hartvigsen and Christensen, 2007). PA also has the ability to reduce fatigue, and an inverse relationship between fatigue and PA has been found in older adults (Soyuer and Senol, 2011). Tai Chi and jogging have been found to improve muscle strength and endurance in older populations (Xu et al., 2006).

## 3.4.9. Physical Activity and Lowering of Health Care Costs

A systematic review, including survey data and retrospective cohort studies, shows that PA may reduce the utilisation of healthcare services by adults aged 65 years and older, leading to a reduction in healthcare costs (Sari, 2011). Moreover, a prospective study involving 483 older Japanese adults has also demonstrated that a higher level of PA is associated with lower medical care costs (Yang et al., 2011).

# 3.5. Critique of Theories and Models of Physical Activity

Over the years, many theories and models have been developed to provide explanations for human health behaviours, including PA (Glanz et al., 2008). These theories and models are important for improving understanding on how behaviour change can be achieved and for encouraging the use of evidence-based practice when designing and developing health promotional programmes (HHS, 2012). There are two types of theory: a) explanatory theory, which explains causes and factors of problems (e.g. the health belief model, the theory of planned behaviour, the precaution adoption process model) and b) change theory, which is directed at the creation of health interventions and the provision of concepts for developing programme strategies (e.g. community organisation, diffusion of innovations) (Glanz et al., 2008). When designing a health programme, a theoretical approach should be chosen based on the problem, context and targeted group, as there is no one theory that suits all (Glanz et al., 2008). The following sections provide an overview of some of the theoretical models used in promoting PA. These are presented based on their level of influence. This overview is followed by a justification of the theoretical approach adopted in the current research.

## 3.5.1 Intrapersonal/individual Level Theories and Models

There are many theories focused on intrapersonal level factors, such as knowledge, attitudes, beliefs, motivation, self-concept, developmental history, past experience and skills. The main criticism of the individual level behavioural change theories is that they tend to focus on individual factors while ignoring the influence of other aspects such as culture and environment (Stokols, 1996); therefore, they are accused of encouraging victim-blaming[[2]](#footnote-2) (Roden, 2004; Diclemente et al., 2013). Some examples of individual level theories are discussed in what follows.

### 3.5.1.1 The Health Belief Model

One of the pioneering theories which has been extensively applied in the health field is the Health Belief Model (HBM). It was developed in the 1950s by American social psychologists to interpret the reasons for low rates of participation in a disease-prevention project. In particular, they sought to justify why a tuberculosis examination programme had inadequate engagement although the screening was free of charge and was performed in many nearby places (Glanz et al, 2008). The HBM, which aimed to understand individual motivation and health behaviour, consists of six components: perceived susceptibility (beliefs about the possibility or risks of getting a condition); perceived severity (beliefs about how serious a condition is and its consequences); perceived benefits (beliefs about whether taking action will result in successful positive outcomes); perceived barriers (beliefs about the cost of taking action); cue to action (determinants that influence and encourage the taking of action) and self-efficacy (beliefs in one’s ability to take action or to do something) (Raingruber, 2014).

A systematic review of 18 studies conducted to evaluate the effectiveness of HBM interventions in improving adherence found that success of intervention on adherence was unrelated to the HBM constructs (Jones et al., 2014). Additionally, a meta-analysis of 18 studies, conducted to determine whether HBM constructs could longitudinally predict behaviour, showed that benefits and barriers were consistently the strongest predictors, while susceptibility and severity were found to have a weak and inconsistent effect as predictors (Carpenter, 2010). However, the small number of included studies should be taken into account when interpreting these findings.

The HBM has been criticised for concentrating on negative determinants and neglecting constructive ambition that provokes healthy habits (Roden, 2004). Another criticism is that health practices are not necessarily based on logical, informed decisions (Thaler et al., 2008). The HBM neglects the effect of emotions (Abbatangelo-Gray et al., 2007) and the effect of individual diversity, such as personality type, on behaviour (McCrae et al., 2005). HBM developed from prevention and has been established only on views of undiagnosed diseases (Abbatangelo-Gray et al., 2007). Although perceptions of threat are associated with behaviour, interventions directed at increasing perceived threats have not been notably useful for altering behaviour (Albarracin et al., 2005).

### 3.5.1.2 The Stages of Change or Transtheoretical Model

The stages of change or Transtheoretical Model (TTM) is both an intervention and a behavioural model which emphasises that readiness to change behaviour differs over time (Raingruber, 2014). In this model, behaviour change is seen as a process (circular model) with five stages. People have different needs in each stage, and the discussion below considers the stages of change, the process of change, pro and con beliefs (decisional balance) and self-efficacy (Prochaska et al., 1992; Glanz et al., 2008). The stages of change are 1) precontemplation, which means that there are either no plans to take action within the next six months or no interest; 2) contemplation, which includes planning to take action in the next six months, which reflects a desire to change; 3) preparation, which includes planning to take action in the next month and a few measures have already been taken; 4) action stage, which means that the person has been changing behaviour for less than six months and is doing it regularly and 5) the maintenance stage, which means that the person has been changing behaviour for more than six months (Glanz at al., 2008). The TTM has been critiqued for neglecting the effect of habits and values on behaviour (Raingruber, 2014, Ogden, 2012). The six-months division between the action and maintenance stages is subjective and lacks theoretical and empirical insights (Kraft et al., 1999). TTM does not differentiate between being uninformed of the demand to change and being uninterested in changing, and it neglects the choice not to adopt the behaviour (Lechner et al., 1998). The model focuses on intentional and rational choices although not all behaviours are conscious (Ogden, 2012). Most studies used a cross-sectional design to compare differences in variables between people in different stages, which provides a weak test of the stage theory; a valid causality requires longitudinal and experimental studies (Ogden, 2012). Inadequate accuracy of the allocation to categorical stages is another weakness of TTM (West, 2005).

A systematic review which included 26 papers (16 stage-based activity promotion interventions) found that TTM induced a short-term behavioural change in PA, but it was not effective in inducing a long-term effect (Adam and White, 2003). Standardisation and validity of the instruments used to assess stage of change has been reported as lacking (Riemsma, et al., 2003; Adam and White, 2003). Additionally, a systematic review that included 34 papers (24 TTM PA behaviour change interventions) found that the effectiveness of TTM-based PA interventions cannot be determined, as the majority of papers failed to accurately apply all dimensions of the model (Hutchison et al., 2009). All four dimensions of the TTM were used on seven interventions, or only 29%. All 24 interventions used the stages-of-change dimension to develop the intervention protocol, while 17 interventions (71%) used the processes of change; 15 interventions (63%) used the decisional-balance dimension, and 8 interventions (33%) used the self-efficacy/temptation dimension (Hutchison et al., 2009). A comparison of data from these interventions showed that short-term effectiveness was moderately common, but long-term effectiveness was limited. Based on this comparison, the review concluded that the degree to which interventions are based exactly on the TTM may not affect their effectiveness. The authors advised that a complete comprehension of all dimensions of the TTM and how they correlate to one another should be displayed when establishing TTM-based interventions (Hutchison et al., 2009).

## 3.5.2 Interpersonal Level Theories and Models

Factors in the interpersonal level theories and models include formal and informal social networks or social support systems, such as family members, friends, co-workers and health professionals. Theories of this level recognise the influence of social factors on behaviour (Glanz et al., 2008). The main critique of interpersonal theories is their focus on cognitive facets while neglecting emotional and biological factors that affect behaviour (Myers, 2010). They also neglect the role of the physical environment and community-level factors in shaping behaviour (Glanz et al., 2008). Examples of these theories are introduced in what follows.

### 3.5.2.1 The Theory of Reasoned Action and the Theory of Planned Behaviour

The Theory of Reasoned Action (TRA; 1975) emphasises that people think about the repercussions of their behaviours before acting (Raingruber, 2014). In this theory, behavioural intention is seen as a basic motive for behaviour (Raingruber, 2014). Behavioural intention refers to the perceived tendency of adopting or carrying out a behaviour and is influenced by a) attitudes or the personal subjective view toward the behaviour and b) subjective norms or beliefs regarding the opinions of significant others and expectations toward the behaviour. As not all behaviours are completely controlled by the individual, the Theory of Planned Behaviour (TPB) was developed as an extension to the TRA by Ajzen (1985), who added a perceived behavioural control predictor (Raingruber, 2014). Perceived control is understood as the beliefs regarding one’s own control and power for doing the behaviour (Glanz et al., 2008).

A meta-analysis of 161 papers presented evidence backing the application of the TPB for predicting intentions and behaviours in different domains (Armitage and Conner, 2001). Prediction was greater for self-reported than for observed behaviour; however, the TPB was able to justify 20% of the difference in prospective measures of certain behaviour (Armitage and Conner, 2001). Nevertheless, there was some evidence for divergent validity between desire, intention and self-prediction, and for a discrepancy between self-efficacy and perceived control over behaviour (Armitage and Conner, 2001). Subjective norms demonstrated a moderately powerful relation to intention when properly assessed with multi-item measures (Armitage and Conner, 2001). Other studies showed that the TPB was effective in predicting exercise intentions and behaviour among pregnant women (De Vivo et al., 2016) and older adults (Ahmad et al., 2014; Motalebi et al., 2014; White et al., 2012).

The main critiques for the TPB are that it concentrates on cognitive factors and neglects the impact of emotions on behavioural change (Raingruber, 2014), that it lacks causality (Schwarzer, 1982), that it depends on self-reported behaviour and that it does not describe the interplay between attitudes, intentions and perceived behavioural control. It is also impossible to falsify, as the ‘model cannot be tested, focus[es] on analytic truths rather than synthetic ones, and [it] may create and change both cognitions and behaviour rather than describe them and as such do[es] not pass the criteria set for a good theory’ (Ogden, 2003, p.427).

### 3.5.2.2 The Social Cognitive Theory

The Social Cognitive Theory (SCT) was developed by Bandura (1989) and is a progressive continuous process which includes six key concepts (Glanz et al., 2008):

* Reciprocal determinism or the active interplay of the individual, behaviour and the social surrounding where the behaviour is carried out;
* Behavioural capability or proficiency and ability to do a particular behaviour;
* Expectations or expected consequences of a behaviour;
* Self-efficacy or belief in one’s competence to adopt action and conquer obstacles;
* Observational learning (modelling) or behavioural gain that develops by observing the actions and results of others’ behaviour;
* Reinforcements or feedback on an individual’s behaviour that enhances or reduces the possibility of relapse.

A meta-analysis of 44 studies found that SCT explained 31% of the difference in PA behaviour (Young et al., 2014) although the overall poor methodological quality of the included studies may have affected the results: they were found to have inadequate internal consistency and test-retest reliability for SCT measures, lack of sample size justifications and power calculations, inadequate retention at follow-up in longitudinal prospective studies, lack of random recruitment and minimum use of objective measures such as pedometers.

The STC is criticised for having an inadequate structure which depends only on dynamic interaction between the individual, his/her behaviour and the environment. The extent to which each of these determinants leads to actual behaviour is ambiguous, as is the question of whether one is more powerful than another (Glanz et al., 2008). The STC is broad, so it can be hard to use as a whole, and it ignores how behaviour has changed throughout the lifetime despite changes in the environment (Glanz et al., 2008).

## 3.5.3 Environmental (Community) Level Theories and Models

This section includes theories and models that target people in the community as a group. The main critique for these types of theories is their difficulty with measuring effectiveness; therefore, quantifiable outcome data is lacking. For example, outcomes such as culture change are difficult to measure (Glanz et al., 2008). Another criticism of these theories is that people who share some characteristics do not necessarily form homogeneous groups (Lyons and Chamberlain, 2006). Some examples of these theories are presented in this section.

### 3.5.3.1 Community Organisation Model

The Community Organisation Model is a process to assist community groups to recognise frequent issues, organise sources and establish and enforce plans of action to achieve mutual aims (Glanz et al., 2008). The model includes various approaches to accomplish the change (Glanz et al., 2008):

1. Locality/community development is a process towards the goal of establishing group integrity and competency.
2. Social planning is task directed, emphasises issue resolving and mostly depends on experienced professionals.
3. Social action is both a process and task directed. The objectives are to build the community’s ability to work out difficulties and to attain solid adjustments that rectify social injustices. A distinct difference of this model, compared to other community models, is that it is tailored to prepare disadvantaged people to act in their personal interest. Self-interest is perceived as an encouragement for activity.

These approaches have shared concepts that are primary to reaching and assessing change (Galnz et al., 2008):

1. Empowerment: a social operation process where individuals acquire proficiency over their behaviours and their communities (Nettleton and Bunton, 1995).
2. Community capacity: includes aspects of the community that influence its capability to recognise, move around and focus on issues.
3. Participation: involves dealing with community members as equal allies and employing them in the construct process.
4. Relevance: includes stimulating participants to focus on concerns that are substantial to them.
5. Issue selection: recognises urgent specific and attainable goals for change that consolidate and build community strength.
6. Critical consciousness: includes perceptions and understanding of social, political and economic factors that influence social problems.

Additionally, using mass media to promote public policies is an important part of community organising (Glanz et al., 2008). In the United States, community coalitions seem to help efficient promotion of PA through the encouragement of walking as a community norm; in particular, walking clubs that combat crime proved successful in improving the PA level in a low-income, high-crime African-American community in California (Williams and Olano, 1999). This was done through a collaboration between a local public health service and a neighbourhood-based community service agency which led to merging walking clubs into different facets of the community lifestyle (Williams and Olano, 1999). Similarly, another community organisation’s approach to promoting PA among under-served older adults in South-East Seattle through networking between organisations has led to the successful establishment of senior PA programmes during the first 18 months of the five-year project (Cheadle et al., 2010).

### 3.5.3.2 Diffusion of Innovation Theory

The Diffusion of Innovation Theory aims to approach and advertise new health interventions to a large number of people to enhance their public health effect (Glanz et al., 2008). According to this theory, there are several factors that impact the success of new health interventions, such as compatibility (a proper conformity with the targeted group), complexity (the degree of simplicity of enforcing the intervention), trialability (checking and testing the intervention before endorsement), observability (the intervention providing concrete noticeable outcomes that can be assessed in simple ways) and relative advantage (the intervention is excelling and exceeding other options).

Mass media and social networks play an important role in communicating the intervention to the targeted audience (Rogers, 2003). The Diffusion of Innovation Theory is criticised for its ‘pro-innovation bias’. Many diffusion studies have definite expectations that the innovation will be fully diffused and embraced by the targeted group, which is not the case all the time (Roger, 2003; Glanz et al., 2008). Victim-blaming is another limitation of the theory2 (Glanz el al., 2008).

### 3.5.3.3 Communication Theory

Communication theory examines how information and messages are developed, conducted, accepted and incorporated (Glanz et al., 2008). Adopting multi-levelled strategies is essential to achieve sustainable behaviour change and communicate complex health information (WHO, 2017b). The communication theory has three stages, which are enactment, selection and retention. The enactment stage concentrates on health-related disputes. In this stage, healthcare users and providers should establish the preferred communication strategies to deal with the given health challenge. The selection stage includes the arrangement of measures to enhance the comprehension of communication. In the retention stage, methods to maintain what was gained are used by generating a repository of experience about what was effective and what was not (Raingruber, 2014). There are diverse types and modes of communication which include verbal or non-verbal and which target either individuals or groups (Payne and Horn, 2007).

A meta-analysis of nine prospective studies showed that mass media campaigns may encourage walking but may not decrease sedentary behaviour or help with reaching recommended PA levels (Aboiye et al., 2013). Another systematic review (29 papers) evaluated 14 adult-targeted, overweight- and obesity-prevention mass-media campaigns. Television was the main channel of communication in the majority of the campaigns, and interventions mostly targeted individual behaviour. Despite the limited reporting of the campaigns and their evaluation, the results showed that mass-media campaigns could have a positive effect on intermediate outcomes, such as knowledge and attitudes (Kite et al., 2018). Additionally, a systematic review of twenty studies (18 were RCTs) investigated the effectiveness of eHealth interventions in promoting PA among older adults ≥ 55 years old (Muellmann et al., 2018). Interventions included some of the following: tailored PA advice, goal setting and feedback and PA tracking using the Web, phone and/or text-messaging. Engaging in eHealth interventions led to short-term improvement in PA levels compared to control groups containing no intervention. Long-term effects of eHealth and its effectiveness compared to other non-eHealth interventions (such as print) cannot be determined (Muellmann et al., 2018). When interpreting these findings, it should be noted that the quality assessment of the included studies ranged from low to moderate and that studies differed in intervention mode, content, duration and outcomes assessed. Finally, a meta-analysis of twenty-two RCTs investigated the use of social media to encourage healthy diet and exercise among adults. All studies had either an unclear or high risk of bias, mostly due to poor reporting of methods. The interventions included a combination of discussion boards, online learning modules, self-report diaries and/or social support using social media. Findings showed low levels of participation and adherence, and no significant differences were noted between social media interventions and alternate- or no-intervention groups in key outcomes (e.g. PA level) (Williams et al., 2014).

## 3.5.4 Planning Models

A theory is ‘a set of testable propositions that help us to explain and predict phenomena such as health behaviours’ (Crosby and Noar, 2011, p.S7). A planning model is an ‘organizing framework for an entire health promotion effort aimed at fostering reduction in a given disease’ (Crosby and Noar, 2011, p.S7). Planning models assist healthcare providers to establish plans and policies step by step, combining different theories to describe and focus on health issues (Raingruber, 2014). Models usually start with an exploration of the targeted group’s needs (i.e. ‘formative research’). Social marketing and Precede-Proceed are examples of planning models, not theories. They can be seen as a means of addressing the complicated effort of accomplishing meaningful gains in the rebate of morbidity and mortality at the community level by establishing, enforcing and evaluating health promotion interventions (Crosby and Noar, 2011).

### 3.5.4.1 Social Marketing

Social marketing applies marketing approaches to affect the voluntary behaviour of the defined group for health advantages and to boost behaviour with incentives and other profits (Glanz et al., 2008). It is user-directed, and ongoing evaluation and feedback are important to check its effectiveness. There are several benchmark criteria for social marketing: a) concentrating on behavioural results, b) arranging for the benefit of users rather than markets, c) adopting an ecological perspective, d) using audience segmentation and e) establishing a marketing mix of communication components based on the four Ps (HHS, 2012). The four Ps for an efficient marketing mix strategy are (Glanz et al., 2008):

1. Product: appropriate type of behaviour change;
2. Price: barriers and costs for taking up the behaviour;
3. Place: making the behaviour approachable, available and easy to adopt;
4. Promotion: how to transfer the information to the targeted group.

A systematic review investigated the effectiveness of 22 PA interventions which adopted the six key social marketing principles. The results showed moderate evidence that social marketing can enhance exercise behaviours, improve PA knowledge and affect exercise-related psychosocial variables such as self-efficacy (Gordon et al., 2006). Another systematic review of 92 social marketing interventions (in 173 conditions) found this approach to be effective in promoting PA among adults if a large number of social marketing criteria are applied and when the administrator understands the targeted group (Xia et al., 2016). Similar positive behaviour change was also found in another systematic review of seven social marketing PA interventions (34 papers) targeting older adults (60 years old and above) (Fujihira et al., 2015). On the other hand, a cluster RCT evaluated the effectiveness of a one-year community-wide campaign for promoting PA in middle-aged and elderly people in Japan. Nine communities were allocated to the intervention group and three to the control group. The intervention included information, education and support delivery and used social marketing principles. The self-administered questionnaires were completed by 4,414 individuals aged 40-79 years. The results showed that awareness and knowledge were significantly different between the intervention (79%) and control groups, although there were no significant differences in belief and intention. The campaign failed to promote PA in one year (Kamada et al., 2013).

Social marketing has been connected with health inequity issues as it concentrates on individual agency rather than contextual circumstances that may be restricting behaviour. This means that individuals with extreme demands for health intervention are least likely to benefit and emphasises the need to combine individual and environmental interventions to change behaviour (Langford and Panter-Brick, 2013). The approach is also time consuming and costly in terms of both money and human resources (Ling et al., 1992).

### 3.5.4.2 Precede-Proceed Model

Precede-Proceed (PPM) is a planning model that provides a structure for establishing intervention plans to focus on aspects associated with outcomes of interest (Raingruber, 2014; Crosby and Noar, 2011). The model has nine steps. The first five are demonstrative, focussing on both educational and environmental aspects: (1) social assessment (to find out about community-anticipated wants); (2) epidemiological assessment (to set up the community’s health requirements and establish the programme aims and targets); (3) behavioural and environmental assessment (to recognise the internal and external factors that influence the health issue); (4) educational and ecological assessment (to recognise factors that are needed to support the adoption and maintenance of behaviour change); (5) administrative and policy assessment (to recognise the availability of resources, procedures and laws that could influence the intervention application). The last four steps consist of implementation and evaluation of the health programme: (6) implementation; (7) process evaluation (to judge if the implementation of intervention is conferring with the proposal); (8) impact evaluation (to review changes in factors that could affect the behavioural change) and (9) outcome evaluation (to examine if the programme has influenced health and QOL barometers) (Glanz et al., 2008).

Using the PPM as a framework for a promotional programme for PA resulted in statistically significant enhancements in the fitness assessment scores for the ball throw for American youth (both genders) across a seven-week community-based youth fitness and nutrition summer camp programme. The model was helpful for evaluating and identifying areas for improvement in the programme (Johnson, 2016). Similar positive impacts on PA with the use of PPM were reported among Iranian high school students (Rezapour et al., 2016) and among older adults in Iran (Doshmangir et al., 2015).

The PPM is critiqued for being hard to apply; it is a profoundly structured, linear effect model, which occasionally has been carried out improperly because it is so complicated (Whitehead, 2001).

## 3.5.5. Summary of Theoretical Approaches

Many behavioural theories and models have been developed and used in the public health domain to promote different health-related behaviours (Glanz and Bishop, 2010). These theoretical approaches usually aid understanding of behaviour and establishing effective measures to impact and alter the behaviour (Glanz and Bishop, 2010). Each theory targets different levels of influence and has different pros and cons. It was noted that although many theories were effective in eliciting short-term improvement in health behaviour, long-term impact was usually lacking. Based on this, it can be concluded that as health behaviours such as PA are complex and influenced by different interlinked factors, behaviour should be targeted with a multi-level approach, including individual, cultural and environmental levels, to achieve effective and sustainable behavioural change (Glanz and Bishop, 2010). Exploration of the theories and models of PA have influenced and informed the current study data collection, analysis and interpretations by providing the necessary knowledge to understand that focusing on one level of influence might not be enough to understand PA behaviour among older adults in Kuwait, and that using a multi-level approach to explore PA is essential to design effective strategies to combat physical inactivity. An example of this multileveled approach is the ecological model, which is discussed next.

## 3.5.6. Theoretical Framework of the Current Study

The ecological model is a conceptual framework and a multileveled interactive approach (McLeroy et al., 1988). According to the model, there are five levels of influence: (1) the intrapersonal/individual level (i.e. biological and psychological); (2) the interpersonal level (i.e. social and cultural); the environmental context, which includes (3) the institutional or organisational level, 4) the community level and 5) the public policy level (Buchan et al., 2012). The ecological model is characterised by reciprocal causation, which means that behaviour both influences and is influenced by the social environment; additionally, it emphasises the interplay between different levels of influence (Glanz et al., 2008). The ecological model has been criticised for being time consuming and challenging to implement because its need for a breadth of ecological detail means that every aspect of an individual’s environment must be considered (Richard et al., 2011). Another limitation is the difficulty of experimentally assessing all the elements of this complex model and it also lacks a detail tool for progress (Richard et al., 2011). While the reductionist focus of individual-level promotional interventions has negatively affected maintenance, as discussed above, the holistic nature of the ecological model, despite the mentioned difficulties, helps deepen the understanding of health-related behaviours such as PA. In turn, it may aid the development of promotional interventions that resolve the issues of maintenance and sustainability of the gained behaviour (Richard et al., 2011).

The current research was guided by the ecological perspective, as it seemed to be the most appropriate theory for this research topic (PA promotion) and the targeted population (older adults) (WHO, 2012). The ecological model of health is based on the way that various factors on different levels interact to affect health (McLeroy et al., 1988; Glanz et al., 2008). The ecological model has been widely used in health promotion and behavioural change interventions, such as those for diabetes self-management, tobacco control (HHS, 2008) and the promotion of PA in a population scale (Giles-Corti et al., 2005; Saelens et al., 2003; Owen et al., 2004; Mutsudo et al., 2004; Sallis et al., 2006). Bauman et al. (2012) carried out a review of 16 systematic reviews to examine evidence regarding factors associated with PA (correlates) in older adults and children internationally. They found that in the last few years multi-level ecological models have been increasingly adopted in PA studies as it is a complex behaviour and is affected by different levels of influence (Figure 3-1 provides an example of the ecological model of PA determinants as concluded by Bauman et al., 2012). Bauman et al. (2012) pointed out how broad knowledge of PA correlates can help the design of effective multi-level PA interventions that target various PA factors. The review discussed how the ecological model can improve awareness regarding PA environments, which give priority to multi-disciplinary collaboration between health professionals and other non-health sectors.

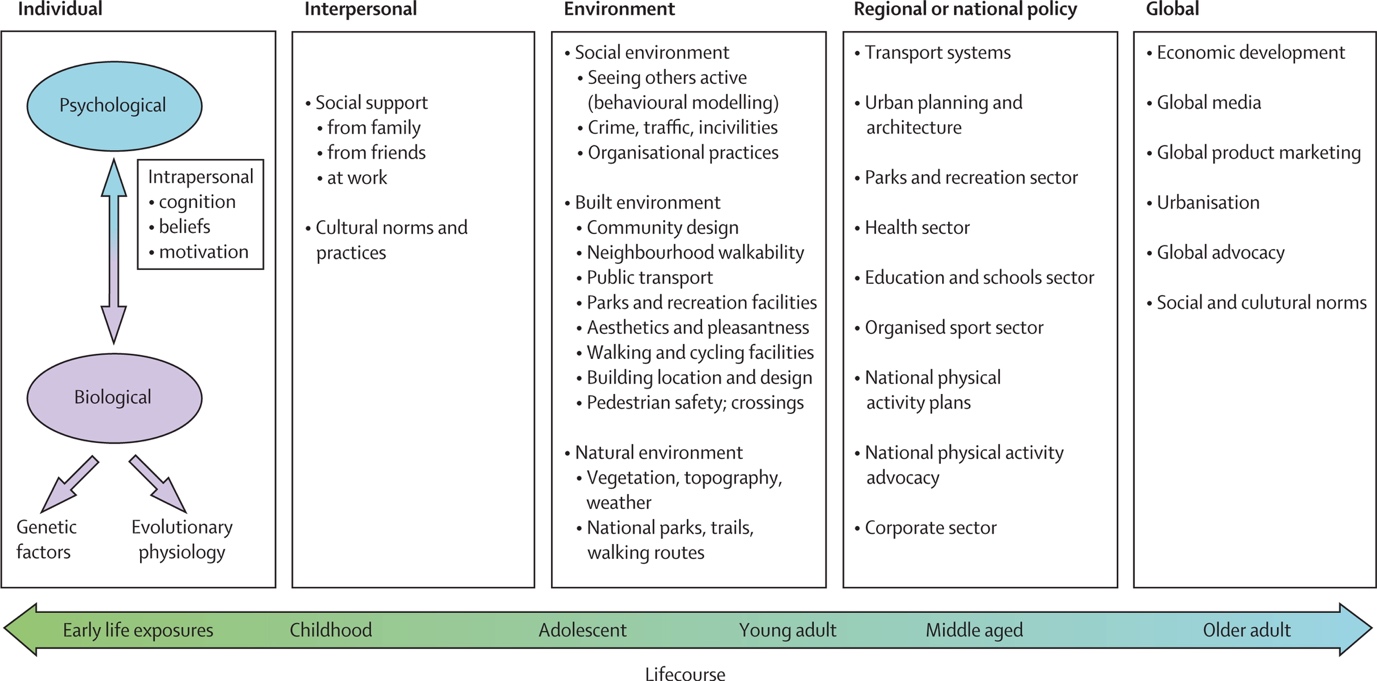


Figure3‑1 Ecological model of the determinants of PA, cited from Bauman et al. (2012), P259.

Similarly, Pratt et al. (2015) used the socio-ecological model to summarize the published systematic reviews on population-level PA interventions conducted mainly in North and Latin America, Europe, Australia. Counselling (intrapersonal), non-family social support strategies (interpersonal), school and workplace-based interventions (community) and street scale urban design policies (environmental) were some examples of PA interventions which reported to have sufficient to strong evidence on increasing PA in the targeted population. The review emphasised that effective PA interventions should aim at multi-level PA influences and involve partnership with different sectors such as transportation and urban planning. Additionally, systematic reviews conducted by Franco et al., 2015, Moran et al., 2014 and Baert et al., 2011 all used ecological model to synthesis PA barriers and motivators among older adults, these systematic reviews are discussed in more details in Section 3.6.

The ecological perspective guiding this thesis argues that different connected influences function at diverse levels of a corporation to affect the health of individuals and communities (McLeroy et al., 1988). Consistent with this ecological view, this study assumes that the relationship between the environment and behaviour is mutual (Glanz et al., 2008). To explain more clearly, the social and physical environments can influence PA, and PA, in turn, can influence the environment. According to this perspective, because individuals are located in varied contexts, they are not only exposed to different types of knowledge streams but also build their orientations and behaviours on diverse determinants (Glanz and Bishop, 2010). The thesis argues that social powers performed at different levels of an ecological corporation and the interplay of environment- and culture-level systems are critical for improving PA behaviour (Glanz et al., 2008). From this, it can be argued that the ecological model is best suited to the examination of behaviour-specific health problems (such as promoting PA) and may help with efforts to design multi-level interventions which may be more effective in producing sustainable behavioural change (Spence and Lee, 2003). This is especially important because maintenance of behaviour is a key challenge within behaviour change interventions, such as PA promotion programmes (Kim et al., 2003).

In summary, the theoretical framework directing this study argues that individual behaviours develop within socially and culturally specific scopes and thus are rooted in the socio-cultural systems that create these environments. This research intends to develop a deeper understanding of PA behaviours among older adults and the cultural systems that create the environments in which these behaviours occur.

# 3.6. Barriers to and Motivators of PA among Older Adults

Several systematic reviews have explored the barriers to and facilitators of PA participation among older adults (60± years) (Franco et al., 2015; Moran et al., 2014) and the oldest adults (80± years) (Baert et al., 2011). The reviews have included qualitative and quantitative studies derived mostly from the USA, UK and Canada. PA was classified into a structured exercise program or other forms of PA, such as household, leisure-time activities and active transport. Many barriers and motivators were identified in these reviews, which may have implications when designing health promotion programs to encourage PA for older people. Within these reviews and studies of older adults in the USA, UK and Canada, a complex relationship can be found between the different levels of the ecological model (intrapersonal, interpersonal and environmental), when categorised into that framework, with different factors influencing each other. Barriers and facilitators included factors and elements relating to the individuals themselves, or their social or physical environments. For example, built and natural environments seem to have an influence on PA, but this relationship might be altered through the influence of personal determinants (maintenance of good health and functional ability) and interpersonal determinants (supportive social networks) (Stathi et al., 2012). I will examine each in turn, briefly, below.

3.6.1. Intrapersonal / Individual Level Activity

3.6.1.1. Motivation

Several studies have stressed the importance of motivation for the adoption of an active lifestyle (Antikainen et al., 2010; Lin et al., 2007). Bjornsdottir et al. (2012) conducted a qualitative study in Iceland, wherein ten older women (72–97 years) living in a retirement community were recruited for an in-depth study of their lived experience with facilitators of and barriers to PA. The authors concluded that motivated older women may be able not only to adopt PA but also to adhere to it.

Furthermore, several studies have shown that a lack of self-motivation may act as a barrier to PA adoption among older adults in the UK, USA and New Zealand (Beck et al., 2010; Antikainen et al., 2010; Belza et al., 2004; Ceria-Ulep et al., 2011; Kolt et al., 2006; Lees et al., 2005), and among older women in the USA and Brazil (Vaughn, 2009; Cassou et al., 2011; Bjornsdottir et al., 2012; Balbale et al., 2013).

3.6.1.2. Enjoyment of PA

Enjoyment was a strong influence on undertaking exercise as it improves mood and provides more energy to older adults, which may aid in their adherence to PA (Hardy and Grogan, 2009; Horne et al., 2012; Broderick et al., 2015). It was found that unlike inactive persons who attempt to take part in exercise because ‘it is the right thing to do’, active older adults usually enjoy PA (Beck et al., 2010; Ferrand et al., 2012). Lin et al. (2007) found that being interested in the chosen exercise was an important motivator among older Chinese immigrants living in the USA. Moreover, fun is one of the important motivators of PA adherence among older adults participating in athletic competitions in the USA (Heo et al., 2013).

On the other hand, a lack of enjoyment was found to prevent older adults from participating in PA in the UK (Beck et al., 2010; Stathi et al., 2012). Additionally, older adults may lack interest in PA (Ceria-Ulep et al., 2011; Stathi et al., 2012; Friedman et al., 2012; Plonczynski et al., 2008) or even dislike it (Cassou et al., 2011; Plonczynski et al., 2008). Embarrassment as a barrier to PA was also found to negatively affect enjoyment in the USA and Ireland (Vaughn, 2009; Broderick et al., 2015).

3.6.1.3. Self-efficacy, Empowerment, Sense of Perseverance and Sense of Achievement

Self-efficacy or beliefs about one’s own abilities to do PA can motivate older people to adopt an active lifestyle (Bjornsdottir et al., 2012). The desire to be independent and not to burden family members as well as maintaining physical autonomy were also strong motivators for adopting PA among older adults in Ireland and France (Broderick et al., 2015; Ferrand et al., 2012). Moreover, enhanced self-image was a motivator among older adults in the USA (Heo et al., 2013; Vaughn, 2009). A sense of purpose or empowerment was one of the main motivations to adopt PA among older American adults (Vaughn, 2009; Heo et al., 2013) and retired white, British older adults (Beck et al., 2010). Furthermore, all participants (active and inactive) were found to seek new challenges to replace the challenges that were previously provided by work, although inactive participants may seek challenges from non-exercise domains (Beck et al., 2010). Similarly, in the USA, desiring a program that promoted accountability and a desire to learn something new motivated older adults to join a program designed to promote PA (Biedenweg et al., 2014). Among older South-Asian adults over 60 years old in England, mastering a specific activity improved self-confidence and provided a sense of achievement, which motivated them to be active; additionally, exercising provided women with the feeling that they were doing something just for themselves, not as part of their cultural role (Horne et al., 2012). A qualitative study conducted in the USA that explored the experience of competing in the Senior Games showed that developing a sense of perseverance helped seniors (aged 52-71) to encounter the challenges they might face, such as injuries and medical conditions (Heo et al., 2013). PA may also help them maintain their activity level regardless of consequences because it gives them a sense of achievement.

Low self-confidence and low self-efficacy were found to be barriers to walking among community-dwelling older adults (70 years and above) in the UK (Stathi et al., 2012). Low self-efficacy was also a barrier to PA among women in Iceland (Bjornsdottir et al., 2012).

3.6.1.4. Expectations of a Positive Outcome

Expecting that exercise has a positive impact on QOL may motivate frail older adults to exercise. In Ireland, Broderick et al. (2015) found that frail older people believed that exercise has a positive effect on their physical, social and mental levels, which motivates them to exercise. However, some of them felt that these outcomes were not achievable anymore due to their age, limited abilities and medical conditions. In the UK, expecting health benefits may motivate older adults with previous exercise experience to adhere to new exercise programs (Stathi et al., 2010).

3.6.1.5. Health

Health was found to have a strong influence on PA engagement among older adults, both positively and negatively (Weeks et al., 2008; Antikainen et al., 2010). Several studies showed that the desire to prevent health decline and manage chronic diseases may motivate older people to adopt PA in the UK, USA and Canada (Hardy and Grogan, 2009; Plonczynski et al., 2008; Weeks et al., 2008; Vaughn, 2009; Belza et al., 2004).

Understanding and valuing the health benefits of PA was another motivator for PA among older adults (Balbale et al., 2013; Ferrand et al., 2012; Horne et al., 2012; Ceria-Ulep et al., 2011). Although in the UK, Beck et al. (2010) found that inactive participants appeared to acknowledge the advantages of PA, this finding alone was not adequately powerful to provoke them to adopt regular PA. Weight control (Vaughn, 2009), physical fitness (Heo et al., 2013), a sense of wellbeing (Vaughn, 2009; Ferrand et al., 2012), decreased stress (Vaughn, 2009), and coping with pain (Bjornsdottir et al., 2012) were all documented benefits of PA found to motivate older adults to adopt an active lifestyle in the USA, France and Iceland.

On the other hand, a lack of perceived benefits (Beck et al., 2010) and physical illness or disability may also be barriers to engaging in PA (Vaughn, 2009; Weeks et al., 2008; Belza et al., 2004). Declining health (Bjornsdottir et al., 2012; Broderick et al., 2015; Lin et al, 2010), physical weakness and ailments (Abolfazl et al., 2011), injuries (Antikainen et al., 2010; Beck et al., 2010), depression and diabetes (Balbale et al., 2013; Cassou et al., 2011) were all found to negatively influence the level of activity among older adults in Iceland, Ireland, Taiwan, Iran, the USA, UK and Brazil. Obesity (Balbale et al., 2013) increased the pain or discomfort derived from PA (Vaughn, 2009; Antikainen et al., 2010), while fatigue (Vaughn, 2009) and the ageing process (Beck et al., 2010) were also barriers to PA in the USA and UK.

3.6.1.6. Establishment of Early PA Patterns

Participation in PA later in life was linked to participation in PA earlier in life (Ferrand et al., 2012; Goyder et al., 2014). Positive past experiences (being active) and lifelong PA habits have been found to act as motivators for PA among Canadian and British seniors (Weeks et al., 2008; Beck et al., 2010). Similar results were found among women in Iceland and the USA; Bjornsdottir et al. (2012) and Balbale et al. (2013) both found that older adult women with former physically active lifestyles usually stay active when they get older.

On the other hand, no experience or negative past experiences with PA may inhibit any attempt to be active in the future (Weeks et al., 2008; Stathi et al., 2012). Similarly, a former inactive lifestyle was found to be a barrier to adopting PA in Iceland and the USA (Bjornsdottir et al., 2012; Balbale et al., 2013). However, Stathi et al. (2010) found that past PA behaviours did not have any influence on later PA engagement among 21 older adults (70 years and above) in the UK.

3.6.1.7. Structured Daily Life

Organised older adults living in Iceland who scheduled PA in their daily routines were more likely to be active regularly (Bjornsdottir et al., 2012). A similar result was seen in England, where Beck et al. (2010) found that the availability of more time after retirement could lead to procrastination, so setting firm plans for PA was important for ensuring regular activity. Regular PA routines appear to give physically active participants a feeling of daily purpose (Beck et al., 2010).

3.6.1.8. Worries and Fears

Worries and fears may hinder PA engagement in the USA (Vaughn, 2009). Fear of injury has been documented as a barrier to exercise in Brazil (Cassou et al., 2011). Fear of falling (Broderick et al., 2015; Mathews et al., 2010; Stathi et al., 2012; Lees et al., 2005) has also been found to hinder PA in Ireland, the UK and USA. Some older adults fear going out alone, which may have a negative influence on their activity level (Stathi et al., 2012). In Iceland and the UK, another type of fear that acts as barrier is fear of the dark and going out in the evening (Bjornsdottir et al., 2012; Hardy and Grogan, 2009). This may comprise a reason for not attending evening exercise classes, as research suggest that older adults usually prefer to go out during the day (Hardy and Grogan, 2009). This preference should be considered when designing PA classes for older people (Hardy and Grogan, 2009; Bjornsdottir et al., 2012).

3.6.1.9. Perceptions of Ageing

Some older adults may connect age with limited abilities (Broderick et al., 2015). This belief may act as a barrier to accepting PA when they grow older. Perceptions of decline with ageing were also found among older adults in England (Stathi et al., 2012). A study conducted in the USA, which included 241 community-dwelling individuals aged 50 to 80, found that individuals with more positive self-perceptions of ageing tended to practice more preventive health behaviours over the next two decades, after controlling for age, education, functional health, gender, race and self-rated health (Levy and Myers, 2004). Another US study examined whether older adults’ age expectations differed by ethnicity (Sarkisian et al., 2006). A total of 611 older adults (65+ years, including non-Latino whites, African-Americans and Latinos) from 14 senior centres completed the self-administered Expectations Regarding Ageing (ERA-38) Survey and s measure of HRQOL. The results showed that age expectations were significantly lower among Latinos compared to African-Americans and non-Latino whites, even after adjusting for health characteristics and age, but no significant difference was found between the three ethnic groups after adjusting for formal education. The study also showed that being older and having worse HRQOL may be strongly associated with lower age expectations. The study was limited by the fact that it took place in one geographic region, with a non-random recruitment method, which may affect the generalisability of the results.

3.6.2. Interpersonal Level

3.6.2.1. Sociability and Social Support

People who are socially active may be more physically active as well (Bjornsdottir et al., 2012). Social support may be one of the strong PA motivators among older adults in the USA, Iceland and Taiwan (Vaughn, 2009; Antikainen et al., 2010; Mathews et al., 2010; Bjornsdottir et al., 2012; Mahmood et al., 2012; Lin et al, 2007). Belza et al. (2004) found that family support in purchasing exercise equipment, providing transportation, and encouragement motivates older adults to maintain PA in the USA. Broderick et al. (2015) also found that support from family was a strong facilitator of exercise among frail older adults in Ireland either in the form of directly advising them and asking them to exercise or indirectly by involving them in some activities together, such as playing with grandchildren. Plonczynski et al. (2008) found that social support was positively associated with household activity, so when social support increases, the level of household activity increases among rural older women in the USA.

Additionally, support from peers was a strong PA motivator (Bjornsdottir et al., 2012). In the UK, Hardy and Grogan (2009) found that peer support may improve self-efficacy as older adults feel more confident and comfortable when attending classes with peers who share the same challenges and goals. Heo et al. (2013), Biedenweg et al. (2014) and Ferrand et al. (2012) also found that social networking, which includes social belonging and interaction with others, was important for maintaining activity levels among older adults in the USA and France. Dunlop and Beauchamp (2013) conducted a case study to examine the beneficial elements of an all-male, older-adult exercise program in Canada. Nineteen semi-structured interviews were conducted with males over 60 years old to gain an in-depth understanding of the factors that help program participants adhere to the program. The data analysis revealed that homogeneity among the group was an important motivator and improved adherence to the program, as all the participants were men of a similar age, so they understood each other better. Interpersonal comparisons between peers provide motivation for successful ageing, as seeing other active peers as role models motivates the rest of the group. Older adults prefer to have a buddy system and exercise in groups over exercising alone in the UK and USA (Horne et al., 2012; Lees et al., 2005), as being part of a group improves one’s sense of belonging. This may motivate participants to adhere to a PA program even if they dislike it, if they feel that there are social benefits to be gained from participation (Horne et al., 2012).

Support and care from exercise leaders was found to be a strong motivator for PA adherence (Dunlop and Beauchamp, 2013; Bjornsdottir et al., 2012). A qualitative study was conducted to explore the influence of primary health care professionals on PA among 60 to 70-year-old white and South Asian community dwellers in England (both active and inactive). The findings showed that physician advice and support were seen as motivators to engage in PA among older adults, although the advice given usually related to health problems, not to increasing their general PA level (Horne et al., 2010). The feeling of being listened to by physicians was found to motivate older adults to take their advice (Horne et al., 2010). Consistent with these results, support from health professionals (who were South Asian workers) was also a motivator for PA adoption among South Asian older women in the UK. In this case, the health professional encouraged Muslim women to attend culturally sensitive, gender-segregated classes, as gender segregation was essential to motivate South Asian Muslim women to initiate PA (Horne et al., 2012).

On the other hand, a lack of social support can be a barrier to PA (Vaughn, 2009). A lack of family encouragement was a barrier to being active among Iranian older adults (Abolfazl et al., 2011) and retired older women in Iceland (Bjornsdottir et al., 2012). A negative family influence on PA engagement could occur when family members discourage older adults from doing household routines or prevent them from exercising (Broderick et al., 2015).

Not fitting into a group was described as a perceived barrier to taking up PA in England (Beck et al., 2010) and the USA (Biedenweg et al., 2014). A lack of peer encouragement was also a barrier to being active in Iran (Abolfazl et al., 2011). In Ireland, Broderick et al. (2015) found that although peer support was seen as a motivator for exercise among frail older adults, they felt they no longer had access to friends’ support due to the death of a friend, medical conditions or even a lack of transportation. This lack of social engagement and lack of a social network may increase the feeling of isolation and loneliness (Broderick et al., 2015; Balbale et al., 2013; Cassou et al., 2011).

No encouragement from staff was seen as a barrier to PA among older adults in a retirement community in Iceland (Bjornsdottir et al., 2012). In the UK and New Zealand, PA adoption could be affected negatively when no encouragement was given regarding PA as a preventive measure by health care professionals (Horne et al., 2010; Kolt et al., 2006). Ageist attitudes from health professionals also act as barriers to taking health advice. In the UK, neglecting to offer information about PA recommendations and how it can be performed safely was also a barrier to adopting PA, as when instructor support is lacking, participants are not sure if they are doing the exercises correctly (Horne et al., 2010).

3.6.2.2. Culture

A PA culture where the social surroundings (cultural context) encourage PA will motivate the adoption of an active lifestyle (Bjornsdottir et al., 2012). Cultural norms — such as the family environment in Tongan culture, where older adults must be looked after by their adult children — were seen as barriers to PA adoption as sometimes children may be overprotective and prevent older adults from performing certain activities (Kolt et al., 2006). Norms of inactivity may also affect PA participation (Balbale et al., 2013) as they may cause a lack of community support, as reported by inactive African-Americans in USA (Friedman et al., 2012). Norms about women’s traditional roles can also negatively affect PA participation in the USA (Balbale et al., 2013), whereby some of the PA activities may be seen as unacceptable in a particular cultural context. Similarly, Mathews et al. (2010) conducted a qualitative study to explore the perceived PA enablers and barriers among American, community-dwelling older adults (50+ years old) from different ethnic backgrounds. Forty-two focus group sessions, which included a total of 396 participants from nine states, were conducted in English, Chinese and Vietnamese. The findings showed differences in the perceived PA enablers and barriers among the different ethnic groups. Taking these differences into consideration when designing a PA promotion program may improve the effectiveness of the program by tailoring it to the target group’s values and beliefs. Similar findings were shown in Belza et al.’s (2004) study, which involved seven focus groups comprised of 71 community-dwelling older adults reflecting seven different ethnicities in the USA. The aim was to explore the barriers to and motivators for PA. They found that although there are common themes between the groups, there were also specific and different needs and cultural requirements for each ethnic group.

3.6.2.3. Intergenerational Influences

Parents may act as a role model in PA. It was found that if their parents were active in early or later life, older people may be motivated to be like their parents in Canada and the USA (Weeks et al., 2008; Vaughn, 2009). Similar connections with parents and how parents aged emerged as frequent motivators for physically active participants. In England, older adults may use PA as a means of achieving or avoiding a similar ageing process (Beck et al., 2010). On the other hand, in Canada, when parents have negative attitudes about PA, older adults may see PA as a negative behaviour (Weeks et al., 2008) and avoid adopting it. Intergenerational connections on the community level may motivate older adults to be more active. One means to do so could be engaging in volunteering activities in local schools, churches, colleges, libraries and community centres. This outreach provides contact and engagement with children or younger adults (Mahmood et al., 2012).

3.6.2.4. Role Demands

Family commitments, such as caring for children and doing household work, may affect activity level negatively (Vaughn, 2009; Bjornsdottir et al., 2012, Lin et al., 2007; Cassou et al., 2011; Balbale et al., 2013). Social commitments may reduce the time older adults have for healthy lifestyle choices (Lees et al., 2005; Vaughn, 2009; Abolfazl et al., 2011; Cassou et al., 2011; Friedman et al., 2012; Biedenweg et al., 2014; Schwingel et al., 2015). Family responsibilities were also a barrier among older Filipinos living in Hawaii (Ceria-Ulep et al., 2011) Tongans (Kolt et al., 2006) and Latinos living in the USA (Schwingel et al., 2015), as participating in taking care of grandchildren is a cultural norm among extended families in these cultures. Integrating PA into daily activities (such as walking for shopping, taking grandchildren to school) was a strong motivator to maintain an active lifestyle among South-Asian older adults in England as it becomes part of their role as a care provider for their family (Horne et al., 2012). This may help people overcome the routine obstacles that serve as barriers to PA (Cassou et al., 2011). Some women perceived that taking care of children increased their workload and thus, their activity level. Others felt that parenthood may affect exercise engagement negatively as women may have to give up work and stay at home to provide care for children, which may result in a lower activity level (Broderick et al., 2015). Family transitions over the life course may have a negative effect on PA adoption, especially among women. Some women who had busy lives in the past and were providing care to children, parents and spouses preferred to rest when they got older and engage in fewer activities (Weeks et al., 2008). There are other responsibilities that could act as barriers to PA among older adults (Antikainen et al., 2010); work limitations (Abolfazl et al., 2011; Ceria-Ulep et al., 2011) and community responsibilities, such as religious and church obligations (Ceria-Ulep et al., 2011), constitute some of these barriers.

3.6.2.5. Modern Technology

The use of new technology and machinery was seen as a barrier to adopting an active lifestyle among older adults in Ireland, as dependence on technology reduces the level of activity that was previously done manually (Broderick et al., 2015). Among Tongan older adults, differences in modes of transportation were also reported as a barrier, as walking was replaced by the use of cars when they moved to New Zealand (Kolt et al., 2006).

3.6.3. Environmental Level

3.6.3.1. Weather

A desire to walk in the fresh air may promote walking, while cold (Vaughn, 2009; Belza et al., 2004), poor air quality (Lin et al., 2010) or rainy weather and icy walkways may inhibit walking, as the presence of these conditions increases fear of falling in the USA, Iceland, Taiwan and Brazil (Gallagher et al., 2010; Bjornsdottir et al., 2012; Balbale et al., 2013; Cassou et al., 2011). Bad weather was also a barrier to PA among 206 older adults (65± years) in a cross-sectional study conducted in Taiwan (Lin et al., 2010). Heat and sun in the summer may also affect PA in the USA (Rosenberg et al., 2013).

3.6.3.2. Neighbourhood

The perceived quality and accessibility of the built and natural environments influence neighbourhood activity in older adults in a number of ways. Enablers of walking among older adults in Iceland include the natural environment (such as rivers, trees and mountains), sculpture parks and gardens in the neighbourhoods, and the presence of water and attractive buildings (Bjornsdottir et al., 2012). In Iceland, the UK, USA and Canada, PA is also affected by the presence of convenient features (Bjornsdottir et al., 2012; Stathi et al., 2012), such as places to rest, eat or use the toilet, and the availability of amenities, such as parking areas (Gallagher et al., 2010; Mahmood et al., 2012). The presence of public walking tracks and trails also has an impact (Gallagher et al., 2010). Paved, flat, accessible sidewalks or well-maintained pathways and the presence of curb ramps, especially for people using assistive devices to help them carry out daily activities, were highlighted as motivators (Stathi et al., 2012; Mahmood et al., 2012).

Community events, such as festivals and local farmer markets on the weekends, in addition to the availability of convenient, utilitarian type of destinations, such as grocery stores, banks, post ofﬁces or malls (Mahmood et al., 2012; Bjornsdottir et al., 2012; Stathi et al., 2012), could keep older adults physically active while doing their errands (Mahmood et al., 2012). In Canada, shopping malls were described as easily accessible places to walk as they have smooth, wide walking surfaces and resting places. They are also temperature controlled and very good meeting places for socialisation (Mahmood et al., 2012).

On the other hand, poor outdoor areas may be a barrier to PA in Iceland (Bjornsdottir et al., 2012). Vacant houses, overgrown lots, trash, inadequate lighting (Stathi et al., 2012), fallen trees or branches, the presence of hills and slopes (Rosenberg et al., 2013; Bjornsdottir et al., 2012), damage to the pavement, a lack of pavement, slippery pavement and curb cuts, stairs (Broderick et al., 2015), no alternative entry for assistive devices (Rosenberg et al., 2013), a lack of handicapped parking or parking far from the destination or even a lack of driver awareness about car parks (Rosenberg et al., 2013) were all identified as inhibitors to neighbourhood walking in the UK, USA, Iceland, Ireland and Canada (Gallagher et al., 2010; Mahmood et al., 2012; Bjornsdottir et al., 2012).

The presence of families with children, people engaging in PA, familiar faces and neighbours, smiling, friendly people, the presence of a senior patrol, and the embedded presence of police in the community (Mahmood et al., 2012) were identified as factors that encouraged neighbourhood walking as they may increase the sense of safety among older adults in the USA and Canada (Gallagher et al., 2010). Mahmood et al. (2012) showed that maintenance, upkeep and traffic hazards were seen as barriers to PA because they may affect physical safety among older adults in Canada and the USA. The perception of hazardous surroundings in the neighbourhood leads to an impression of susceptibility, which inhibits people from being physically active in areas that they would otherwise love using (Vaughn, 2009; Belza et al., 2004; Balbale et al., 2013; Cassou et al., 2011). Heavy traffic and busy streets were seen as barriers to adopting PA in Ireland, the USA, Taiwan and Australia (Broderick et al., 2015; Rosenberg et al., 2013; Lin et al., 2007; Lin et al, 2010; Shibata et al., 2015).

3.6.3.3. Presence of Facilities and Programs

The presence of indoor exercise facilities may motivate people to participate in PA during bad weather periods (Bjornsdottir et al., 2012). In the USA, strong influencers of PA initiation include the presence of community-based programs (Vaughn, 2009), such as local community or senior community centres (Vaughn, 2009). In the USA, access, availability, regular scheduling, and the variety of program choices within these centres (Lees et al., 2005), including physical and social activities (Mahmood et al., 2012), are also important. The customs and traditions considered in the running of PA programmes, such as gender segregation and the added social component, were strong influencers on the maintenance of PA level in Canada (Dunlop and Beauchamp, 2013) and the UK (Stathi et al., 2010).

A lack of ethnic specific exercise facilities was seen as a barrier to adopting PA in the USA (Belza et al., 2004) as well as preferring not to exercise with people from different cultures due to cultural attire differences, as noted among some older adults in New Zealand (Kolt et al., 2006). A lack of indoor exercise facilities (Bjornsdottir et al., 2012; Kolt et al., 2006) among older Chinese adults in Taiwan and the USA (Lin et al, 2007; Lin et al., 2010) or the inaccessibility of exercise facilities (Vaughn, 2009) were also found to be barriers. A lack of affordable gymnasium and exercise equipment was also a barrier to PA adherence in the USA (Balbale et al., 2013).

3.6.3.4. Leadership Behaviours

Leaders who encourage communication and provide choices and individualised attention by tailoring the program to individual needs and abilities (Dunlop and Beauchamp, 2013) help build a trusting relationship with older adults, which motivates them to adhere to PA programs in Canada and the UK (Stathi et al., 2012).

3.6.3.5. Accessibility of Information

Health information or knowledge about risk factors and disease prevention were strong motivators for PA among seniors in the USA (Vaughn, 2009). Having adequate offers of physical training that matched their interests and capabilities and sufficient awareness about the available programs were additional motivators for PA in Iceland (Bjornsdottir et al., 2012).

On the other hand, limited information about risk factors and disease management was a barrier to PA engagement in the USA (Vaughn, 2009). A lack of age-relevant information about PA (Kolt et al., 2006) and classes that meet older adults’ needs may prevent them from engaging in PA in New Zealand and the UK (Hardy and Grogan, 2009). Inadequate offers of physical training could be an added barrier in Iceland (Bjornsdottir et al., 2012).

3.6.3.6. Financial Cost

The high cost of structured PA classes may prevent older adults from attending them in the UK, USA and Brazil (Hardy and Grogan, 2009; Belza et al., 2004; Cassou et al., 2011; Mathews et al., 2010). However, low or no-cost programs may help older adults join and adhere to programs in the UK and USA (Stathi et al., 2010; Biedenweg et al, 2014).

3.6.3.7. Transportation

The importance of accessible and convenient transportation was noted among older adults in the UK (Stathi et al., 2010) as well as the USA and Canada (Mahmood et al., 2012). Similarly, a lack of transportation to activity facilities was seen as a barrier to attendance at PA activities in the USA (Belza et al., 2004) and New Zealand (Kolt et al., 2006).

3.6.3.8. Screening

Resnick et al. (2005) conducted focus groups with 122 community-dwelling older adults (50 and over) to explore their experiences regarding screening prior to initiating a PA program. Different types of screening were identified, such as reviewing health history, checklists, checking blood pressure or heart rate, physical examination or even performing a type of exercise to evaluate performance abilities. Participants reported that screening built their confidence in their ability to perform PA and helped them assure safety. They thought that screening helped in choosing the right exercise for their needs and abilities. On the other hand, some participants believed that screening was accompanied by unpleasant sensations, such as fatigue, and it reduced their confidence in their ability to exercise, especially among people who were excluded from the PA program after the screening (Resnick et al., 2005).

### 3.6.4. Summary of Barriers and Motivators

The barriers and motivators outlined above will vary based on the particular type of PA. For example, screening, cost and leadership behaviour is related to structured exercise classes, while environmental factors, such as neighbourhood surroundings, are more related to unstructured PA. When interpreting the findings of these studies, care should be taken regarding the possibility that some people defined PA as structured exercise which should be performed in gyms, while others defined the housework and active work they performed daily as a form of PA.

**3.7. The Importance of a Culturally Appropriate Health-Promotion Programme**

As the previous sections have illustrated how each geographic population faces different barriers and motivators for PA, it can be concluded that the one-size-fits-all approach is not effective for health promotion. Lifestyle-changing health promotion programmes, such as programmes that integrate PA into everyday life (WHO, 2004), should be given higher priority by health care systems (Haskell et al., 2009) as governments play a major role in promoting preventative measures and behavioural changes (WHO, 2004). The WHO (2010) has recommended that such programmes be part of the national health policies in all countries and stresses the importance of ensuring PA recommendations are culturally appropriate for the target populations by considering preferences, traditions, culture, social norms, religious values, age and gender issues (WHO, 2004; King and King, 2010; WHO, 2009). These considerations will help policymakers to understand the types of PA that are feasible in specific target groups while connecting PA to individuals’ daily lives and creating more enabling environments on all levels (WHO, 2004; Marttila et al., 1998). With older adults, one of the first steps in connecting PA to individuals’ daily lives is to explore their perceptions of healthy lifestyles and try to understand the effects of context and environment on their lives (Ellen, 2012; Barnes et al., 2013; Schwingel et al., 2015). This research is necessary in order to empower older adults and engage them in the design of effective policies (Ellen, 2012; WHO, 2009; Barnes et al., 2013) and multi-level interventions that promote healthy choices as easy choices (Kohl et al., 2012).

It is important to use an evidence-based approach to meet the needs of target communities (HSS, 2008). For example, when the Qatari national PA recommendations were designed, weather was considered as summer in Qatar is extremely hot and outdoor activities should be limited (Al-Bibi, 2014). Religious faith was also considered in the design process, as Muslims must fast during daylight hours throughout the month of Ramadan, and PA should be modified to avoid any health complications (Al-Bibi, 2014). The Qatari PA guidelines for older adults were similar to other international recommendations in terms of PA frequency and repetitions, but no further recommendations were provided to suit the specific needs and culture of older adults in Qatar. Taking into consideration the internal and external factors that could affect adoption of PA may help to design culturally sensitive protocols that are effective and sustainable for increasing activity in specific geographic locations (Lin et al., 2007; Markova and Broome, 2007; WHO, 2007; Schwingel et al., 2015; Cress et al., 2005; Kohl et al., 2012). For this reason, it is important to support research into factors that may affect behavioural choices (WHO, 2008) and inform policies for evidence-based practice (WHO, 2004), especially among older adults (Silcock and Sinclair, 2012).

Several studies have tried to connect the culture of the target population with promotion of physical activity programmes in order to improve acceptance rates. For example, faith has been found to be an important motiving factor for older adults who take up PA programmes (Wilcox et al., 2007). Qualitative work among African and Latin American populations in the USA has found that integrating religious components into PA promotional messages could increase uptake rates (Friedman et al., 2012; Wilcox et al., 2007; Schwingel et al., 2015).

The preferences of older adults should be explored before designing any health promotion programme in order to ensure appropriate health messages are being provided (Hawkins et al., 2007). For example, focus groups exploring participants’ opinions and preferences when designing culturally sensitive health messages for older Mexican women show that exercise programmes that include friends are preferred over solo activities (Balbale et al., 2013). PA that is culturally meaningful, such as salsa dancing, is also preferred among Hispanic women living in the USA (Balbale et al., 2013). Culturally sensitive environmental interventions, such as building sidewalks next to roads and creating gender-segregated exercise facilities, were suggested by public health managers in Oman (Mabry et al, 2013). A study of Qatari women aged 30 years and older found that participants preferred recreational facilities that are culturally sensitive and consider Qatar’s culture of modesty and assertiveness, such as facilities that are gender-segregated (Donnelly et al, 2011). Ali et al. (2010) reported a similar suggestion for gender-segregated facilities among Emirati women aged 20-60 years. Use of mass media, such as TV, was also suggested as the preferred option for promoting PA among Kuwaiti adults (Arab, 2006) and Qatari women (Donnelly et al, 2011).

In the UAE, Ypinazar and Margolis (2006) have explored the perceptions of older Muslim and Arab Emirati adults (n=10, ≥ 65 years) concerning religion, health and disease. While the study did not focus on PA, the qualitative findings showed that Islamic beliefs played a major role in all of the participants’ lives. For example, health and illness were viewed as predetermined by God. Participants also believed that as Muslims they had to protect their own health, which is an Islamic principle. Additionally, physical functioning was seen as part of being in good health. With further questioning, all participants displayed an awareness of invisible diseases that may not show any physical signs. When asked about the causes of disease, most participants found this question difficult to answer, but generally said that health and illness are given by God. They also related disease to lifestyle and expressed a belief that modern lifestyles, including chemically-enhanced food and reliance on machines, were responsible for diseases that did not exist in the past. Participants indicated that they were healthier in the past because they were physically active. Physical activity was also connected to prayer, which should be performed five times per day. Although all participants showed a full awareness of infectious diseases, there was an obvious lack of understanding of chronic diseases, especially diseases without symptoms. It was noted that the principle of disease prevention was lacking and that participants would seek medical care only when feeling unwell. When asked for their views about how to protect their health, participants stated that Islam instructed them to avoid overeating, with only half of the participants drawing on the importance of physical activity. Other participants spoke of cleanliness, which is also an Islamic principle, and some expressed the importance of avoiding anger and sadness.

# 3.8. Chapter Summary

As discussed, the world is facing a physical inactivity epidemic, with the prevalence of inactivity increasing as the population ages. This chapter has discussed the benefits of engaging in regular PA for older adults, including prevention and treatment of NCDs and improvement to QOL. Several barriers and facilitators to PA have been identified in global contexts, but little research has been carried out in the GCC. As culturally relevant health promotional programmes are important to ensure uptake of PA and to better understand PA behaviour in Arab and Muslim communities, the next chapter presents a systematic review to identify up-to-date evidence of the barriers and facilitators for PA among adults in the GCC.

# CHAPTER 4 - BARRIERS AND FACILITATORS TO PHYSICAL ACTIVITY AMONG ADULTS IN THE GULF COOPERATION COUNCIL REGION: A SYSTEMATIC REVIEW

This chapter is a systematic review of the published evidence explaining barriers and motivators of PA among adults in the GCC region. The chapter starts with the rationale and key question of the review. Then it proceeds with inclusion/exclusion criteria, search strategy, data extraction, quality assessment and data synthesis. The next section presents the results of the review. At the end of the chapter, findings and implications are discussed.

# 4.1. Introduction

## 4.1.1 Rationale

The importance of PA is well documented and discussed in detail in Section 3.4. The epidemic of physical inactivity as one of the major public health problems of the 21st century was also discussed in Section 3.2.5. Studies conducted in GCC countries showed a high prevalence of physical inactivity among both males and females in the region (Section 2.4), and thus it is particularly important to explore the reasons why people in the GCC do and do not engage in PA.

Benjamin and Donnelly (2013) conducted a systematic review to explore barriers and facilitators influencing the PA of Arabic adults. The review included 15 articles published in English. The review identified several factors that could affect PA levels among Arab adults. Lack of time, traditional roles for women and hot weather were some of the barriers to PA identified in the review. On the other hand, having good social support, Islam and weight reduction were some of the factors that were found to promote PA among Arab adults. The aim of the current systematic review is to update the Benjamin and Donnelly (2013) review with a view to identifying up-to-date evidence on the barriers and motivators of PA among adults in Arabic and Muslim communities in GCC countries. The search of the Benjamin and Donnelly (2012) review was conducted to identify articles published from 2002 to 2013; the most recent included study was published in 2012.

Half of the studies in the Benjamin and Donnelly (2013) review were conducted in countries outside of the Arabian Gulf, so the cultural context is likely to be different even amongst the Arabian community. For this reason, the focus of the current systematic review was GCC countries only. The current review focused also on reviewing the methods of the studies as well as the findings (for example, how studies found/identified participants) and considered examining findings by age and/or PA level, where the data allowed.

## 4.1.2 Review Question

What are the barriers and facilitators to physical activity among Arab adults living in the GCC region?

# 4.2 Methods

A review protocol (Appendix 1) was designed using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) checklist (PRISMA, 2009).

## 4.2.1 Inclusion/Exclusion Criteria

Inclusion/exclusion criteria were developed to reflect the review question. Papers that were included in the review addressed barriers and facilitators to PA among Arab adults 18 years and older, conducted in GCC countries. Studies addressing both adults and children were included if data provided for adults were reported separately. Studies that reported barriers and facilitators among migrant workers living in the GCC region were included if they represented < 20% of the sample (cut-off is 20% for non-native), because the focus of the review was GCC countries, and migrant workers had a different cultural background which may affect results. Retrieved papers were restricted to those published in the English or Arabic languages after 2000. As the studies conducted in GCC countries were limited in number, no restrictions were placed on study design.

## 4.2.2 Search Strategy

The search strategy aimed to identify both published and unpublished studies. Medical subject headings (MeSH) is a preferred approach for literature searching as it helps develop a rigorous, efficient and comprehensive search strategy (Baumann, 2016). However, literature search strategies could not be developed using MeSH. MeSH terms were not available for all keywords in the review question and thus were not producing sensitive results. For this reason, an initial limited search of MEDLINE and CINAHL was undertaken, followed by analysis of the words contained in the title and abstract, and of the index terms used to describe the articles. A second search using all identified keywords and index terms was then undertaken across all included databases. Thirdly, the reference lists of all included reports and articles were scanned for additional studies to ensure literature saturation; additionally, the reference list of the systematic review conducted by Benjamin and Donnelly (2013) was also hand-searched. Citation searching of included papers and the Benjamin and Donnelly review was also done. The authors’ publication lists were searched to make sure that all relevant material had been captured.

The following electronic databases were searched on the 19th July 2016 and updated on 8th October 2018: MEDLINE (OVID interface), Embase (OVID interface), Cochrane Central Register of Controlled Trials, CINAHL (via EBSCO), Web of Science/Knowledge and PsychINFO (via OvidSP). These databases were selected in order to cover medical, health and social science topics. An example search strategy with details of the keywords used to search databases can be found in Appendix 3. Grey literature was also searched. The search engines Google and Google scholar were searched on the 19th July 2016 and updated on 8th October 2018. A combination of the following keywords was used in the searches: Gulf Cooperative Council, GCC, Kuwait, Kingdom of Saudi Arabia, KSA, Qatar, United Arab Emirates, UAE, Oman, Bahrain, Arabian Gulf, middle east, Arab, physical activity, physical fitness, physical exercise, barriers, motivators, factors, influencers, facilitators, promotors, predictors and enablers.

Studies were exported to reference management software (Mendeley) and duplicates were deleted. Records were screened on title and abstract and irrelevant articles were excluded. Full texts of all records included based on the abstract were obtained and examined; reasons for exclusion by full text can be found in Appendix 4.

## 4.2.3 Data Extraction

Data were extracted using a standardised extraction table (Appendix 2). The table included population, setting, study type, aim, methods and results of the study. Barriers and facilitators to PA were also extracted by myself. After extracting all included studies, 20% were cross-checked by the second supervisor, who made suggestions but left the final decision to myself.

## 4.2.4 Quality Assessment

Two tools were used to assess quality of the included studies. The Critical Appraisal Skills Programme (CASP) checklist for qualitative studies was used to assess the quality of qualitative studies. It is a widely used tool in systematic reviews and includes 10 questions to help appraise the quality of the study. The fields assessed included appropriateness of methodology, design, recruitment strategy, data collection method, ethical issues, rigour of data analysis and the reporting of the findings. The assessor is asked to record “yes”, “no” or “can’t tell” when answering the questions. Although CASP did not suggest a scoring system, I positioned the studies in one of three categories: good quality where all or majority of criteria have been achieved, fair quality where some of the criteria have been achieved, or poor quality when none or little of the criteria have been achieved.

Quantitative studies were assessed using the National Institutes of Health (NIH) quality assessment tool, which was straightforward, clear and widely used in published systematic reviews (Wardle and Steel, 2015; Saab et al., 2016). The tool included 14 questions assessing study objectives, reporting of population, participation rate, inclusion/exclusion criteria, justification of sample size, independent and dependent variables, blinding of assessor and the use of confounding variable measures. The assessor is asked to record “yes”, “no” or “other- [not reported, not determined, not applicable]” to each question in the checklist. The tool is used to position studies in one of three categories: good quality where all or majority of criteria have been achieved, fair quality where some of the criteria have been achieved, or poor quality when none or little of the criteria have been achieved (NIH, 2014).

## 4.2.5 Data Synthesis

Data (barriers and facilitators) were synthesised using the framework of the ecological model (Section 3.5). Factors were synthesised into the following levels: interpersonal/individual level, intrapersonal level and community level. The levels affect each other. Thematic synthesis was used to synthesise the findings (Thomas and Harden, 2008). Findings from qualitative and quantitative papers were coded via line-by-line coding of the whole results section of each paper (quantitative and qualitative papers) to make sure that no barriers/motivators were missed. Initial codes were listed and clustered into one of the three levels of the ecological model. Codes in each level were grouped into descriptive themes, and the relationships between themes were explained (Thomas and Harden, 2008; Snilstveit et al., 2012; Lucas et al., 2007). Quotes from included papers were used when possible to aid clarity of the interpretations and improve transparency (O’Cathain et al., 2010). As quantitative papers were categorical rather than thematic, the Discussion section was also coded to ensure that any discussed details regarding the barriers and motivators were gathered.

# 4.3 Results

## 4.3.1 Retrieved Articles

A total of 3,016 records were identified through the database search. Following the deletion of duplicates, 1,963 articles were screened on title and abstract and irrelevant articles were excluded. Forty-one full-text articles were assessed for eligibility. Following the exclusion of 21 articles (Appendix 4), three qualitative studies, one cohort study and 17 cross-sectional surveys were included. Figure 4-1 below summarizes the study selection process.

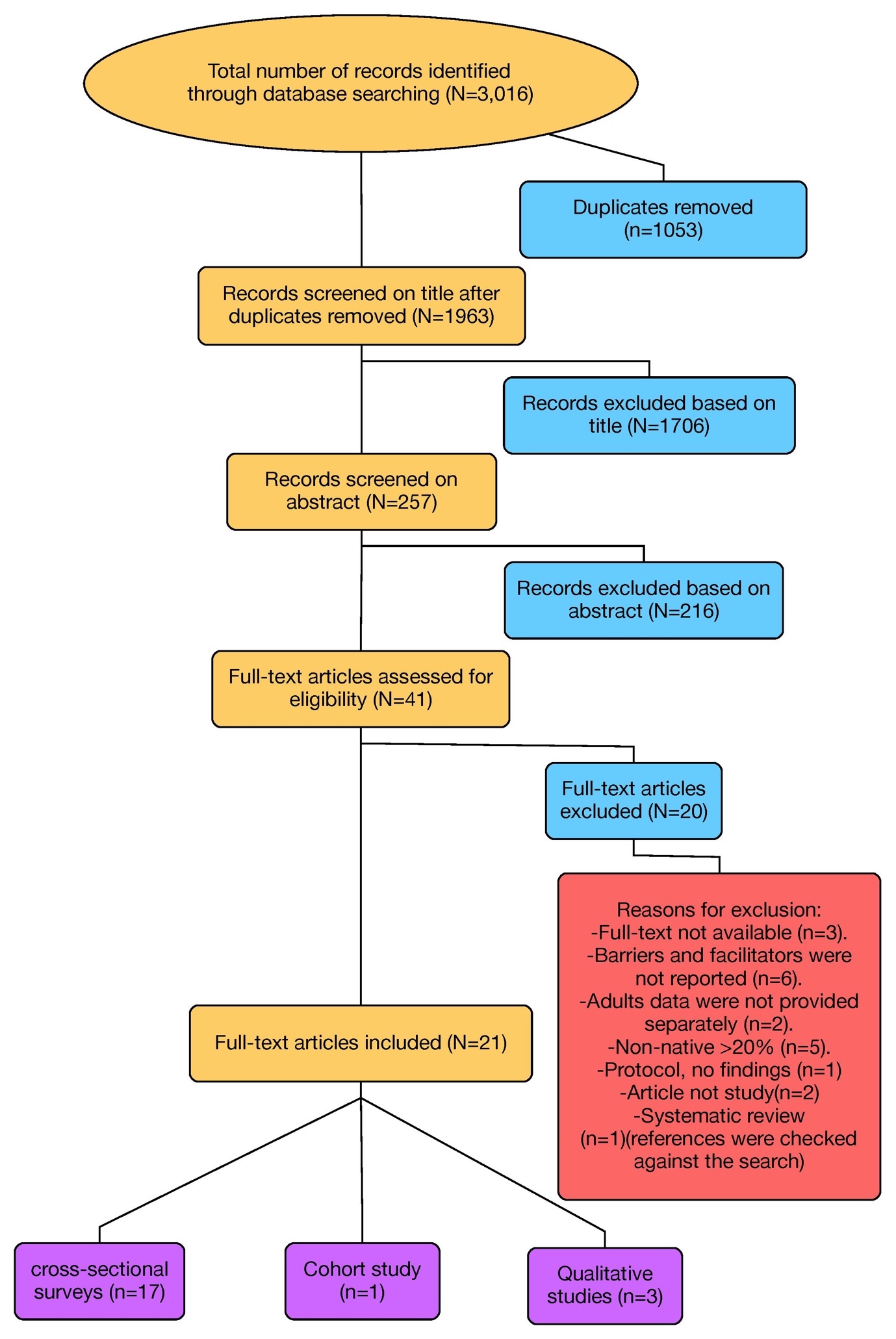


Figure 4-1 Study selection process

## 4.3.2 Characteristics of Included Studies

Twenty papers relating to 21 studies (10,752 participants) were included (Table 4-1). The studies encompassed 11 Saudi studies, with five studies reporting data from Kuwait, three studies from UAE and two from Oman; participants were native people living in these countries. Twelve studies reported barriers to PA participation, one study reported motivators to PA and eight studies reported both barriers and motivators. Nine studies collected data in universities, nine studies in medical settings, two in other public or private institutions, and one used social network services. Ages of participants across included studies ranged from 18 to 74 years. The smallest sample size in quantitative studies was 94 (Samara et al., 2015) and the largest sample size was 2,176 (Amin et al., 2011). For qualitative studies, the smallest sample size was 10 (Mabry et al., 2013) and the largest was 75 (Ali et al., 2010). Four studies did not report PA levels among participants (Ali et al., 2010; Mabry et al., 2013; Musaiger et al., 2014; Allafi and Waslien, 2014). Ten studies reported that more than 50% of their sample were physically inactive (Table 4-1).

Table 4-1 Characteristics of studies included in the review

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Study** | **Population** | **Country/setting** | **Gender** | **Age (years)** | **PA level** | **Design** | **Instruments** |
| **AboZaid and Farahat (2010)** | N= 329 patients | KSA, Family Medicine Clinics (armed forces hospitals) | 139F/ 190 M | 23-56 | 53.8% were active; the rest were inactive[[3]](#footnote-3) | Quantitative- Cross-sectional | Pre-designed questionnaire (PA type was based on IPAQ -short form) (through direct interview) |
| **Al-Baho et al. (2016)** | N=858 patients | Kuwait, Primary healthcare centres | 49.6% F  50.4% M | 21-65 | 38.1% low PA  55% moderate  6.9% high PA3 | Quantitative- Cross- sectional | Interview questionnaire (Short form IPAQ + list of barriers) |
| **Al-gilany and Al-masry (2011)**  [only results from GCC countries are reported] | N= 297 Students | KSA, University | 67 F/ 230 M | Mean age 20.8 (SD1.6) | 41.1%  Low -  48.1% Moderate -  10.8% High3 | Quantitative- Cross-sectional survey | Self-administered questionnaire (IPAQ) + list of barriers and benefits of PA |
| **Ali et al. (2010)** | N= 75 | UAE, Health Centres | F | 20–60 | Not Reported | Qualitative- cross-sectional | Focus groups |
| **Alkaabi et al. (2009)** | N= 390 patients | UAE, Clinics | 241 F/ 149 M | mean age 52 (SD 9.9) | 3% met recommended AHA and ADA guidelines for PA, the rest were considered inactive[[4]](#footnote-4) | Quantitative- Cross-sectional | Interviewer administered Questionnaire (the assessment of customary activity in the elderly + list of barriers and benefits of PA) |
| **Allafi and Waslien (2014)** | N= 1370 adults | Kuwait, social networking services (Twitter and Facebook) | F/M  Proportions not reported | 18-59 | Not Reported | Quantitative- cross-sectional Survey | Self-administered Questionnaire (online) |
| **Al-Otaibi (2013)** | N= 242 | KSA, 8 health centres | 124 F/ 118 M | 20-56 | 40.7% M and 56.6% F low PA  22.5% M and 20.3% F moderate  39% M and 21% F active[[5]](#footnote-5) | Quantitative- Cross-sectional | Questionnaire through direct interview |
| **AlRefaee and AlHazzaa (2001)** | N= 1333 adults | KSA, schools and public and private institutions | M | 19-68 | 53% inactive  27.5% irregularly active  19.5% regularly active[[6]](#footnote-6) | Quantitative- Cross-sectional | Self-administered Questionnaire |
| **Al-Reshidi (2016)** | N= 190 physicians | KSA, Medical City | 75 F/ 115 M | 24-37 | 68.4% low PA  28.4% moderate  3.2% high (based on weekly METs)3 | Quantitative- Cross-sectional | Self-administered Questionnaire (short form IPAQ + questions regarding barriers to PA) |
| **Amin et al. (2011)** | N= 2316 patients | KSA, Health Centres | 967 F/ 1290 M | 18-64 | 48% low  35.8% moderate  20.2% men, 11.3% women high[[7]](#footnote-7) | Quantitative- Cross-sectional | Questionnaire- through direct interview (GPAQ + perceived barriers to leisure PA – closed-ended questions) |
| **Arab (2006)** | N= 100 | Kuwait, governmental institutions | 50 F/ 50 M | 18-55 | 73% moderate PA (based on weekly METs)3 | Quantitative- Cross-sectional | Self-administered Questionnaire (Barriers to PA and disability survey B-PADs+ IPAQ-short form or PA scale for individuals with physical disability) |
| **Awadalla et al. (2014)** | N= 1275 students | KSA, university | 831 F / 462 M | 17-25 | 58% inactive  29.1% moderate  12.9% high3 | Quantitative- Cross-sectional | Self-administered Questionnaire (short form IPAQ) |
| **Berger and Peerson (2009)** | N= 20 students | UAE, University | F | 18-27 | Inactive (not engaging in any physical exercise) | Qualitative- cross-sectional | 5 semi-structured, in-depth interviews and 2 focus groups |
| **Gawwad (2008)** | N= 302 students | KSA, University | 152 F/ 150 M | 20-26 | 9.9% regularly active[[8]](#footnote-8) | Quantitative- Cross-sectional | Self-administered questionnaire |
| **Khalaf et al. (2013)** | N= 663 Students | KSA, University | F | Mean age 20.4 (SD 1.5) | 220 low PA  220 moderate PA  220 high PA (based on METs tertiles) | Quantitative- Cross-sectional | Self-administered Questionnaire Arab Teens Lifestyle questionnaire (ATLS) |
| **Li et al. (2015)**  (only data from GCC countries were reported) | N= 104 students | Oman, University | 53 F/ 51 M | 18-22 | Low PA | Quantitative- Cross-sectional | Self-administered Questionnaire |
| **Mabry et al. (2013)** | N= 10 public health managers | Oman, Ministry of Health | F/M | Not reported | Not Reported | Qualitative- cross-sectional | Semi-structured interviews |
| **Majeed (2015)** | 215 students | KSA, university | F | Mean age 19.27 (SD 0.954) | 75.3% not exercising regularly, among the rest who are exercising 58% do > than 1 time a week | Quantitative- Cross-sectional | Self-administered Questionnaire (based on University of North Florida study on diet and exercise of fisherman) |
| **Musaiger et al. (2014)** | N= 532 students | Kuwait, Universities | 327 F/ 203 M | 19-26 | Not Reported | Quantitative- Cross-sectional | Self-reported questionnaire |
| **Samara et al. (2015)** | N= 94 students | KSA, University | F | 18-22 | 56% physically active[[9]](#footnote-9) | Quantitative- Cross-sectional | Self-administered Questionnaire [ATLS + Barriers self-efficacy scale (BARSE) + Exercise barriers/benefits Scale (EBBS)] |
| **Serour et al. (2007)** | N=334  patients | Kuwait, 6 Health Centres | 209 F/ 125 M | 27-74 | 64.1% inactive3, nothing mentioned about the rest | Quantitative- longitudinal observational | Interviewer administered Questionnaire (short-form IPAQ) |

## 4.3.3 Quality Assessment of The Papers

The Khalaf et al. (2013) and Al-Baho et al. (2016) studies had good quality/low risk of bias based on the NIH quality assessment tool. Nine of the quantitative studies included had fair quality/moderate risk of bias while seven quantitative studies had poor quality/high risk of bias (Table 4-2). Lack of sample size justification was a common source of bias in poor quality studies which may affect representativeness of results. An appropriate sample size is crucial to have accurate conclusions and to make sure that results represent the population under study (too big a sample can waste time and resources while too small a sample can result in findings that are not meaningful; Nayak, 2010). Reporting sample size calculations and information such as power are important to determine whether the sample size was adequate to demonstrate an effect where one exists (Nayak, 2010). Nine quantitative studies from the current review did not provide sample size justification. All studies had self-reported measures which may increase chance of recall bias and social desirability bias, so reporting of PA level may be under-estimated or over-estimated. These limitations have been taken into account when interpreting findings of the included quantitative studies in this review. For example, when interpreting previous experiences and fears which were reported as barriers to PA, it was taken into consideration that this finding come mainly from eight fair quality and five poor quality cross-sectional studies.

Quality appraisals of the included qualitative studies based on the CASP qualitative checklist are presented in (Table 4-3). Ali et al. (2010) and Mabry et al. (2013) had good quality/low risk of bias while Berger and Peerson (2009) had fair quality/moderate risk of bias. Lack of justification for using the chosen research design, approaching and selecting appropriate participants were some sources of bias (Mabry et al., 2013; Berger and Peerson, 2009). Some of the ethical issues such as participants’ confidentiality were not discussed in two papers (Berger and Peerson, 2009; Mabry et al., 2013). Details regarding the researcher’s role, bias and influence before and during data collection and analysis were not given. Reflexivity was lacking, meaning that the possible effect of the researcher’s background, previous experiences and beliefs on researcher interaction with the research (or vice versa) were not discussed (Berger and Peerson, 2009; Ali et al., 2010). Additionally, in-depth description of the analysis process was lacking in two papers (Berger and Peerson, 2009; Ali et al., 2010). Data saturation and credibility of the findings were not discussed in one paper (Berger and Peerson, 2009). These limitations have been taken into account when interpreting findings of the included qualitative studies in this review. For example, when considering dress code to have a restricting impact on women’s PA in GCC it was taken into account that this finding came from one good quality (Mabry et al., 2013) and one fair quality (Berger and Peerson, 2009) qualitative studies.

Table 4-2 Quality assessment of quantitative studies

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Questions from NIH quality tool | | | | | | | | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | Overall study quality |
| AboZaid and Farahat (2010) | Y | Y | Y | Y | Y | NA | NA | N | N | N | Y | NR | NA | N | Fair |
| Al-Baho et al. (2016) | Y | Y | Y | Y | Y | NA | NA | Y | Y | N | Y | NR | NA | Y | Good |
| Al-Gilany and Al-Masry (2011) | Y | Y | Y | Y | Y | NA | NA | Y | N | N | Y | NR | NA | Y | Fair |
| Alkaabi et al. (2009) | Y | Y | NR | N | N | NA | NA | N | N | N | Y | NR | NA | Y | Poor |
| Allafi and Waslien (2014) | Y | N | NA | N | N | NA | NA | Y | N | N | Y | NR | NA | N | Poor |
| Al-Otaibi (2013) | Y | Y | Y | Y | N | NA | NA | N | Y | N | N | NR | NA | N | Poor |
| AL-Refaee and Al-Hazzaa (2001) | Y | Y | Y | Y | Y | NA | NA | N | N | N | N | NR | NA | N | Fair |
| Al-Reshidi (2016) | Y | Y | Y | Y | Y | NA | NA | N | Y | N | Y | NR | NA | N | Fair |
| Amin et al. (2011) | Y | Y | Y | Y | Y | NA | NA | N | Y | N | Y | NR | NA | Y | Fair |
| Arab (2006) | Y | Y | Y | Y | N | NA | NA | N | Y | N | N | NR | NA | Y | Fair |
| Awadalla et al. (2014) | Y | Y | Y | Y | Y | NA | NA | N | Y | N | Y | NR | NA | Y | Fair |
| Gawwad (2008) | Y | Y | Y | Y | Y | NA | NA | N | Y | N | Y | NR | NA | N | Fair |
| Khalaf et al. (2013) | Y | Y | Y | Y | Y | NA | NA | Y | Y | N | Y | NR | NA | Y | Good |
| Li et al. (2015) | Y | Y | NR | Y | N | NA | NA | N | Y | N | Y | NR | NR | Y | Fair |
| Majeed (2015) | Y | Y | NR | Y | N | NA | NA | Y | N | N | Y | NR | NA | N | Poor |
| Musaiger et al. (2014) | Y | Y | NR | Y | N | NA | NA | NA | Y | N | N | NR | NA | N | Poor |
| Samara et al. (2015) | Y | Y | NR | Y | N | NA | NA | NA | Y | N | Y | NA | NA | N | Poor |
| Serour et al. (2007) | Y | Y | NR | NR | N | NA | NA | NA | N | N | Y | NR | NA | NR | Poor |
| 1. Was objective clearly stated? 2. Was the study population clearly specified and defined? 3. Was the participation rate of eligible persons at least 50%? 4. Were all subjects selected from similar populations? Were inc/exc criteria pre-specified and applied uniformly to all participants? 5. Was the sample size justification provided? 6. Were the exposure(s) of interest measured prior to the outcome(s) being measured? 7. Was the timeframe sufficient so that one could reasonably expect to see an association between exposure and outcome if it existed? 8. For exposures that can vary in amount or level, did the study examine different levels of the exposure as related to the outcome (e.g., categories of exposure, or exposure measured as continuous variable)? 9. Were the exposure measures (independent variables) clearly defined, valid, reliable, and implemented consistently across all study participants? 10. Was the exposure(s) assessed more than once over time? 11. Were the outcome measures (dependent variables) clearly defined, valid, reliable, and implemented consistently across all study participants? 12. Were the outcome assessors blinded to the exposure status of participants? 13. Was loss to follow-up after baseline 20% or less? 14. Were key potential confounding variables measured and adjusted statistically for their impact on the relationship between exposure(s) and outcome(s)?   Y, Yes; N, No; CD, cannot determine; NA, not applicable; NR, not reported | | | | | | | | | | | | | | | |

Table 4-3 Quality assessment of qualitative studies

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Study | Questions from CASP | | | | | | | | | | |
| A | B | C | D | E | F | G | H | I | J | Overall study quality |
| Ali et al. (2010) | Yes | Yes | Yes | Yes | Yes | NO | Yes | PA | Yes | Very | Good |
| Berger and Peerson (2009) | Yes | Yes | Yes | PA | PA | NO | PA | NO | No | Very | Fair |
| Mabry et al. (2013) | Yes | Yes | No | NO | Yes | Yes | PA | Yes | Yes | Very | Good |
| 1. Was there a clear statement of the aims? 2. Is a qualitative methodology appropriate? 3. Was the research design appropriate? 4. Was the recruitment strategy appropriate? 5. Was the data collected in a way that addressed the research issue? 6. Has the relationship between researcher and participants been adequately considered? 7. Have ethical issues been taken into consideration? 8. Was the data analysis sufficiently rigorous? 9. Is there a clear statement of findings? 10. How valuable is the research?   PA, partially addressed | | | | | | | | | | | |

# 4.4 Data Synthesis

Barriers and motivators were synthesised into the following levels: intrapersonal/individual level, interpersonal level and community level (Appendix 5).

## 4.4.1 Intrapersonal Level

All studies reported on individual barriers/motivators. Time, role demands, knowledge and awareness, motivation, preferences, health conditions, fears and previous experiences were perceived to have an influence on PA at an individual level among adults in GCC countries.

4.4.1.1 Time, Role Demands and Priorities

The most common barrier reported was lack of time. Family (Awadallah et al., 2014; Al-Baho et al., 2016), work and study (Al-gilany and Al-masry, 2011; Al-Baho et al., 2016) responsibilities and demands were related to the perception of lack of time (Al-Otaibi, 2013; Al-Baho et al., 2016). Three fair quality cross-sectional quantitative studies which used self-reported measures showed that not prioritising PA was also a barrier to being physically active (Awadalla et al., 2014; Al-gilany and Al-masry; 2011; Al-Reshidi, 2016). The perception of lack of time for physical activity reported usually by people could be because PA is not a priority for them.

4.4.1.2 Knowledge and Awareness

Lack of awareness about the benefits, value and importance of PA (Awadalla et al., 2014; Mabry et al., 2013; Khalaf et al., 2013; AlRefaee and AlHazzaa, 2001) in addition to misconceptions regarding relationship of PA with ageing and different medical problems (Arab, 2006; Alkaabi et al., 2009) and lack of knowledge and sports skills (Allafi and Waslien, 2014; Al-gilany and Al-masry, 2011; Musaiger et al., 2014; Awadalla et al., 2014) were all barriers to PA among Arabian Gulf people in several mixed quality studies. One fair quality cross-sectional quantitative study which lack sample size justification found that people who try to develop athletic skills were motivated to adopt and maintain PA (Li et al., 2015)

4.4.1.3 Motivation

Lack of motivation (Arab, 2006; Al-Otaibi, 2013; Awadalla et al., 2014; Musaiger et al., 2014; Al-gilany and Al-masry, 2011; Berger and Peerson, 2009; Ali et al., 2010; Mabry et al., 2013) and disliking PA (Berger and Peerson, 2009; Allafi and Waslien, 2014; Amin et al., 2011; Samara et al., 2015) were common barriers to PA as well. Lack of interest and enjoyment in physical activity (Musaiger et al., 2014; Arab, 2006; Amin et al., 2011; Awadalla et al., 2014; Samara et al; 2015; Al-gilany and Al-masry, 2011) and feeling bored by the PA programme/activity led to negative PA perceptions among adults [the type of programme was not mentioned] (Arab; 2006; Samara et al., 2015; Allafi and Waslien; 2014, Alkaabi et al., 2009, Al-Baho et al., 2016); laziness was also a barrier to PA among Kuwaitis according to one good cross-sectional quantitative survey (Al-baho et al., 2016). On the other hand, having fun and spending free time in enjoyable activities could motivate people to be more physically active as reported in mixed quality quantitative studies (Li et al., 2015; Majeed, 2015; Khalaf et al., 2013; AboZaid and Farahat, 2010; Al-gilany and Al-masry, 2011; AlRefaee and AlHazzaa, 2001; Samara et al., 2015)

4.4.1.4 Preferences

A good quality cross-sectional quantitative study conducted in Kuwait that included 858 participants (aged 21–65 years old) reported ruining of appearance as a barrier to PA among both males and females (Al-Baho et al., 2016). Similarly, young Emirati university students who participated in a fair quality qualitative study exploring the relationship between PA and Arabic culture stated that they do not like to sweat during exercise as it ruins make-up and grooming efforts (Berger and Peerson, 2009). They preferred watching rather than playing a sport (Berger and Peerson, 2009); similarly, Saudi university students preferred not to go to sports venues in two fair quality cross-sectional quantitative survey using self- reported measures (Al-gilany and Al-masry, 2011; Awadalla et al., 2014). No detail was given in either paper as to why this was the case.

4.4.1.5 Health Conditions

Medical conditions such as diabetes, osteoarthritis and cardiovascular diseases were reported many times in included mixed quality quantitative and qualitative papers as barriers to a physically active lifestyle (Alkaabi et al., 2009; Gawwad, 2008; Arab, 2006; AlRefaee and AlHazzaa, 2001; AboZaid and Farahat, 2010; Khalaf et al., 2013; Amin et al., 2011; Ali et al., 2010; Serour et al., 2007; Al-Baho et al., 2016). Obesity as well had a negative effect on PA level among young women (Berger and Peerson, 2009) and men (Musaiger et al., 2014). Musaiger et al. (2014) examined barriers to weight maintenance among Kuwaiti university students, and found that obese men reported more personal barriers to PA adoption compared to non-obese men. The most reported barriers by obese men were lack of enjoyment, motivation and skills to do PA. Tiredness (Alkaabi et al., 2009; Al-gilany and Al-masry; 201; Berger and Peerson, 2009; Awadalla et al., 2014; Al-Baho et al., 2016), stress (Samara et al., 2015) and pain (Arab, 2006; Samara et al., 2015) were found to be negatively correlated with PA level.

On the other hand, beliefs about the benefits of PA for health and well-being increased motivation to participate in PA and facilitate PA. Managing and preventing diseases with PA (Al-gilany and Al-masry, 2011; Ali et al., 2010), along with promoting and maintaining health (Li et al., 2015; Majeed, 2015; AboZaid and Farahat, 2010; AlRefaee and AlHazzaa, 2001; Samara et al., 2015; Khalaf et al., 2013; Al-gilany and Al-masry, 2011) were reported to motivate adults to adopt PA in mixed quality quantitative and qualitative studies. Other health benefits that motivated people to be physically active included weight control (AboZaid and Farahat, 2010; Samara et al., 2015; Majeed, 2015; AlRefaee and AlHazzaa; 2001; Khalaf et al., 2013; Al-gilany and Al-masry (2011), improved muscle power, body image and shape (Li et al., 2015; Al-gilany and Al-masry, 2011), improved psychological well-being and improved memory (Li et al., 2015; Al-gilany and Al-masry, 2011; Gawwad, 2008; Majeed, 2015).

4.4.1.6 Previous Experiences and Fears

Self-reported cross-sectional quantitative studies with quality ranging between poor and fair reported that personal experiences and fears were barriers to PA among adults in GCC countries. Previous bad personal experiences such as failure in sports competitions were found to affect PA level among university students negatively (Al-gilany and Al-masry, 2011; Awadalla et al., 2014). These experiences could develop fear of failure in sports competition (Amin et al., 2011; Al-gilany and Al-masry, 2011). Fears of injuries or worsening of physical illness (Amin et al., 2011; Awadalla et al., 2014; Amin et al., 2011; Alkaabi et al., 2009; Al-gilany and Al-masry, 2011) were also documented as barriers to PA. Lack of self-confidence about appearance (Samara et al., 2015; Gawwad, 2008) and physical abilities (Awadalla et al., 2014; Al-Otaibi, 2013) could be related to fear of criticism (AboZaid and Farahat, 2010) and fear of embarrassment related to wearing sportswear (Alkaabi et al., 2009) or practising exercises outdoors (Allafi and Waslien, 2014; Arab, 2006; Musaiger et al., 2014; AlRefaee and AlHazzaa, 2001).

## 4.4.2 Interpersonal Level

All studies except three (AlReshidi et al., 2016; Allafi and Waslien, 2014; Majeed, 2015) reported on interpersonal barriers/motivators to PA. The most commonly reported barriers were the influence of culture and social support on PA levels among people in GCC countries.

4.4.2.1 Cultural Influences

Sociocultural norms, traditions and customs were reported to have an impact on adults’ PA adoption in the majority of the papers (Musaiger et al., 2014; Berger and Peerson, 2009; Ali et al., 2010; Mabry et al., 2013; Serour et al., 2007; Gawwad, 2008; Alkaabi et al., 2009; Amin et al., 2011; Al-Baho et al., 2016). In a poor quality cross-sectional quantitative survey that did not provide sample size justification, the traditional dress code was a cultural barrier to PA among both males and females in UAE as there was a perception/belief that traditional garments restricted performing PA, especially outdoors (AlKaabi et al., 2009) while in a good quality quantitative study, Mabry et al. (2013) found that the dress code had more of a restricting impact on women than men in Oman. Moreover, young Emirati female students (physically inactive) reported that they prefer not to wear swimwear or sports clothes in a fair quality qualitative study that did not give detail of recruitment strategy and did not discuss data saturation (Berger and Peerson, 2009), which could have a negative influence on PA engagement.

In addition to the dress code, women were subjected to more social restrictions compared to menregarding outdoor PA (Amin et al., 2011; Serour et al., 2007; Ali et al., 2010, Mabry et al., 2013). A fair quality cross-sectional study investigated motives for exercise among undergraduate university students in Oman, Pakistan and USA, and found that Omani women tended to do less PA and for a shorter time compared to Omani men (Li et al., 2015). This gender difference was due to the conservative norms in Oman (Li et al., 2015) which restrict outdoor PA as some PA activities were perceived to be exclusively for men (Berger and Peerson, 2009). In contrast, another fair quality cross-sectional quantitative survey showed that social traditions were not perceived to be barriers to PA among Kuwaiti women (18–55 years old; mean age was 29 years); this was attributed to the modernization of Kuwaiti society, which included more flexibility in gender roles, involvement of women in every field with Kuwaiti men and the achievement of women’s political rights (Arab, 2006).

Like women, older people (males and females) could face social barriers to PA as reported in a fair quality quantitative survey (Amin et al., 2011) and a good quality qualitative study (Mabry et al., 2013) as they perceived some types of PA (no details about types) and sports clothes to be unsuitable for their age. These cultural conceptions of older adults may increase fear of embarrassment when doing PA and thus avoidance of PA (Abozaid and Farahat, 2010), and may be related to the reduction in leisure PA when people get older (Amin et al., 2011). Moreover, in a fair quality quantitative survey, AboZaid and Farahat (2010) believed that people 50 years and above were less active than younger people due to their health state and retirement; this meant that ageing with health conditions was a barrier to PA among older adults along with the reduction in work-related PA due to retirement.

Employment of housemaids (Ali et al., 2010; Mabry et al., 2013; Serour et al., 2007), depending on cars for transportation (Mabry et al., 2013; Serour et al., 2007) and excessive use of internet and TV (Amin et al., 2011; Al-Baho et al., 2016) were cultural norms that had a negative effect on daily PA level among adults in GCC countries as reported in mixed quality quantitative and qualitative studies.

In a fair quality cross-sectional study, some participants believed that an active social life and frequent social gatherings encouraged bad dietary habits and physical inactivity in GCC countries (Arab, 2006). In a good quality qualitative study, social obligations were seen to be priorities over other activities, including PA (Ali et al., 2010).

4.4.2.2 Social Support

Social support was reported to have an influence on PA levels among Arabian Gulf residents (KSA, UAE and Kuwait) (Berger and Peerson, 2009; Awadallah et al., 2014; Al-gilany and Al-masry, 2011; AlKaabi et al., 2009; Musaiger et al., 2014). Conservative norms again had an impact on women as it affected their families’ support negatively. For example, in a fair quality qualitative study, young inactive Emirati women stated that they were discouraged to participate in sports when they reached adolescence (Berger and Peerson, 2009). In fair quality cross-sectional quantitative surveys, objection of the family, especially parents (Awadallah et al., 2014; Al-gilany and Al-masry, 2011) and husbands, was another restriction women faced when thinking of adopting PA. Some families did not allow women to do outdoor PA alone (Amin et al., 2011) or attend PA facilities (AlKaabi et al., 2009), especially mixed-gender venues (Musaiger et al., 2014).

Lack of social support and encouragement from others such as family (parents and husbands) (Al-gilany and Al-masry, 2011; Awadallah et al., 2014; Ali et al., 2010; Musaiger et al., 2014; Al-Otaibi, 2013; Arab, 2006; Alkaabi et al., 2009; Gawwad, 2009; Al-Baho et al., 2016) and friends (Al-gilany and Al-masry, 2011; Berger and Peerson, 2009; Musaiger et al., 2014; Gawwad, 2008; Awadallah et al., 2014; Al-Baho et al., 2016) was a frequent barrier to PA. No detail was given regarding what forms the lack of support took in the papers reporting these studies. In contrast, social support, such as having other women to walk with, was reported as a motivator to PA among young Emirati females participating in a good quality qualitative study (Ali et al. 2010).

Additionally, lack of encouragement from gym instructors (Samara et al., 2015) and sports teachers at schools (Musaiger et al., 2014; Berger and Peerson, 2009) was a barrier to PA among university students (Berger and Peerson, 2009). This took the form of students disappearing from exercise classes without penalty. In a good quality qualitative study, lack of health professionals’ encouragement hindered adopting and maintaining a physically active lifestyle among Omanis (Mabry et al., 2013). While good health communication and proper medical advice motivated Saudi adults to incorporate PA into their daily routines (AboZaid and Farahat; 2010; AlRefaee and AlHazzaa, 2001), Li et al. (2015) found that social factors were more important to Omani university students than to American students due to the communal nature of Omani culture. Lack of a PA partner was a common barrier to PA in many studies (Samara et al., 2015; Serour et al., 2007; Khalaf et al., 2013; Amin et al., 2011) On the other hand, socialization, meeting others and involving family and friends in PA could motivate people in GCC countries (UAE and KSA) to be more active and adhere to regular PA (Berger and Peerson, 2009; Ali et al., 2010; Al-gilany and Al-masry, 2011; Samara et al., 2015; AlRefaee and AlHazzaa, 2001; Khalaf et al., 2013, AlKaabi et al., 2009). Lack of physically active role models was perceived as a barrier to PA among young Emirati women (Berger and Peerson, 2009); no further detail was given.

## 4.4.3 Environmental Level

All studies except two (Allafi and Waslien, 2014; Li et al., 2015) reported on environmental barriers/motivators to physical activity. Unsuitable weather and lack of suitable PA facilities were the most frequent barriers to PA reported in the majority of studies. The absence of PA promotional policies was also reported as a barrier.

4.4.3.1 Weather

Hot, dusty and humid weather during summer in GCC countries were found to have a negative effect on outdoor PA as most people avoid engaging in any physical activity outdoors (Berger and Peerson, 2009; Ali et al., 2010; Mabry et al., 2013; Serour et al., 2007; Al-gilany and Al-masry, 2011; Samara et al., 2015; Musaiger et al., 2014; Al-Reshidi, 2016; Amin et al., 2011; Gawwad, 2008; Alkaabi et al., 2009; Awadalla et al., 2014 and Arab, 2006; Al-Baho et al., 2016). It is worth noting that weather was not a major barrier to PA (reported as a barrier in 7.9% of the participants only, with no further details provided regarding age of those participants) among Emirati patients with type 2 diabetes participating in a poor quality cross-sectional quantitative survey, with lack of sample size justification (Alkaabi et al., 2009), although data were collected during hot summer months, when the weather is more likely to be a barrier. Another poor quality cross-sectional quantitative survey, which did not take into account confounding factors, found that external barriers such as hot weather had a negative effect on women but not men in KSA (AlOtaibi, 2013). On the other hand, hot summer weather sometimes may be a motivator to exercise as sweating has been perceived as a way to lose weight among young Emirati women in one fair quality qualitative study (Berger and Peerson, 2009). Additionally, cooler weather was an enabler of outdoor PA, such as walking, in one good quality qualitative study which explored barriers and facilitators of weight management among 75 Emirati women at risk of type 2 diabetes (Ali et al., 2010).

4.4.3.2 Access to PA Facilities

Lack of suitable and accessible PA facilities was a common barrier to PA reported in a majority of studies. A lack of PA facilities was more commonly reported as a barrier than other social barriers among female Saudi students (Samara et al., 2015). Local government and private sports clubs (Mabry et al., 2013; Ali et al., 2010; Al-gilany and Al-masry, 2011; Khalaf et al., 2013; Musaiger et al., 2014; AboZaid and Farahat, 2010; Al-Reshidi, 2016; Amin et al., 2011; Arab, 2006; Gawwad, 2008; Awadalla et al., 2014; AlRefaee and AlHazzaa, 2001; Al-Baho et al., 2016), nearby parks (Alkaabi et al., 2009), exercise facilities and equipment at home (Al-Reshidi, 2016; Majeed, 2015; Ali et al., 2010) were some examples of PA facilities that were lacking. Unavailability of accessible culturally sensitive PA facilities such as gender-segregated clubs was a barrier to adopting PA (Mabry et al., 2013), especially among women (Berger and Peerson, 2009) who face more cultural restrictions than men (Musaiger et al., 2014) in the GCC conservative societies. Safety concerns in the streets and sports venues had been reported as having a negative effect on PA adoption (Al-Baho et al., 2016; Ali et al., 2010; Al-gilany and Al-masry; 2011; Alkaabi et al., 2009; Awadalla et al., 2014). In a good quality qualitative study, Emirati women (20–60 years old) suggested that, in addition to having a women-only facility, culturally suitable PA facilities should not restrict traditional dress; security cameras should not be used and smart gadgets with cameras should not be allowed in the facility (Ali et al., 2010).

Lack of availability of PA programmes that suit people’s differing physical abilities was also reported as a barrier to PA among Saudi university students in two fair quality cross-sectional quantitative studies (Al-gilany and Al-masry, 2011; Awadalla et al., 2014). On the other hand, the availability of easily accessible PA facilities such as sport clubs and farms could encourage females to be more physically active in UAE as reported in two qualitative studies with fair and good quality (Berger and Peerson, 2009;Ali et al., 2010). Lack of transportation to and from the PA venue was reported as barrier to PA among Kuwaitis (Arab, 2006), Saudis (Samara et al., 2015), Emiratis (Berger and Peerson, 2009) and Omanis (Mabry et al., 2013). The high cost of PA facility subscriptions was also reported as a barrier to engaging in regular PA (Al-Baho et al., 2016; Berger and Peerson; 2009; Al-gilany and Al-masry, 2011; Musaiger et al., 2014; Arab, 2006; Gawwad, 2008; Alkaabi et al., 2009; Awadalla et al., 2014), while affordable PA subscriptions could motivate people to be more physically active (Berger and Peerson, 2009).

4.4.3.3 Promotional Policies

Scarcity of policies that promote PA (Al-Otaibi, 2013) in educational, governmental (Berger and Peerson, 2009) and health sectors (Mabry et al., 2013) was also a barrier to PA in the Arabian Gulf area (KSA, UAE and Oman). In a good quality qualitative study, Mabry et al. (2013) interviewed public health managers who stressed that available policies focused on curative, not preventive, approaches (Mabry et al., 2013).

Appropriate promotional policies could provide information on the beneﬁts of exercise (Berger and Peerson, 2009), how to improve PA level (Musaiger et al., 2014), and where and how to exercise (Arab, 2006). The evidence examined in the current systematic review suggests that the availability of such knowledge could help facilitate PA adoption and maintenance. A lack of PA promotion media campaigns was also reported among Kuwaitis (Arab, 2006).

# 4.5 Chapter Summary

This systematic review showed that the PA levels of adults in GCC countries are affected by many barriers and motivators. These factors were synthesised according to the ecological model into three levels: intrapersonal, interpersonal and environmental. The use of different search strategies and various databases was a strength of this systematic review as it helped to minimise the possibility of missing related papers. Another strength of the systematic review was that although it was conducted by one reviewer, 20% of the included articles were then cross-checked by the second supervisor for compliance, who made suggestions but left the final decision to myself. When interpreting the results, it should be noted that the included papers were related to ‘adults’ more generally, and no research targeted older people specifically. The quantitative studies (18 papers) were categorical and did not provide rich details regarding the barriers/facilitators of PA. The use of closed-ended questions could also affect the results, as answers are already structured by the researcher, which reduces flexibility because respondents are forced to make choices that may not reflect their real-life views (Baker et al., 2005). Closed-ended questions could limit the answer choices, which in turn negatively affects the richness and accuracy of the data (Griffith et al., 1999), while with open-ended questions, the respondent has more flexibility, so more information can be gathered (Griffith et al., 1999). Seven included studies had low methodological quality, which mean highs risk of bias, and this should be considered when interpreting the findings. Qualitative studies targeted young adults (Berger and Peerson, 2009), public health managers (Mabry et al., 2013) and diabetic females (Ali et al., 2010). There were no studies conducted in the GCC region exploring older adults’ barriers/motivators to PA in depth, despite the importance of such research (see Section 5.1). For this reason, a qualitative study exploring older adults’ perceptions of PA in GCC countries is necessary to fill the gap in the evidence and to build a baseline for future PA guidelines for older adults in this region. The next chapter will discuss the rationale, aims and objectives of such a qualitative study.

# CHAPTER 5 - RATIONALE, AIM AND OBJECTIVES OF THE QUALITATIVE STUDY

This chapter discusses the research rationale, research questions, aims and objectives.

# 5.1. Rationale for the Current Research

The WHO’s Country Cooperation Strategic Agenda emphasises the importance of incorporating the prevention and control of NCDs into the national development plans (WHO, 2014b). The WHO also encourages undertaking behavioural studies and research on lifestyles to build evidence for promotional campaigns that focus on NCD risk factors (WHO, 2014b). In-depth studies to understand the population’s perceptions and attitudes towards health behaviours, including PA, and how to effectively deal with them (MOH, 2008) will help to develop new, evidence-based intervention programmes to suit the Kuwaiti community (WHO, 2014b).

The third Arab Conference on Obesity and PA was held in Bahrain in January 2010. It proposed the Strategy to Combat Obesity and Promote PA in Arab Countries. The conference emphasised the importance of conducting research about PA and obesity in order to develop a strategy based on scientific research (Musaiger et al., 2011). Kuwait established a national physical activity committee (KNPAT). However, soon after, the committee was disbanded and no clear reasons for this decision were announced, so Kuwait still does not have an action plan or strategy for PA promotion (Bull and Milton, 2014; WHO, 2014c; WHO, 2014d).

Chapter 2 of the thesis has highlighted that the high prevalence of NCDs in Kuwait and the anticipated increase in the percentage of older adults with such diseases are likely to result in a greater burden on the healthcare sector, as older people will need more health resources compared to other population segments (MOH, 2008; MOH, 2013). Moreover, research targeting the health of older adults is limited in the Arab world (Kronfol et al., 2013). The evidence reviewed in Chapters 3 and 4 of the thesis has shown that most research into PA behaviour has been conducted in Western countries, and that the few studies conducted in Arab Muslim countries either did not target older adults or were quantitative in nature and focused mainly on chronic disease management (diabetes, cardiovascular disease and obesity). This highlights a need for an in-depth understanding of culturally sensitive, gender- and age-relevant interventions and policies to promote PA which consider cultural, social and religious factors that are important in Gulf Cooperation Council countries (Mabry et al., 2013; Ali et al., 2010; Donnelly et al., 2011).

# 5.2. Study Aim

This thesis aims to explore the perceptions and attitudes of older Kuwaiti adults and their significant others relating to engaging in PA, and offer suggestions for culturally sensitive strategies to increase their PA levels. Hence, this is the first step in designing an acceptable PA promotion programme that suits the needs and beliefs of older people in Kuwait. The results of the research will inform the development by public health policymakers of a culturally sensitive PA promotion programme for older people in Kuwait.

# 5.3. Research Questions

- What are the perceptions of older Kuwaiti adults and the significant people in their lives such as family members, community leaders and health professionals concerning PA promotion among older adults in Kuwait?

- What are the barriers and motivators that affect the adoption and maintenance of an active lifestyle among older people in Kuwait?

- What are the suggestions of older Kuwaiti adults and the significant people in their lives about strategies that can be used to encourage PA among older adults in Kuwait?

# 5.4. Study Objectives

- To use semi-structured interviews to explore the perceptions of older adults towards physical activity.

- To explore the barriers and facilitators to PA through semi-structured interviews with older Kuwaiti adults and their significant others.

- To explore the barriers and facilitators to PA through semi-structured interviews with healthcare professionals and community leaders.

- To use the findings of the research to provide recommendations to inform the development of strategies to promote PA which are relevant to Kuwaiti culture.

The next chapter discusses in detail the rationale for the chosen methodology and methods used to collect and analyse data.

**CHAPTER 6 - METHODS**

This chapter discusses in detail the research approach, sampling, recruitment and data collection methods, the data analysis and ethical considerations.

**6.1. Methodology**

6.1.1. Underlying Paradigm

As the main objective of the research was to explore perceptions and perspectives of older adults and their significant others, a social constructionist paradigm was chosen for the study. According to this paradigm, realities are seen to be influenced by experiences, as individuals construct realities based on their interactions with their social environments (Burr, 2003). Relativism (specifically cultural relativism) is the ontological perspective within the social constructionist paradigm. Relativists search for meaning in the experiences of individuals. Unlike realist ontology, which is characterised by being context-free and static, relativism is contextual, with multiple mental constructions of reality (Gelo et al., 2008; Guba and Lincoln, 2005). Epistemological assumptions that underpinned the current research were subjective and involved interactions between the researcher and participants, so that they could co-construct findings or realities (Gelo et al., 2008; Guba and Lincoln, 2005). This helped to gain an in-depth view of individuals’ behaviours.

6.1.2. Justifications for Using Qualitative Methodology

As the research aim focused on understanding perceptions and behaviours, which are structures that are complicated and difficult to capture, a qualitative approach was preferable because it focused on human senses and interpretations (Rapport, 2004). Qualitative research incorporates context (Gelo et al., 2008) which is useful in understanding behaviour, unlike the quantitative approach, which attempts to control for context and so can neglect important variables, which subsequently influences the results. Qualitative research also helps form a more complete picture of individuals’ backgrounds and attitudes (Pope and Mays, 2006). A qualitative design, using the principles of a grounded theory approach, was used to address the research aim of this study. At the beginning of the research study, several qualitative approaches were considered and rejected in favour of grounded theory; these included ethnography, case study research, phenomenology and narrative analysis. These methodologies are briefly outlined below, followed by a rationale for choosing grounded theory.

Ethnography is a qualitative approach rooted in cultural anthropology (Pope, 2005). It involves immersion of the researcher within a culture with the aim to observe a group and explore how they interact within an environment (Savage, 2000). Ethnography researchers usually use inductive and interactive data collection methods such as observations and interviews to learn about people in their natural settings and draw cultural understanding (Pope, 2005). To achieve rich, in-depth data of the studied topic, long-term direct contact is necessary along with acceptance of the studied group to have the researcher within their culture (LeCompte and Schensul, 2010). I rejected the use of ethnography as an approach in the current study as I believed it focused primarily on one element, which is culture, instead of the complete circumstances.

Case study is another qualitative approach conducted in natural settings to thoroughly explore an event (Yin, 2009). It is a useful approach to gain understanding into relations and connections and in-depth explanation of complex issues; for these reasons, it has been used in a variety of disciplines including health research. Harrison et al. (2017) suggested that “the focus of a case study is the detailed inquiry of a unit of analysis as a bounded system (the case), over time, within its context”. I interpreted case study as an unsuitable approach in this study as concluding generalisable findings is difficult when relying on a small number of cases; a larger number of cases could be time consuming in terms of recruitment and difficult to analyse and represent in a simple way due to the large volume of data.

Phenomenology is a widely used qualitative approach to outline the meaning of an event by exploring how people experience this specific event (Davidsen, 2013). It aims to answer the question “what is the meaning, structure and essence of the lived experience of this phenomenon for this person or group of people?” (Patton, 2015, p. 115). Bracketing is an important characteristic in phenomenology; it requires the researcher to put aside all of his perceptions and approach the research field without any prejudgment (Creswell, 2007). I believed that phenomenology was not an appropriate approach to be used in my study as the principles of phenomenology, especially bracketing, were not compatible with my epistemological assumptions of my role as a researcher in the co-construction of knowledge.

Narrative analysis is a qualitative approach to understanding people’s stories through their own words. It represents people’s experiences over an extended period of time, as told by them, which helps gain a better understanding of the complexity of human lives (Sandelowski, 1991). Researchers should take the socio-cultural context into account as narratives are considered context-sensitive (Sandelowski, 1991).

Grounded theory is a systematic approach designed to arrive at an explanation or theory behind the events; it explains why a course of action evolved the way it did and develops theoretical models based on this explanation (Corbin and Strauss, 2008). The current research was exploratory as findings from the systematic review demonstrated that there was no existing evidence base of barriers and facilitators to PA among Kuwaiti older adults. Grounded theory is driven by the symbolic interactionist perspective (Charmaz, 2006), which asserts that people’s actions create and construct processes and structures; this makes it a helpful approach in understanding human experiences and behaviours in specific contexts – in this case, the Kuwaiti context. Grounded theory is also an inductive process, where theory and analytical perspectives are induced from the data collected (Strauss and Glaser, 1967; Strauss and Corbin, 1998; Charmaz, 2006).

Since its discovery, several forms of grounded theory have been developed, including Glaserian or classic grounded theory (Glaser, 1978), Straussian or evolved grounded theory (Strauss and Corbin, 1990, 1998) and constructivist grounded theory (Charmaz, 2006). In this section, I discuss briefly the differences between the various forms of grounded theory, followed by a justification for using a constructivist grounded theory in this study.

Classic grounded theory (Glaser, 1978) has a critical realist ontology, which believes that, in order to reduce bias and find objective truth, the researcher should be an observer with no interaction with the field settings and no assumptions or ideas about the phenomena studied. Classic grounded theory also asserts that, in order to minimise biases and preconceived assumptions, a literature review should not be done prior to data collection. In contrast to classic grounded theory, in the current study, I carried out a review before doing my data collection in order to identify gaps in the evidence. Another characteristic of classic grounded theory is temporal ordering, where a causal relationship between categories is established, giving it a more objective nature.

Straussian or evolved grounded theory (Strauss and Corbin, 1990, 1998) has moved towards constructionism, where although the researcher may have an influence on the data, a rigid deductive reasoning and constant verification and validation of the theory are used. Nevertheless, this approach has been criticised for imposing prejudiced beliefs on the data (Glaser, 1992) as it neglected the participant’s role in constructing the knowledge.

Constructivist grounded theory is a flexible approach in which the researcher should be as open as possible, and more than one social process is allowed to be processed in the elicited theory. It is underpinned by relativist ontology and social constructionist and subjectivist epistemology. In constructivist grounded theory, data are constructed through the interaction between the researcher and participants; likewise, since the researcher’s world view and statuses may influence the interpretation of the data, the researcher’s position should be acknowledged in the theory construct (Charmaz, 2006). In other words, the theory is co-constructed by the researcher and the participants (Charmaz and Henwood, 2008). The principles of the constructivist grounded theory approach were adopted in the current research because this approach was the most flexible compared to other grounded theory approaches (such as classic and Straussian grounded theory), and it was more in line with my epistemological position than the other forms of grounded theory. According to the constructivist view, the researcher should pay attention to the language, where implicit meaning structures and forms actions. This helped me understand the data more comprehensively and more abstractly. The aim of the current research was to acquire a more holistic understanding of barriers and facilitators towards PA among older Kuwaiti adults and explore the external and internal factors in line with the ecological model that influenced their interpretations of PA. Charmaz’s (2006) constructivist approach was seen as the most appropriate, as it helped expand current knowledge of the different points of view and perspectives of older Kuwaiti adults and gain an in-depth and detailed understanding of their attitudes, feelings and behaviours.

6.1.3. Data Collection Method in Qualitative Research

Choosing the correct data collection method is important in helping the researcher achieve a more focused perspective on research dilemmas (Charmaz, 2006). There are different types of data collection methods which can be used in qualitative inquiry, such as observation, focus groups and interviews.

Observational methods help the researcher to observe the verbal and non-verbal communications in the participants’ own surroundings (Cassey, 2004). Observation is considered a valuable method in comprehending the connections between the environmental and cultural situations and people’s attitudes (Mulhall, 2003). When utilising observation as a data collection method, the researcher should give attention to not breeching participants’ privacy (Mulhall, 2003). This research focused on the subjective experiences of older Kuwaiti adults with PA in their daily lives outside the healthcare environment. For this reason, observation was not carried out as it was not practical to observe older adults in their own homes.

A focus group is a group discussion on a specific topic with purposely selected individuals to gain an in-depth understanding of their experiences (Breen, 2006). The researcher acts as a group facilitator, not an interviewer (Morgan, 1997). Focus groups could help in facilitating comparisons between group participants’ perspectives (Breen, 2006). Group dynamics and interaction are a very important component in focus groups (Nyumba et al., 2018). Socio-cultural situations are also very important and could affect participants’ disclosure (Harrison et al., 2015). In the current study, I considered focus groups (with unrelated participants) as an unsuitable method for the aim of the study. Firstly, when adopting a focus group method, mixed gender groups would not suit the conservative Kuwaiti context; I would have had to segment participants by sex to create a comfortable atmosphere (Morgan, 1997). Also, as participants were recruited from different settings, focus groups would be difficult to arrange and time consuming. Additionally, as the research aimed to explore the role of the cultural environment on older adults’ PA, my concern was that participants may feel uncomfortable about discussing personal experiences, such as family relationships, in front of strangers; they also might be hesitant to discuss their views regarding lifestyle behaviours in front of people they do not know, especially if they are afraid of being judged (Morgan, 1997). For these reasons, focus group was rejected as a data collection method in this study. Some interviews in this study were carried out in small family groups, and the advantages and disadvantages of this are discussed below.

Within relativist ontology, people’s experiences, knowledge, views and interpretations are regarded as meaningful properties of their realities. In interpretive epistemology, interaction between the researcher and participants is essential to generating data in a meaningful way, and for this reason, data was collected in this study through semi-structured individual interviews (Mason, 2002). Semi-structured interviews are usually guided by broad questions to outline the studied topic, which allows the researcher to direct the conversation; but at the same time, it allows participants to express their thoughts using their own language, which helps produce detailed responses (Mason, 2002). Participants are able to comment and expand on areas perceived important to them, and thus new issues and ideas are raised which may not have been expected or included in the interview schedule. These new ideas could be used to inform further interviews to gain diverse accounts (Mason, 2002). This flexibility in the semi-structured interviews is lacking in the structured interviews, which have predetermined questions. While structured interviews are quick and easy to administer, they restrict participants’ answers, which means they are not conducive to gaining in-depth information (Brayman, 2012). Unstructured interviews are also seen as an unsuitable method in the current research. Unstructured interviews are usually used when nothing is known about the research topic, starting with an opening general question which progresses based on the answer; no interview schedule is used. This lack of guidance may confuse participants and is time consuming (Brayman, 2012).

Interviews are flexible and powerful tools (Britten, 1995) for exploring perceptions, and they can be conducted individually or in groups. Evidence has shown that respondents in individual interviews have less possibility of interruption by others, enabling more detailed answers and reducing the chance that responses might be influenced by a perceived negative effect on the family relationships (Beitin, 2008). On the other hand, inconsistency was found in the literature on the influence of the presence of other family members on participants’ comments during group interviews (Beitin, 2008) – for example, the possibility of editing answers in the presence of family members to avoid disagreement and family disputes and/or one member speaking more than the others. Participants in this research were asked to name significant others in their lives and talk about their influence on participants’ PA behaviour. If the significant other is a family member who has a negative influence on the participant’s PA, they may choose to edit their response to avoid any possible adverse effects on family relationships.

Literature also shows that in family interviews, individual perspectives could be merged to determine how the family views structure and interaction which could help in providing a detailed impression of the multi-structural nature of social context (Allan, 1980). In group interviews, more diversity can allow for multiple perspectives due to the inclusion of many people from different genders. Each individual family member could provide a distinct interpretation of situations that arise between members and contribute additional context (Beitin, 2008). Additionally, family members could complement each other’s responses, discuss shared experiences, debate each other’s views, and communicate a clearer overall picture that provides richer and more complex data. Moreover, compared to individual interviews, family interviews could give better insight about family behaviour (Eisikovits and Koren, 2010).

Face-to-face semi-structured interviews were conducted with older Kuwaiti adults and significant people in their lives, in order to explore their perceptions of PA. This helped generate in-depth understanding of their perceptions and attitudes towards PA (Britten, 1995; Charmaz, 2006). As the study aimed to explore older adults’ needs, opinions and decision-making processes, individual interviews were chosen as a method for data collection (although three interviews were conducted in family groups; refer to Section 11.4 for more detail).

In order for interviews to produce in-depth data, the interview schedule should be clear and neutral (Britten, 1995; Charmaz, 2006). Open-ended questions were used to help unexpected information to emerge, and to prevent preconceived judgments (Britten, 1995; Charmaz, 2006). A key feature of semi-structured interviews is that the interviewer asks a number of open-ended questions, allowing for flexibility in the question order if necessary and an opportunity for the interviewee to introduce new ideas into the discussion (Britten, 1995; Charmaz, 2006). The researcher needs to be sensitive to the language of interviewees, as this helps reveal new and unexpected ideas. Moreover, interviews should be interactive, in order to ensure that participants’ meanings are understood (Britten, 1995; Charmaz, 2006).

6.1.4. Sampling in Qualitative Research

In qualitative research, a large number of participants are not necessary to get rich data and achieve data saturation (saturation is discussed at the end of this section). It is important to employ a sample size that is adequate for answering the research questions and allows for maximum diversity across the population of interest (Marshal, 1996). As a qualitative approach may call for sample sizes to be altered as needed during the research process (Glasser, 1978), data collection could be continued until saturation has been achieved and no further categories emerge (Marshal, 1996).

Qualitative research facilitates the comprehension of complex human behavioural issues (Marshall, 1996), and often involves the collection of cultural data (Bernard, 2006). Random sampling is not a suitable approach for collecting cultural data and is not appropriate in qualitative research (Britten, 1995). Grounded theory usually draws on theoretical sampling (Strauss and Corbin, 1998). In theoretical sampling, a new sample may be chosen based on the categories that emerge during data interpretation, in order to saturate those categories, seek further clarification and increase researcher understanding of emerging theories (Charmaz, 2006; Glasser, 1978; Marshall, 1996; Francis et al., 2010). Other qualitative sampling methods can be used as well in grounded theory, such as purposive and snowball sampling.

Purposive sampling is one of the most common techniques of non-random sampling and is sometimes called ‘judgment sampling’. It depends on the researcher to determine specified characteristics and the most appropriate participants to answer research questions (Gelo et al., 2008; Marshall, 1996). Purposive sampling is also a useful approach for reaching maximum diversity over key characteristics such as gender and age (Bernard, 2006), and so is used in the research process to find potential informants.

In snowball sampling, also called chain referral, potentially useful informants are recommended by other candidates who are already participating in the research (Bernard, 2006; Marshal, 1996; Robinson, 2014) to increase recruitment. This strategy is useful for working with hard-to-reach populations. In this study, an example of a hard-to-reach population were the oldest old (+80 years) and older adults with chronic health problems who use home care instead of outpatient clinics.

As the aim of this study was to arrive at recommendations for helping policymakers promote PA among older Kuwaiti adults in a way that is culturally sensitive, a sample with the maximum possible variation was considered most appropriate. Characteristics considered to be most useful were gender, age range, governorate and perceived activity level. For this reason, two sampling approaches were used to select participants for this study: firstly, purposive sampling, and secondly, snowball sampling.

In qualitative research, data collection using theoretical sampling continues until saturation is achieved (Glaser and Straus, 1967). Theoretical saturation can be defined as the phase in constant comparative analysis at which no new data are being found (Glaser and Strauss, 1967; Bryant and Charmaz, 2007) and rich and conceptual depth in data has been achieved, allowing for an end to data collection (Charmaz, 2014). Complexity of the research question, experience of the researcher in conducting qualitative research, triangulation of data collection methods, understanding of the philosophical underpinning of the research, the use of theoretical framework and the use of a sensitizing concept are all factors that could facilitate data saturation (Aldiabat and Le Navenec, 2018). To avoid the common confusion about how to achieve data saturation that novice researchers usually face during the research, the term theoretical sufficiency was used instead of data saturation in this research (Nelson, 2016). Theoretical sufficiency means that depth of conceptual linkage was reached (Kools et al., 1996), so data collection could be stopped when sufficient depth of understanding to build a theory was achieved (Nelson, 2016). To achieve the conceptual density or depth, various types of evidence and examples drawn from data should be used to support and highlight the emerging concept (Nelson, 2016). Other criteria to achieve conceptual depth would be establishing complex relations between a valuable network of concepts and themes and developing the meaning of conceptual categories by examining the rich and multi-dimensional conceptual language (Nelson, 2016). Finally, it is necessary to check if the emerging themes resonate with existing literature in the field and examine external validity by testing if the conceptual themes are applicable to those in the studied cultural context and to others with similar context (Nelson, 2016).

**6.2. Role of the Researcher (Reflection/Positionality)**

As a researcher, I was very aware of the importance of reflection in qualitative research. Likewise, as I had adopted a constructivist grounded theory, acknowledging my values, beliefs and experiences in order to understand how these affected the research was an essential part of the theory construct.

My background as a physiotherapist had an impact on the research process and my interpretation of the data. As a physiotherapist and a health professional who is researching a health topic such as PA, there may be a tendency of some participants to format their opinions to please me and alter their views towards what they think is ideal in health standards. For example, they may say they are physically active when they are not, or that they enjoy PA when they dislike it. They may also have thought that admitting they were physically inactive would leave a negative impression on me as a researcher. To reduce the effect of this bias, I tried my best to ask probing questions to improve understanding of participants’ answers. Another strategy I used to decrease this bias was establishing participant-researcher connections or rapport as this improves relationships and encourages participants to answer questions more freely and openly, leading to richer data (Patton, 2002). To build rapport, I started the interview with general conversation and asked opening questions, for example, about participants’ social background to achieve a more comfortable atmosphere and to build trust in order to encourage them to give their honest point of view without fear of being judged. I also gave details about my professional background, such as my experience as a physiotherapist and full-time PhD researcher to help build the relationship. Additionally, as a physiotherapist who has worked in the healthcare sector, I was better able to gain access to the target facilities. My experience and familiarity with the healthcare system in Kuwait also aided in the research process.

Additionally, my background as a Kuwaiti citizen and therefore someone who shared the same cultural background as my participants was also considered to have an impact on the research. Working with a researcher who is native to Kuwait could lead participants to assume they have a shared understanding, which could make them more willing to elaborate on some part of their experience that they would not share with a non-Kuwaiti researcher. Additionally, being Kuwaiti helped me reflect on and explore particular aspects of the participants’ experiences which I thought were integral parts of Kuwaiti culture, such as the influence of religion and some societal norms.

The research process and communication with participants was also likely to be affected by my position as an educated female researcher who was trying to explore perceptions of both male and female older adults in a conservative culture where gender segregation was the norm. I was prepared for the possible difficulties I could face when collecting data from male participants, such as men being less likely to participate and talk freely when being interviewed by a woman. Asking appropriate probing questions, building rapport with participants by asking ice-breaking questions and referring to participants by their preferred name encouraged male participants to answer questions more openly.

At the beginning of the research process, I did have my own views about the importance of promoting PA to older adults, but I remained neutral in the interviews and refrained from presenting an opinion to achieve truly honest responses. I believed that older adults’ perceptions were integral when developing recommendations to suit their needs. Writing reflexive journals during the whole research process helped me remain transparent about my perceptions.

My training and professional skills as a researcher could have affected the quality of the study. Although I was a novice researcher with minimal experience in qualitative research, all efforts were made to undertake all relevant training courses in data collection, analysis and effective interviewing techniques; stating this clearly helped me maintain rigour and transparency.

**6.3. Methods**

## 6.3.1. Ethical Approval

Ethical approval was applied for and granted from the School of Health and Related Research (ScHARR) Ethics Committee before the start of the study (Appendix 6). As the study included data collection from Kuwait’s Ministry of Health users, ethical approval from The Standing Committee for the Coordination of Health and Medical Research was applied for and granted before data collection (Appendix 7). Before inviting potential participants from mosques and social events, necessary permissions were sought from individuals who were in charge, such as Imams and event hosts.

6.3.2. Study Design

This was a qualitative study using semi-structured interviews with older adults and the significant people in their lives such as family members, friends, community leaders and healthcare professionals in Kuwait.

6.3.3. Setting

All data collection took place within the six governorates in Kuwait (the Capital, Hawalli, Al Farwaniya, Al Ahmedi, Mubarak Al Kabir and Al Jahra).

Healthcare settings:

Five general hospitals (one in each health region), four primary healthcare and/or diabetes clinics from each of the six governorates were approached to take part in the study.

Community settings:

Kuwait has 1,487 mosques distributed among the six governorates. To identify individuals who were not necessarily accessing healthcare services, and because Muslims are required to pray five times a day, mosques were considered the best possible places to recruit male participants. Social events were another possible community setting to recruit participants.

Three mosques, three social events, five general hospitals (outpatient clinics), four primary healthcare clinics and/or diabetes clinics from the six governorates in Kuwait were approached to take part in the research until a sample had been achieved that reflected provision across the geographical regions.

6.3.4. Sampling

Older adult participants (both genders)

In order to gain a sample that represented regional diversity and to capture varied views of individuals from different backgrounds (Bedouin and non-Bedouin); genders (male and female); age groups (transitioning into older adults [>50 years old], older adults [>60 years old] and the older old [> 80 years old]); and different socioeconomic statuses, purposive sampling was used to recruit five older adults as follows:

Male participants

Three mosques were invited to participate in the research in order to gain the perspectives of healthy older men (and Imams) and others who do not regularly visit hospitals or clinics; men were most likely to be recruited from mosques as women usually pray at home.

Female participants

Traditional Kuwaiti social events such as weddings and special celebrations were also excellent settings for reaching older adults, especially women and the oldest members of the population (> 80 years old). Three social events were approached to take part in the research.

Four primary healthcare/diabetes clinics and five general hospitals (outpatient clinics) from the six governorates were invited to participate in order to gain the perspectives of less healthy older adults.

This study included any Kuwaiti national, male or female, 50 years of age or older, who was able to communicate verbally and share his or her perceptions. While people aged 50 to 59 may not be classified as older adults according to the WHO’s (2002b) definition, the choice was made to include them in this study because they can be categorised within a transitional phase toward older adulthood. As such, including them helped me gain an understanding of their perceptions and make recommendations that included them. It was also worth noting that the retirement age in Kuwait is approximately 50 (The Public Institution for Social Security, 2009; UN, 2013) and that individuals’ levels of physical activity may change upon retirement (Berger et al., 2005). Exclusion criteria included older adults with impaired cognition or impaired ability to communicate verbally, non-Kuwaiti nationals and adults younger than 50 years old who were not a family member of a participant.

6.3.5. Recruitment

Imams in mosques, social event hosts, doctors and nurses in clinics were asked to distribute invitation letters to potential participants. The researcher also directly approached potential participants in clinic waiting areas, mosques and social events and invited them to take part in the study. Recruitment was also conducted through flyers, posters and leaflets (Appendix 15 - English version and Appendix 16 - Arabic version) that were distributed at local supermarkets, mosques, social events, primary care clinics and hospitals once the necessary permissions had been obtained. These announcements contained the researcher’s contact details. Those expressing interest were given an information sheet and/or were asked to contact the researcher if they were willing to participate to arrange a convenient time for the interview.

Section 2.2 discussed in detail the norms and traditions in Kuwaiti society such as strong family relations and strong religious beliefs. In order to capture the wider context of the social and community lives the older participants were engaged in, the views of Imams and family relatives were also sought. This would help gain a more in depth understanding of the older person’s life and the potential role of cultural factors on older adults’ PA. Snowball sampling was used to recruit older adults’ family members, friends, community leaders and healthcare professionals as significant people in older adults’ lives. During the older adults’ interviews, they were asked to name person(s) who they perceived as significant others. Older adults were then given the information sheet and consent form and asked to pass them to the significant other they named and tell them to contact the researcher if they were willing to participate in the study. In case of naming a community leader or healthcare professional, they were invited directly by the researcher who passed the information sheet and consent form to them and asked them to contact her if interested. The older adult was still counted as a participant even if he/she did not name any significant people or even if the named person declined to participate (three older adults were included, although they did not have a participating significant other).

A small sample is normal in qualitative research, but to avoid facing difficulties in recruiting an appropriate number of participants to gain rich data, several geographical settings were accessed. A total of 24 interviews (21 individual and three group interviews) were conducted, with a total of 32 participants. This was believed to be enough to generate the in-depth data needed for the current research.

6.3.6. Data Collection

Data was collected using semi-structured face-to-face interviews with older adults, family members, community leaders and healthcare professionals. An interview schedule was used to ensure that all areas were covered in each discussion. The data that emerged from the first interviews was used to inform subsequent ones, in an iterative approach to data collection.

The researcher arranged for a quiet venue to conduct the interview according to the participant’s preference; this ensured participants’ privacy. Informed consent was acquired from participants verbally or in writing when possible (see Section 6.5 for details).

Prior to commencing the interview, I (researcher) introduced myself to the participant and provided information about the study; detailed instructions are included in Appendix 8. Subsequently, participants were asked to complete a consent form (Appendix 10 - English version and Appendix 11 - Arabic version) and a brief table of demographic data (Appendix 12), including age, gender, marital status, occupation and address. This data was kept securely to protect the participants’ anonymity and confidentiality. The interviews lasted between 30 minutes and one hour.

6.3.7. Interview Schedule

An interview schedule which included a series of open-ended questions was developed for use in the interviews (Appendix 13 - English version and Appendix 14 - Arabic version). The development of the questions was based on the literature review done at the beginning of the study and were formulated to fulfil the study aims. The questions focused on participants’ perceptions of PA, barriers and facilitators that affected the adoption of active lifestyles in Kuwait. The interview questions also encouraged participants to share any ideas that they thought were helpful for promoting PA among older Kuwaiti adults. Additional questions developed during the interviews as participants discussed the topic and these were used in subsequent interviews.

6.3.8. Data Management

All individual and group interviews were recorded with a digital voice recorder (Olympus VN-712PC digital voice recorder), and field notes were taken during and after the interviews to enhance data and provide rich context (Phillippi and Lauderale, 2018). Listening to the audio recording after each interview helped me enhance my interview skills. Figure 6-1 shows an example from my reflexive journal, explaining how listening to the audio recordings helped me give more attention to my interviewing technique such as the use of probing questions and effective listening.

***After listening to the recording from the 1st two interviews, I think that I need to improve my interviewing skills; I noticed that sometimes I am interrupting the participants or not giving them enough time to answer the questions. In my next interview, I should be a better listener and keep quiet more often.***

Figure 6‑1 Example of reflexive journaling

The data (recordings) then was uploaded to an encrypted computer using an Olympus USB cable. Interviews were conducted in the primary language of the participants (Arabic) and then transcribed verbatim using Microsoft Word 16.

The conducting of all interviews and transcription of data was done by me (the researcher), who not only shared a similar culture with the participants and spoke the same Kuwaiti dialect but was also familiar with verbal and nonverbal signals. This helped to reduce misinterpretation (Halcomb and Davidson, 2006). Although transcription was a process that required much time and effort, it was essential to helping me become familiar with the data and develop emerging ideas (Bailey, 2008). It was important for me to use field notes taken during interviews, and repeatedly listen to the audio recordings while taking additional notes, so as to arrive at the kind of meaningful data that was the aim of the transcription and analysis (Halcomb and Davidson, 2006). Transcribed data was then translated to English based on conveying meaning, as word-by-word translation was not suitable. If there was no exact translation for one word, the closest meaning was used. The data was then translated back into Arabic to ensure that the meaning did not change before the commencement of data analysis (Pham and Harris, 2001). This back translation was done using a professional translation service in Kuwait. No changes in the meaning were found when back translation was performed. The findings were then presented in English and relevant quotes from the English version of the transcript were presented in the findings to aid transparency.

6.3.9. Data Analysis

The constant comparative method is the analysis method usually used in grounded theory research (Charmaz, 2006). The current study was not considered to be based on pure grounded theory as it did not employ theoretical sampling, or concurrent data collection or analysis; rather, data were analysed in the current study using thematic analysis informed by grounded theory. The clear systematic steps in thematic analysis help to minimise the confusion often faced by novice researchers due to the openness of grounded theory analysis (Chapman et al., 2015). The grounded theory approach in thematic analysis involves critical review of the raw data to make sure codes and themes truly represent the views of participants (Heydarian, 2016; Chapman et al., 2015)

Thematic analysis is a clear and flexible tool which can be modified to suit the needs of many research approaches (Braun and Clarke, 2006). It is widely used in qualitative research as it helps in gaining rich interpretation (Braun and Clarke, 2006). Thematic analysis is suitable for a novice researcher, as it helps build the ‘big picture’ of incidents and experiences from participants’ points of view (Chambliss and Schutt, 2010, p.339). Braun and Clarke (2006, p.6) defined thematic analysis as a “method for identifying, analysing and reporting patterns (themes) within the data”.

In the current research, the interview schedule was deductively produced based on a literature review as discussed in Section 6.3.7, but during the analysis process, an inductive data-driven analysis approach was chosen to be used as I believed it gave a stronger link to the data (Braun and Clarke, 2006). This means that themes were based on raw data, not existing theory or literature. Braun and Clarke’s (2006) approach was chosen to be used in this study; it is a six-phased method, but at the same time considers an ongoing process as the researcher keeps going back and forth between phases in an iterative interrelated process.

The first phase of data analysis is the familiarisation of data (Braun and Clarke, 2006). Data in the case of this research were the transcribed interviews, field notes, memos and the reflexive journal. I immersed myself in the data by reading the transcripts at least twice. During the reading process, memos, thoughts and ideas were written down in my reflexive journal. At the end, I read all the notes I took during the familiarisation stage, then tried to group the similar ideas together, reflected on them and collapsed the descriptive labelling into one. Before moving to the next phase, which was coding, I made sure to keep a record of all raw data in a separate folder in my computer.

The second phase in the data analysis process was the generation of initial codes (Braun and Clarke, 2006). Transcripts were first imported into NVivo 11 software to ease the management of the data. By data management, I meant organising the data by coding and categorising to develop a coding framework. Coding is a common data management method in qualitative research (Glaser and Strauss, 1967); it is a method of data reduction (Miles and Huberman, 1994). It is a process where data is divided into their integral pieces that are linked to comparable ideas and analysed based on their typical classification (Braun and Clarke, 2006). Coding involves labelling pieces of data, then cataloguing and arranging them to achieve precision (King, 2004; Morse and Richards, 2002). It is an essential process for categorizing and sorting of data (Charmaz, 1983), and it helps in theme identification and improves theme comparison (Charmaz, 1990). The coding framework helps in gaining a consistent approach for coding the whole data set (King, 2004). The initial coding framework was produced by myself and my supervisors independently, then we compared our versions of the framework. The framework was comparable with no significant differences; this not only improved my confidence in my coding skills but also enhanced rigour (investigators’ triangulation). I continued coding the rest of the transcripts, the framework was refined as the coding progressed and all changes to the framework were recorded (Figure 6-2 shows a screenshot of part of the early version of the coding framework in NVivo). Text sections were coded more than once if needed (with different codes). Codes were ordered on multi-levels (parent and child nodes) if applicable, as this provided more detail; contradictions were also coded. Memos and notes were recorded in my reflexive journal during the coding phase.

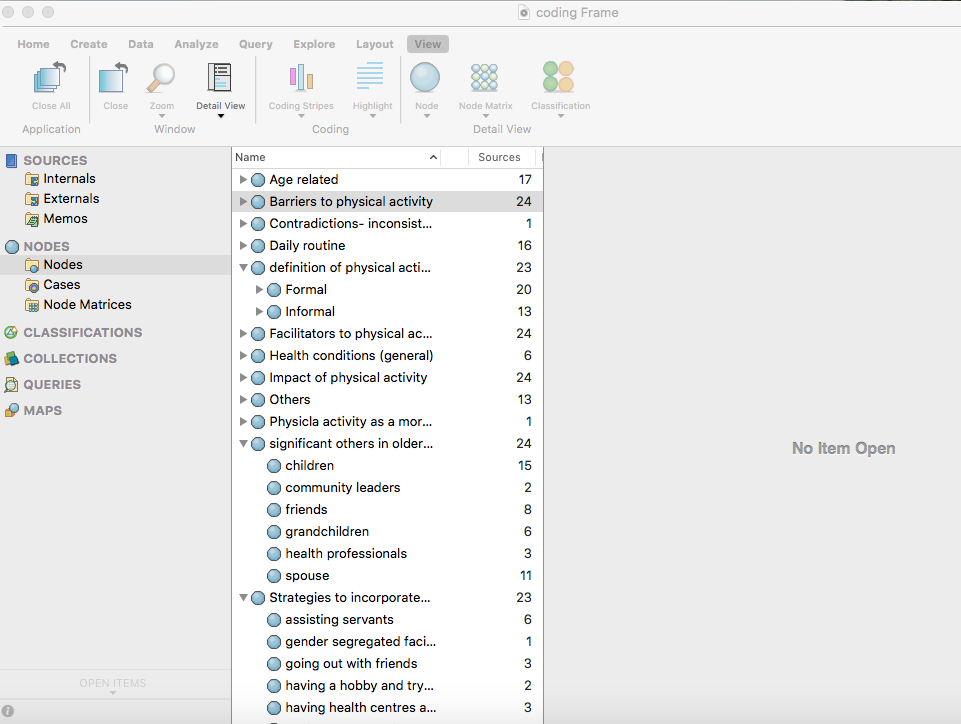


Figure 6-2 A screenshot of a section of the coding framework (early stage)

After the initial coding was completed, I started searching for themes (Braun and Clarke, 2006); the codes were exported into Microsoft Word 16 as I preferred to use a manual approach instead of using NVivo. This phase involved sorting and collating codes into different themes; this means recognising and classifying the common patterns in data pieces to structure themes and sub-themes, as themes link data in a meaningful way (Aronson, 1994). Thematic analysis gives the researcher the flexibility in how to generate the themes as long as it is consistent throughout the analysis process. For this reason, I kept a detailed record (memo) of how codes were combined and contrasted to develop categories and themes. I hand-sketched diagrams in my journal to communicate my interpretations of the relations between themes. My aim from diagramming was not to create a model but to help me picture how themes and sub-themes connect to each other and to help me see these complex connections in a simpler way and focus on key aspects (Kools et al., 1996) (Figure 6-3 shows an example of a diagram of the ‘significant others’ theme from my journal).

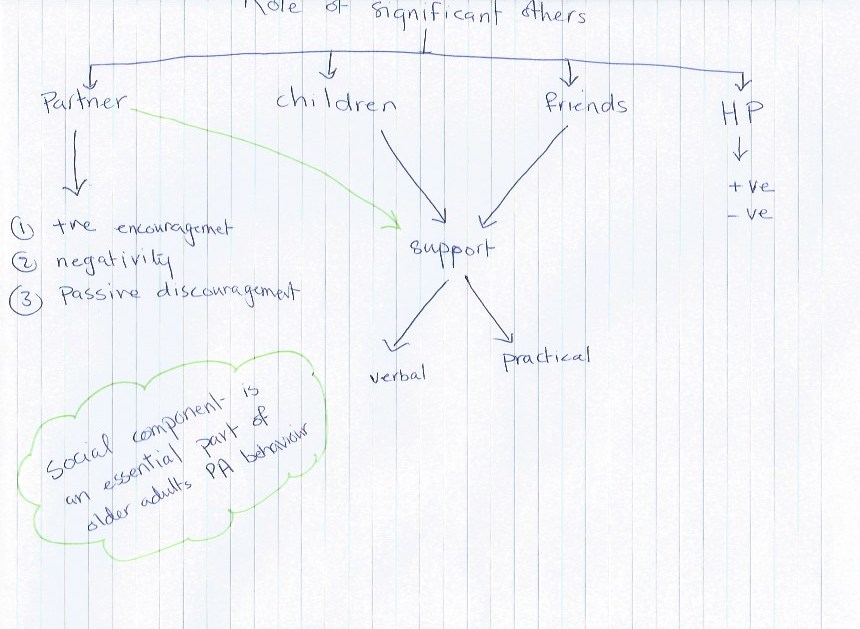


Figure 6-3 A hand-sketched diagram of the theme ‘significant others’ from my journal

Next, I started reviewing and refining the themes (Braun and Clarke, 2006) by first reading the collated data to ensure a logical flow. Some themes were combined into one theme while others were divided into separate themes. Then I examined the validity of separate themes in comparison to the whole dataset. This process was repeated to further refine themes and sub-themes, until I felt that full understanding of the transcripts was attained with an understanding of the story the themes were telling; this process aimed to achieve coherence. I continuously returned to the raw data to make sure themes represented participants’ views; additionally, supervisors’ feedback was very helpful at this stage. As a result of this process, three main themes were identified, each with several sub-themes, which will be discussed in detail in the next chapters.

**Memo writing, field notes and reflexive journal**

As the current study was underpinned by social constructionist epistemology, reflexivity was an important part of the research process. Reflexivity helped me understand my role as a co-constructor of knowledge in this process (Finlay, 2002) and at the same time helped me to be objective while maintaining positionality. Reflexivity involving continuous evaluation of the research process can be done by keeping a research diary which includes all field notes, memos and reflexive journals recorded during the whole research process. These notes were considered as another source of information as they contained details of all decisions, challenges, ideas and thoughts that emerged during the study (Davies, 2002). Notes and memo writing are essential in grounded theory (Charmaz, 2006) and should start from the beginning of the research, as they inform and direct data analysis (Schatzman and Strauss, 1973).

From the beginning of the research process, I adopted a routine of recording notes and memos as soon as they came into my mind in my research diary. I recorded my ongoing viewpoints and interpretations on incidents and events. During the interviews, I recorded ideas and themes participants talked about directly in my journal and returned to them during the interview for more explanation and discussion. At the end of each interview, the notes also helped me in writing a summary of the emerging ideas and recording my overall impression. I used these notes during the data collection and analysis as well. I also wrote memos during the transcription and analysis processes, such as describing the meaning of and the links between codes. I also reflected on the challenges that I faced during the research process and how I tackled these challenges. Finally, I reflected on how my insights and perceptions had changed during this project and how this affected my views on my personal career as a physiotherapist (Figure 6-4 shows an example of my reflexive journaling).

**One of the challenges I am facing in data analysis is having too much repetition in my findings, I think because I am a novice researcher with little experience in data analysis. My supervisors’ feedback is helping me cutting back on description and honing on the key messages coming out of the data. I should always remind myself to step back and ask (What does this data tell me?)**

Figure ‎6‑4 Example of reflexive journaling

# 6.4 Validity and Reliability in Qualitative Research

Several criteria were taken into account in this research to ensure trustworthiness and rigour (Lincoln and Guba, 1985). Trustworthiness criteria are similar to validity and reliability tests in quantitative research (Lincoln and Guba, 1985; Nowell et al., 2017). The study considered rigour in terms of credibility, transferability, dependability and confirmability. These are discussed in more detail below:

3.4.1 Credibility

Credibility is related to the accuracy of the study findings, which means that the researcher’s interpretations and findings reflect the participants’ views (Lincoln and Guba, 1985). The first step to enhance credibility was immersing myself in the data and prolonged engagement with it through the data collection, transcription and analysis. The use of field notes with the constant comparison method also improved accuracy, as notes from one interview were used to inform the following interviews. Credibility is improved if data is analysed by more than one researcher, but as this study was conducted as part of a PhD degree, the data was analysed by myself only. However, I received regular feedback from my supervisors.

3.4.2 Transferability

Transferability relates to the generalisability of the study finding, whether the study findings can be replicated in different contexts, settings or groups (Lincoln and Guba, 1985). Transferability criteria were achieved in this research by thick description, which started with detailed description of the Kuwaiti context including the cultural, social and religious traditions (see Chapter 2). Additionally, the findings (Chapters 8, 9 and 10) provided rich detailed explanations of how older adults and their significant others perceived their PA behaviours. This level of detail helps to evaluate the quality of the research and to determine if it can be transferred to other groups.

3.4.3 Dependability

Dependability tests the consistency of findings if the study were to be repeated. An audit trail was an important strategy to improve dependability in the current study. This included evidencing and archiving the raw data and field notes, memos and reflexive journals, which contained all thoughts, ideas and decisions made during the research process.

3.4.4 Confirmability

Confirmability relates to objectivity and neutrality, which means that the findings are free of the researcher’s bias and misconceptions (Lincoln and Guba, 1985). When credibility, transferability and dependability are achieved, confirmability is achieved as a result (Guba and Lincoln, 1989). My awareness of my influence as a researcher on the study, which resulted in my constant reflexivity, was a key strategy to improve confirmability. An audit trail, as discussed before, including all decisions made during the research, s clearly also useful. Constant feedback from my supervisors through the whole research study also improved confirmability.

**6.5. Ethical Considerations**

According to the Declaration of Helsinki (1964), there are primary ethical standards that should be adhered to in any research involving human participants, including freedom, beneficence, non-harm, anonymousness, confidentiality and fairness (World Medical Organisation, 1996).

Participation in this research was completely voluntary. All potential participants were given an information sheet (Appendix 8 - English version and Appendix 9 - Arabic version) containing information about the aims of the study, details about procedures and how the information therein was to be treated, confidentiality, and participants’ rights, including the right to withdraw at any time, and any other related information that might help them in their decision to participate. Individuals who chose to participate were required to sign a consent form (Appendix 10 and 11), and participants with poor literacy were asked to give verbal consent.

Confidentiality is another ethical issue in research. Participants’ identities were preserved; minimal identifiable information was obtained; and no identifiable information was included in the report. Moreover, privacy and confidentiality were respected. In particular, the researcher was a physiotherapist working in the Kuwaiti healthcare system. As such, there may have been instances in which the personal information of colleagues might have been known or passed on to the researcher during the interview process. To avoid this issue, the medical professionals were asked not to name third parties prior to the interviews being conducted.

Any paperwork and field notes were coded and stored in a locked desk to preserve identities. Recordings were destroyed immediately after transcription, while the data will be kept for five years following transcription, and then destroyed.

Additionally, there were some ethical issues specific to older people. For example, if they had health conditions which prevented them from taking part in a long interview, effort was made to assure participants did not experience any fatigue or tiredness. For participants with sensory impairment who needed support with signing consent forms and reading information sheets, the researcher helped them in reading the information sheet and signing the consent form. If the participant did not read or write, the researcher also read the information sheet for him/her and made sure that he/she understood it. Verbal consent was acquired in the case of the participant not being able to sign for any reason.

# 6.6. Chapter Summary

This chapter described the use of qualitative methodology in the current study and presented justification for the methodological decisions made during the research. Methods of data collection and analysis were also described in detail. The next chapter will present the backgrounds and characteristics of the participants in the current study.

# Chapter 7 - PARTICIPANTS’ CHARACTERISTICS

# 7.1 Introduction

This chapter introduces anonymised biographical details on the study’s participants, including information on the social settings, dynamics and personal relationships among these individuals. Gender, age, occupation and marital status of the older adults in this study varied considerably. Tables 7-1 and 7-2 set out the number of interviews conducted by participant type and format, and Table 7-3 shows participants’ key characteristics. Pseudonyms were used throughout the thesis.

Table 7-1 Number of persons interviewed according to participant type

Total number of interviewed participants: 32

|  |  |
| --- | --- |
| Type of participant | Number interviewed |
| Older person | 16 |
| Spouse | 2 |
| Adult children | 5 |
| Friends | 6 |
| Imam | 1 |
| Healthcare professional | 2 |

Table 7-2 Total number of interviews by format

Total number of interviews: 24

|  |  |
| --- | --- |
| Interview format | Number of interviews |
| Older person alone | 10 |
| Older person with spouse | 1 |
| Older person with adult children | 1 |
| Older person with friend | 1 |
| Spouse alone | 1 |
| Adult child alone | 4 |
| Friend alone | 3 |
| Imam | 1 |
| Healthcare professional | 2 |

*Table 7-3 Participants’ key characteristics*

| **Interview** | **Participant Pseudonym** | **Gender** | **Age** | **Governorate** | **Marital status** | **Role** |
| --- | --- | --- | --- | --- | --- | --- |
| 1 | Sakina | F | 57 | Hawalli | Married | Older adult |
| 2 (group) | Noura | F | 59 | Mubarak Alkabir | Widow | Daughter |
| Shareefa | F | 73 | Capital | Widow | Older adult |
| Amani | F | 57 | Farwaniya | Married | Daughter |
| 3 | Manal | F | 59 | Farwaniya | Married | Older adult |
| 4 | Modhi | F | 57 | Jahra | Married | Older adult |
| 5 | Mona | F | 52 | Ahmedi | Married | Older adult |
| 6 | Muneera | F | 52 | Farwaniya | Widow | Older adult |
| 7 | Saleh | M | 72 | Ahmedi | Married | Older adult |
| 8 | Hussain | M | 70 | Farwaniya | Married | Older adult |
| 9 (group) | Waleed | M | 64 | Ahmedi | Married | Spouse |
| Hessa | F | 62 | Ahmedi | Married | Older adult |
| 10 | Abdullah | M | 61 | Jahra | Married | Spouse |
| 11 | Latifa | F | 60 | Hawalli | Married | Older adult |
| 12 | Zainah | F | 60 | Capital | Married | Friend |
| 13 (group) | Hajar | F | 65 | Capital | Married | Older adult |
| Zahra | F | 70 | Hawalli | Married | Friend |
| Sawsan | F | 66 | Mubarak AlKabir | Married | Friend |
| May | F | 60 | Farwaniya | Married | Friend |
| Tasneem | F | 55 | Mubarak Alkabir | Single | Friend |
| Bedour | F | 70 | Hawalli | Married | Friend |
| 14 | Dana | F | 68 | Hawalli | Married | Older adult |
| 15 | Haya | F | 65 | Hawalli | Married | Friend |
| 16 | Sa’ad | M | 58 | Capital | Married | Older adult |
| 17 | Ahmad | M | 58 | Jahra | Married | Friend |
| 18 | Areej | F | 30 | Farwaniya | Married | Daughter |
| 19 | Asma | F | 32 | Ahmedi | Married | Daughter |
| 20 | Sarah | F | 31 | Ahmedi | Married | Daughter |
| 21 | Bashayer | F | 30 | Hawalli | Single | Daughter |
| 22 | Physician | M | 50 | Hawalli | Married | Physician |
| 23 | Physio | F | 31 | Mubarak Alkabir | Single | Physio |
| 24 | Imam | M | 57 | Capital | Married | Imam |

# 7.2 Key Characters

Sakina and Bashayer (interviewed individually)

Sakina was a 57-year-old married female who lived in Hawalli governorate with her family (husband, three adult married sons, two adult daughters and four grandchildren) in the same home. She was a retired teacher, and her husband worked as a supervisor at an oil company. They were a highly educated family, with two of her children working as healthcare professionals. She complained of diabetes and hypertension, which she was controlling with medication. Sakina considered herself physically active. She had two maids and three nannies in her house.

Bashayer was Sakina’s daughter and was a 30-year-old single female who worked as a physiotherapist. She was physically active and attended a CrossFit class on a daily basis after work.

Shareefa, Noura and Amani (interviewed as a family group)

Shareefa was a 73-year-old widow who lived with her married son, daughter-in-law and three grandchildren in the Capital governorate. She had three daughters, four sons and 21 grandchildren. She was a housewife who was studying at the time of this interview at a Quran school (a daily morning religious course for adults). She had diabetes, hypertension and arthritis. She had two maids and a private driver, so she did not do any housework except occasional cooking (with the maids’ help) for family gatherings. She perceived herself as physically inactive due to joint pain during movement.

Noura, Shareefa’s daughter, was a 59-year-old widow who lived with her unmarried youngest son and three maids in Mubarak Alkabir governorate. She had two daughters, two sons and six grandchildren. Noura was a retired secretary. She was totally dependent on maids for housework, but perceived herself as physically active, as she walked on the walking track daily and attended gym classes regularly. She did not cite any health problems.

Amani, Shareefa’s other daughter, was a retired 57-year-old who lived with her family in Farwaniya governorate. She had two daughters, two sons and two grandchildren. Her married son and his family did not live with her. She was retired (office work) and had two maids and a private driver. She depended on the maids for housework and grocery shopping, but she cooked sometimes. She was obese and had arthritis and a herniated disc. She perceived herself as physically inactive.

Manal and Asma (interviewed individually)

Manal was a 59-year-old married female who lived with her husband and two married sons in Farwaniya governorate. She had two daughters, three sons and 14 grandchildren, along with one maid, two nannies and a driver. She was a housewife with diabetes and severe knee arthritis who perceived herself as physically inactive, although she did some housework daily, such as cooking.

Asma, Manal’s daughter, was a 32-year-old social worker at a school. She was married with two sons and lived with her small family in an apartment connected to her in-laws’ house. She had one maid who did all the housework, including the cooking. Asma perceived herself as physically inactive, as her work and family commitments did not allow her any time for PA, she said.

Modhi and Abdullah (interviewed individually)

Modhi was a 57-year-old married female who lived with her husband and four single sons in Al-Jahra governorate. She also had two married daughters who lived with their families in separate homes. She had six grandchildren and was a retired librarian. She had several musculoskeletal problems, including a herniated disc and arthritis in her knees, back and neck. She had two maids and a private driver, and she totally depended on the maids to do the housework. Modhi perceived herself as physically inactive.

Abdullah, Modhi’s husband, was 61 years old and worked as an assistant undersecretary in a governmental ministry. He had hypertension and perceived himself as physically inactive, although he talked extensively about the importance of PA to health.

Mona and Sarah (interviewed individually)

Mona was a 52-year-old married female who worked as a head teacher. She had four boys, two daughters and six grandchildren. She lived in Ahmedi governorate with her husband and unmarried children (a girl and three boys). She had one maid who did all the housework, although Mona usually cooked. She perceived herself as physically active, as she walked daily on the walking track alone or with her neighbour since her diabetes diagnosis four years ago.

Sarah, Mona’s daughter, was a 31-year-old married teacher. She had one maid and perceived herself as physically inactive due to lack of time.

Muneera and Areej (interviewed individually)

Muneera was a 52-year-old widow living in Farwaniya governorate with her children and grandchildren. She had four daughters, one son and four grandsons. She was a retired nurse who perceived herself as physically active, as she exercised daily in her mini-gym at home. She also followed many fitness coaches on Instagram to utilise their advice and get exercise ideas. She had rheumatoid arthritis and found some exercises that were very beneficial in reducing stiffness.

Areej, Muneera’s daughter, was a 30-year-old married engineer with three children. She lived in an apartment connected to her parents’ house. Areej depended on her mother for cooking and child care, including dropping off and picking up the grandkids from school. Areej perceived herself as physically active and exercised regularly.

Saleh

Saleh was a 72-year-old married male who lived with his wife in Ahmedi governorate. He had six children, all of whom were married and lived independently. He also had 12 grandchildren. He was a retired oil company employee who had diabetes, hypertension, arthritis and degenerative discs. Saleh perceived himself as physically active. None of Saleh’s significant others were willing to participate in the study.

Hussain

Hussain was a 70-year-old retired film director who lived with his wife and one of his daughters in Farwaniya governorate. He had three married daughters and one son living independently. He also had six grandchildren. Hussain was diabetic, hypertensive and had a history of cancer. He perceived himself as physically active. Hussain did not name any significant others, as he said no one has been influencing his PA levels in any way.

Hessa and Waleed (interviewed as a family group)

Hessa was a 62-year-old married housewife living in Ahmedi governorate with her husband and two married sons and their families. She also had three married daughters who lived independently. She had two maids and a driver. Hessa perceived herself as physically inactive.

Waleed, Hessa’s husband, was a 64-year-old retired oil company worker. He perceived himself as physically inactive.

Latifa and Zainah (interviewed individually)

Latifa was a 60-year-old married female living in Hawalli governorate with her husband and three single children. She also had a married daughter living independently and one grandchild. She worked as an undersecretary in a governmental ministry. Latifa had two maids who did all the housework. She perceived herself as physically inactive, as she said she had no spare time for PA.

Zainah, Latifa’s friend, was a 60-year-old married female living in the Capital governorate with her husband and two children. She had a married son living with his wife in a separate home. She worked as a director in the same ministry as Latifa and had two maids who did all the housework for her.

Hajar, Zahra, Sawsan, May, Tasneem and Bedour (interviewed as a group of friends)

Hajar was a 65-year-old married female living in the Capital governorate with her husband and four adult children. She was a retired teacher. She had two maids who did all the housework. She suffered from diabetes and hypothyroidism, and she perceived herself as physically active, walking every morning on the beach near her house for an hour.

Zahra was a 70-year-old married female living in Hawalli governorate with her husband and two sons. She had three married children who lived independently and six grandchildren. Zahra complained of hypertension and diabetes. She had two maids to help her with housework, and perceived herself as physically inactive.

Sawsan was a 66-year-old married female living in Mubarak Alkabir governorate with her husband and three adult children. She had one maid who helped with her housework. Since she retired, she had been able to have more time to do the activities she loved.

May was a 60-year-old married female living in Farwaniya governorate with her husband and five adult children. She had two maids who did the housework and complained of disc prolapse, which she said limited her physical activity.

Tasneem was a 55-year-old single female who worked as a supervisor. She lived with her mother and two maids in Mubarak Alkabir governorate.

Bedour was a 70-year-old married female living in Hawalli governorate with her husband and three adult children. Her oldest son was married and living with them with his wife and 2-year-old son. She had three maids and a gardener, and suffered from diabetes and hypertension.

The above ladies had been friends for a very long time, as they all worked at the same school. They named each other as significant others who influenced their PA levels in a positive way through mutual encouragement and support. This interview was conducted during their weekly gathering, which they have held at Bedour’s house since their retirement.

Dana and Haya (interviewed individually)

Dana was a 68-year-old married female living in Hawalli governorate with her husband and four adult children. She was a retired teacher and took medications for heart problems, diabetes and hypertension. She also had pain from a disc prolapse. She did not have a maid and did some housework herself, while her children helped with the rest, although she had a chef who cooked and managed the kitchen. Since her retirement, she had suffered from depression several times. She was not physically active, although she got continuous PA advice from her friend, Haya, whom she named as her significant other.

Haya was a 65-year-old married female who lived in Hawalli governorate with her husband and four adult children. She was a retired PE teacher. She had two maids and a driver, as she hated housework and refused to do any. Since her retirement, she went to the gym every day and spent a minimum of two hours there after her husband encouraged her to join one.

Sa’ad and Ahmad (interviewed individually)

Sa’ad was a 58-year-old married man who lived with his wife in the Capital governorate. He worked as an assistant undersecretary in a government ministry. He had a history of cancer and osteoporosis, and he said he was physically inactive. Sa’ad named his friend, Ahmad, as his significant other.

Ahmad was a 58-year-old married man living in Jahra governorate with his wife, five adult children and two grandchildren. He worked as a director in the same government ministry with Sa’ad. He was diabetic and obese, but feared that PA could be harmful in his case if done incorrectly. He preferred to spend his free time with his family and friends instead of engaging in PA.

Physician

The physician was a 50-year-old married male with four children. He worked as the head of a primary-care clinic for older adults. He was physically active and walked regularly.

Physiotherapist

The physiotherapist was a 31-year-old single female working in an outpatient clinic at a general hospital. Her role included treating chronic conditions such as musculoskeletal diseases, and the majority of her patients were older adults who were referred by an orthopaedic doctor to the PT department. She was physically active and believed that physiotherapists should play a primary role in promoting PA in Kuwait, as they had extensive knowledge about exercise therapy.

Imam

The Imam was a 57-year-old married male living with his wife and adult children in the Capital governorate. He worked as an Imam at a nearby mosque. His role included leading the worship services (prayers), delivering Friday sermon and providing a weekly religious lecture. Although he perceived himself as being physically inactive, he believed that Islam encourages PA.

# 7.3 Chapter Summary

The chapter has outlined the participants’ characteristics and summarised short biographies of each participant to provide some context to the environment each older adult was living in. The next three chapters will discuss in detail the findings of the current study. Three themes emerged from the data, so each chapter will discuss a different theme.

# CHAPTER 8 - BARRIERS TO PHYSICAL ACTIVITY AMONG OLDER KUWAITI ADULTS

The thematic analysis of the data resulted in the development of three key themes. The first theme discussed barriers to PA among older adults; the second key theme was related to the influence of significant others on older adults’ PA; and the third key theme discussed strategies to improve PA levels among older adults in Kuwait. The key themes and their related sub-themes are presented in Table 8-1.

Table 8-1 Summary of key themes and sub-themes

|  |  |  |
| --- | --- | --- |
| Key Theme | Sub-themes | Sub-themes |
| **Barriers to PA among older adults** | Traditions, norms and the influence of culture | Restrictions for women |
| Embarrassment as a barrier to PA |
| Dependence on others |
| Social life is sedentary focused |
| Lack of time, other commitments, priorities and role responsibilities |
| Older Kuwaiti peoples’ attitudes to PA | Ageing: acceptance and adaptation |
| Sedentary lifestyle as a reward, activity as a punishment |
| Fear of falling and risk-averse society |
| Perceptions of work vs leisure PA | Cultural perceptions to PA over time |
| Climate and physical environment in Kuwait |
| Use of formal facilities such as gyms |
| Lack of policies to improve PA | - |
| **Influence of significant others on older adults’ PA** | Influences of spouses on being active | Positive encouragement |
| Mockery and negativity toward female’s PA |
| Passive discouragement |
| The role of grown-up children in influencing PA | - |
| Influence of peer support and social networks | - |
| Influence of health professionals | Trust/respect of doctors and health professionals |
| Interpretation of advice |
| **Strategies to improve PA levels among older adults** | Intrapersonal and interpersonal level strategies | Habits - developing good habits and changing bad ones (life course) |
| Incorporating PA into daily activities vs group PA |
| Adjusting PA to the climate |
| How health professionals can influence PA |
| Environmental level strategies | Physical activity friendly community |
| Using technologies to reach people in the community |

This chapter presents the barriers to PA among older Kuwaitis as determined by the data analysis. Four sub-themes emerged from the data as barriers to PA: the influence of traditions, norms and culture; the attitudes of older Kuwaiti adults to PA; perceptions of work versus leisure PA and the effect of lack of policies to improve PA. These are discussed in detail below.

# 8.1 Traditions, Norms and the Influence of Culture

The traditions, norms and influence of Kuwaiti culture affected the PA behaviours of participants in many ways, both as a barrier and/or facilitator. This over-arching sub-theme will be explained in relation to: restrictions for women; the effect of embarrassment; dependence on others; social life in Kuwait and lack of time.

## Restrictions for Women

Religion, traditions and norms play an important role in Kuwaiti culture (details in Section 2.2). Data collected from the interviews suggested that these factors shape Kuwaiti behaviour and influence how most of the participants live their lives. In relation to religion, the analysis showed that some Islamic principles, such as modesty, can have an impact on PA levels among the Kuwaiti population.

Modesty is a basic principle in Islam. The traditional dress code for both genders is affected by the principle of modesty (see Section 2.2.1). All female participants except one (Zainah) in the current study wore the hijab; six of them (four older adults, two significant others) also covered their faces with the niqab. One participant (Latifa) talked about the negative effect that the hijab had on her PA level:

*I think our weather in Kuwait is unsuitable for physical activity. It is very hot and humid. Especially for us women who wear hijabs, it is very difficult to walk on the walking track with a veil in the hot weather (Latifa, F, 60 Y old, inactive).*

Latifa explained that she found it difficult to perform outdoor activities in the hot weather while wearing the hijab. Similarly, Amani described swimming at the beach while fully dressed – due to the norm of modesty – as uncomfortable:

*Even when we used to have our own chalet in Kuwait, we used to swim [in the sea] with our clothes on and it was not comfortable (Amani, F, 57 Y old, group, inactive).*

Both Latifa and Amani described themselves as physically inactive and identified the hijab and clothing expectations as barriers to PA. By contrast, none of the other female participants mentioned the hijab as a barrier to PA, even those describing themselves as physically inactive.

The principles of modesty in Islam are not restricted to dress code. Modesty in Kuwait also includes a range of behaviours that organise how men and women can interact with each other. For example, men and women are instructed to cast down their glances and not to look at the opposite gender in a lustful way. These norms influence male and female interactions and affect what is perceived as appropriate or inappropriate in the presence of the opposite gender. Manal’s comment gives an example:

*Although I see women exercising there as well, I don’t think it is appropriate, especially when it is full of men. Other than that, I don’t mind going to the walking track (Manal, F, 59 Y old, inactive).*

Manal perceived the presence of men at the public walking track as restricting and inhibiting her PA. She found it inappropriate to exercise in front of men at the walking track, which restricted her to walking. Exercising in front of men could attract unwanted attention. This is not acceptable in a conservative culture such as Kuwait.

Sawsan, a physically active participant, elaborated on the negative effect of cultural norms on women’s PA:

*I love cycling and know how to do it, but our culture does not accept women using a bike outdoors. My brother is cycling regularly and he notices a huge improvement in his fitness (Sawsan, F, 66 Y old, group, active)*.

Sawsan explained that she was unable to cycle, even though she enjoyed it, as it is perceived as inappropriate for women in Kuwaiti culture, as again, it could draw unwanted attention from men. As a result, women face restrictions compared to men when choosing outdoor PA, because some, such as football and cycling, are culturally inappropriate.

In summary, wearing hijab was not a barrier to PA, as the majority of physically active women in this study wore it while doing outdoor PA; only two women perceived the hijab as a barrier to outdoor PA and they were physically inactive anyway. In addition, women’s outdoor PA choices were limited to walking due to the norms of modesty, which expect women to avoid any activity that could draw unwanted attention from men. Female participants believed that these cultural norms enable men to have more freedom of choice in outdoor PA.

## Embarrassment as a Barrier to Physical Activity

Embarrassment was perceived as a barrier to PA by many participants and was affected by several issues. The first issue related to feelings of embarrassment was gender, which was also related to the Kuwaiti conservative norms, traditions and culture, as illustrated in the following comment by Waleed, an inactive male participant:

*Another barrier to walking on the track for me is that it is full of women and usually in sports clothes. I do not feel comfortable walking there and seeing them. When we go to Europe, we walk like them. Although we see women in not so modest clothes, this is normal in their culture, while in Kuwait, modesty is the norm, and it is really embarrassing to see the opposite on the walking track (Waleed, M, 64 Y old, group, inactive).*

Waleed related his feeling of embarrassment to the presence of women in sports clothes, which he perceived as immodest and against conservative norms. He considered modesty as more important than PA. Thus, he did not walk at the walking track because it did not provide a modest environment. Hessa, Waleed’s wife, tried to justify her husband’s feelings:

*You know why he feels this way? Because the walking track in our area is very narrow, so women and men walk very close to each other, so I understand his feeling, and he is kind of right. I think if they made it wider, this problem would be solved (Hessa, F, 62 Y old, group, inactive).*

Hessa supported her husband’s statement and lack of activity and put forward a solution (a wider track), but Waleed was embarrassed at seeing the opposite sex, which he could still do even if the track were wider. Waleed did not comment on his wife’s explanation. Similarly, Muneera, an active female participant, commented on gender in relation to her feelings of embarrassment:

*Sometimes when I go for a walk on the walking track, I want to jog or do some exercises while walking, but I feel embarrassed, especially being surrounded by men. I wish we had a separate walking track for women (Muneera, F, 52 Y old, active).*

Like Waleed, Muneera perceived exercising in the presence of the opposite gender at the public walking track as embarrassing. Her feeling affected her PA level negatively by limiting her choices when exercising outdoors. Exercising in a mixed-sex designated exercise area, such as a walking track, appeared to affect some of the males and females negatively. For such participants, gender segregation was an important factor in them feeling able to carry out PA.

Besides gender, age was also a related issue to the feeling of embarrassment among male and female participants. For example, Waleed explained his feeling of embarrassment as follows:

*Sometimes, I feel embarrassed to wear a training suit to the walking track, but this is something personal. I mean, there is nothing in our traditions that prevents me from wearing sports clothes, but because I am not used to it, I feel embarrassed, especially since I am old (Waleed, M,64 Y old, group, inactive).*

Waleed felt too embarrassed to wear a training suit to the walking track. As an older adult who had been used to a specific dress code (the dishdasha) most of his life (Figure 8-1 shows a man wearing the traditional costume – dishdasha), it was difficult for him to accept the idea of wearing sports attire. He regarded sports clothes as age related and perceived the wearing of them as more suitable for younger adults, not people his age. Age affected female participants as well, as explained in Modhi’s comment who felt embarrassed to exercise due to her age:

*I think women my age feel embarrassed to do exercises; they feel that people will not accept it, especially if we enrol in a gym (Modhi, F, 57 Y old, inactive).*



Figure 8-1 An example of men's traditional costume (dishdasha)

In addition to gender and age, obesity also reinforced embarrassment regarding PA. Some participants believed that obese people might feel embarrassed to wear sports clothes because of their body shape:

*Some people may feel embarrassed to go out if they are obese or feel embarrassed to wear sports clothes (Abdullah, M, 61 Y old, inactive).*

These findings demonstrate that embarrassment is a multi-layered concept and comprises a number of issues, which are related to gender, culture, age and the perceptions of others.

## Dependence on Others

While in most cultures there is an emphasis on the importance of caring for parents in old age, in Islamic/Arabic culture this is considered a religious duty. People learn from a very young age that it is their duty to care for their parents when they get older, in the same way that they were taken care of when they were young. This manifests itself in several ways. For example, older adults are normally expected to be served and everyone around them will try to provide as much service to them as possible because this is seen as a form of respect and caring. Several participants in this study explained that the tradition of filial piety, which is regarded as good behaviour, encourages older people to be inactive, because in some cases the care provided by the people around them is actually a barrier to being physically active. The comment below is from a physiotherapist participant who works at an outpatient clinic where most of her patients are older adults. As a healthcare provider, she was aware of the issues of dependence, but found it difficult to overcome them:

*Another barrier is cultural; when our parents get older, we tend to prevent them from moving and do everything for them instead. We think we are caring, but to develop this is not [good] in the long run for older adults (physiotherapist, F, 31 Y old, active).*

Most participants said that their children provide a lot of care for them, but they (the parents) perceived this care and responded to it in different ways. For example, one inactive female, Dana, commented:

*My room is on the ground floor, but my children always say, “do not come mum, we will come to you,” as they know that using stairs increases my pain (Dana, F, 68 Y old, inactive).*

It appears from the findings that the attitudes of Dana’s children reduced her daily PA. They thought they were caring for their mother by preventing her from getting the knee pain she usually feels when she uses the stairs. Dana appears to be happy to have this kind of help from her children and did not consider it as having a negative impact on her daily activities. On the other hand, another inactive female, Shareefa, acknowledged that her children’s help had a negative impact on her PA level, and although she expressed her view to her children, she mentioned later in her interview that at the end she listened to them and stopped her activity, as they wished:

*My children have the biggest influence on my physical activity. When I am doing some work at home, they always ask me to stop as they do not want me to get tired. So they do not let me do any work, especially my daughters, but I always tell them, “Please let me move. It is better for my legs” (Shareefa, F, 73 Y old, group, inactive).*

By contrast, physically active participants believed that this tradition of caring for older adults was one of the reasons for older adults’ dependency and advised that they should stop asking people around them to serve them and to start being more independent. Physically active participants were more likely to resist their children’s wishes and move around, regardless of the advice to reduce their PA, as illustrated by Saleh’s comments below:

*I know that, in our society, people love to serve older adults, and they do not want them to feel tired... Because we have to move, we should stop asking our children and maids to do things for us; instead, we should move and use stairs and so on (Saleh, M, 72 Y old, active).*

Adult children’s care for their parents could affect the latter’s PA level negatively. The findings suggest that some older adults have entirely sedentary lifestyles because their families do everything for them and take care of them, so that they feel unable to be active due to this support or because their family members do not give them the chance. The culture of caring for older adults has a strong influence on this norm in Kuwait. Most participants believed that adult children prevented or at least tried to prevent older adults from doing daily activities, such as using the stairs and housework, because they thought that it might increase their parents’ pain or tire them. According to participants, the children thought that it was their duty to allow their parents to relax and to do everything for them. There is much emotion tied up in this cultural tradition. The children feel duty-bound to look after their parents and may feel offended or upset if their parents do not let them. Conversely, parents may feel helpless in this situation, and may feel anxious or frustrated that they are not being allowed to do some things for themselves. At the same time, they also do not want to upset their children. Sometimes, it is easier for them to keep the peace and maintain the status quo. It is a power struggle.

In addition to the effects of depending on their children or family, a culture of dependence on domestic servants also influences the level of PA among Kuwaitis. Kuwait is considered one of the richest countries in the world (Section 2.1.5). There is complete dependence on domestic servants to do most household chores. Every house in Kuwait, regardless of social class, has a number of maids and drivers, which means, according to most participants, that family members do not do any housework at home. For older adults, not only do grown-up children provide sometimes unnecessary help, but this is exacerbated by other forms of help from domestic staff such as servants and drivers. Muneera talked about her perception of her dependence on maids:

*Depending on maids at home really reduces our PA level. When I need a cup of coffee, I will ask the maid to prepare it for me. Sometimes I ask myself, “Why do I not prepare it myself?” I do not know why I am so lazy. The luxurious life we are living reduces our activity level as well (Muneera, F, 52 Y old, active).*

Although physically active herself, when talking about housework, Muneera perceived herself as ‘lazy’ because she depended on her maids. She acknowledged this as being wrong but at the same time she internalises the culture – although in most cases it is the norm for maids to fetch coffee, Muneera chastises herself over it because she knows she could be more independent; although depending on maids is imposed on her by the culture.

The comment below explains how this dependence on domestic servants affects both older and younger adults in the same way. Asma, daughter of one of the participants, described how no one in Kuwait does any house chores, regardless of their age:

*We as a society depend totally on domestic servants; this is true for both young and old people. Every house has two to three maids, so we are used to doing nothing and being served (Asma, F, 32 Y old, inactive).*

In summary, depending on their grown-up children to provide care and servants to do housework affect older adults’ PA level negatively because these habits promote a sedentary lifestyle. Both active and inactive participants perceived these barriers in different ways, which affected how they respond to them.

## Social Life is Sedentary Focused

The social life of Kuwaitis in general is very busy. They have frequent gatherings and social events, like people in most other Arab cultures, and attending these events is usually seen as a priority. A majority of the participants agreed that social gatherings and events affect the level of PA negatively. This manifested itself in several ways: participants stated they were usually busy preparing for gatherings and did not have time for PA. In addition, they spent the gathering being sedentary and eating high amounts of fat and sugary food. Thus, the issue is not only the frequency of the social gatherings but what Kuwaitis do during these events.

*Another barrier to physical activity is the social burden, if that is the right phrase. I mean in our culture, we love social gatherings, and we attend them regularly. We are sedentary most of the time during the gatherings and never include physical activity in our gatherings, such as walking as a family or going to the beach to swim as a group (physician, M, 50 Y old, active).*

Several participants explained that PA as a leisure activity is absent among Kuwaitis. Many participants observed that people prefer to go to restaurants when on outings. This led to a further reduction in PA levels and increased the chances of obesity and chronic diseases due to the consumption of high-fat foods:

*I think that a lack of activity is not the only problem in Kuwait. We have a problem with food also (Noura, F, 59 Y old, group, active).*

The following comment from Muneera expresses her view about an occasion when she was passing the nearby walking track in a car on her way to a weekend family gathering:

*Family gatherings and visits really take a lot of our time. When I see people walking on the walking track during the weekend, I ask myself, “How do they have time to walk during the weekend? Do they not have a family? Do they not have gatherings to go to? (Muneera, F, 52 Y old, active).*

She wondered how people could be active during the weekend, which is supposed to be a time for family gatherings. Her view may suggest how the perception of how to spend one’s leisure time affects people’s PA choices. For her, although she is physically active, PA is not something done at family gatherings.

As a collectivist society sharing similar characteristics with most Arab societies, Kuwaiti society places a great value on socialisation and gatherings. Like most Arab people, Kuwaitis focus on food as a social activity. PA is usually not an option during leisure time.

## Lack of Time, Other Commitments, Priorities and Role Responsibilities

Lack of time was one of the participants’ most frequently reported barriers to PA. Both working and retired, physically active and inactive participants reported a lack of time as a barrier to PA. Some participants stated that because they are busy most of the day, they prefer to rest when they have free time instead of undertaking PA:

*I do not do physical activity because I am very busy at work, so I think that I deserve to rest at home and not move (Latifa, F, 60 Y old, inactive).*

However, the Imam interviewed explained that a lack of time is not a real barrier for retired older adults; he suggested that they have plenty of free time, but they do not know how to use it efficiently:

*Another thing, most older adults have a huge amount of leisure time, but don’t know how to use this free time in a productive way. Many of us have poor time-management skills, which could affect our health in a negative way (Imam, M, 57 Y old, inactive).*

This suggests that it is not an actual lack of time *per se*, but the perception of a lack of time, possibly due to other factors, such as not prioritising PA or everyday forms of activity because they are inconvenient or culturally unacceptable.

Family responsibilities and work commitments (for the unretired) may also have an influence on the level of PA among older Kuwaitis. The majority of participants saw their responsibilities and role demands as a barrier to PA:

*Sometimes I feel that family commitments and house responsibilities may affect my activity level negatively (May, F, 60 Y old, group, inactive).*

In contrast, several participants thought that their responsibilities helped them to be active and increased their activity levels:

*I think what really helps me to be active presently are my responsibilities as a father and a husband, so I do all the necessary work like shopping for my family. This increases my activity level and keeps me busy all the time (Abdullah, M, 61 y old, inactive).*

Although Abdullah perceived himself as being inactive, he saw that attending to his family’s needs was an activity that helped him increase his PA levels, especially because he was sedentary all day at the office, and he did not do any kind of formal PA after work due to lack of time.

Many participants talked about how most Kuwaitis and Arabs in general prioritise their families’ needs above their own needs. Participants explained that culture plays an important role in this issue; Kuwaitis learn from a very young age that family comes first:

*Kuwaitis give [attention and care] to the people around them, but they are not ready to give to themselves. I think it is a cultural thing; we are raised to believe that giving is essential. I believe it is a nice thing. Giving is amazing, but you have to think about yourself as well (Sa’ad, M, 58 Y old, inactive).*

In these cases, older adults feel they have less free time and less chance to be physically active.

*Unfortunately, my responsibilities as a manager, father and husband do not allow me to take time out for myself. My family is a priority to me, so I give them time. This is more important to me than giving time to myself (Ahmad, M, 58 Y old, inactive).*

Some participants stated that refusing to offer help to family members when asked was usually regarded as a selfish attitude.

*When the children are busy and ask her to help take care of the grandchildren, I do not think it is nice to say, ‘No. I cannot’ (Sakina, F, 57 Y old, active).*

On the other hand, some participants saw their family responsibilities as a motivator for PA. People with this view felt that what they were doing for their families was part of their daily PA. In this case, helping family members with their needs increased the chances for older adults to be physically active. Taking care of grandchildren, for example, helped strengthen their relationships with them and increased their PA at the same time.

*At home, I think my children encourage me to be active by meeting their needs and helping them to complete their tasks, so I have to be active (Noura, F, 59 Y old, group, active).*

Family responsibilities, work commitments and time influenced older Kuwaiti adults’ PA in different ways.

# Older Kuwaiti Peoples’ Attitudes to Physical Activity

Data analysis showed that the sub-theme of older Kuwaiti people’s attitudes towards PA can be explained in relation to the acceptance of and adaptation to ageing, sedentary lifestyle as reward, activity as punishment and fear of falling.

## Ageing: Acceptance and Adaptation

Findings from the interviews showed that a small number of participants believed that older adults are physically active in Kuwait. The types of examples given in the interviews showed that PA was defined as unstructured activities, such as housework and work related to PA. Some participants perceived themselves to be independent and physically active in their older age, because they were still undertaking the activities of daily living. For example, Areej, a young female participant and the daughter of Muneera, an active older adult, believed that older adults in Kuwait carry out their daily activities independently, so she categorised them as physically active; she added that what helped them be active and independent was having good health without any medical issues.

*I think people aged 50 years old and above are physically active in Kuwait if they are healthy and do not have medical problems. By active I do not mean doing sports. No, I mean they are independent in their daily living and do all their activities independently (Areej, F, 30 Y old, active).*

Areej is receiving continuous help from her mother, as they both stated in their interviews. Because Areej is dependent on her mother for some activities, she may perceive her mother as active and independent. Similar to Areej, one physically active female participant expressed similar views on older adults being physically active with age, but more in terms of perceiving retirement as the best decision she had made in her life, because she felt that she had more time for herself and that she could enjoy her life more, whereas in the past she was busy and unable to enjoy what she was doing at the time.

*For me, my routine is the same even during the weekends… and I don’t feel bored. Since my retirement, I feel that I have more freedom, I have more time for myself. I am not rushing like a maniac anymore. Retirement is the best thing I have ever done (Sawsan, F, 66 Y old, group, active).*

A small number of participants compared PA levels between younger and older adults in Kuwait. They thought that older adults were more active than younger adults because they are more prone to disease compared to younger adults, and for this reason, they are undertaking PA to prevent or treat chronic diseases, while younger adults do not feel the same threat. In this case, the older adults adopted formal PA to tackle the physiological changes of ageing, such as loss of muscle strength and flexibility; they accepted the idea that their bodies were changing, but they believed they could manipulate the ageing process and slow it down by being more physically active compared to when they were younger. An example of this view is presented below; Haya, an active female, is a retired PE teacher who is proud that she has not missed a day in the gym since her retirement:

*I think in Kuwait, based on everyone around me, people give more attention to physical activity when they get older. They want to have nice body shapes and tone their muscles, so they exercise. I believe that older adults are more active than young people. I am more active than my daughters (Haya, F, 65 Y old, active).*

A similar view was illustrated by Areej (active younger adult), who believes that people tend to become more physically active as they get older:

*I think when we are young, we have good flexibility and strength naturally, so we may not think about physical activity, while, when we got older and start to lose some of the flexibility and strength, we start thinking about physical activity as a solution to this problem (Areej, F, 30 Y old, active).*

By comparison, the majority of the participants in this study believed that the physical abilities of older adults decreased with age; they believed that this is because of the normal ageing process, and the level of PA should and will decrease with age. As a result, they described most older adults in Kuwait as inactive. Hussain, an active older male, commented:

*I also never run, because I would get tired if I did, which is normal. As the old saying goes, “age has rules” (Hussain, M, 70 Y old, active).*

Within the reflection on physical inactivity among older adults, participants explained that they are now not able to do the same activities they did when they were younger. For example, male participants talked about how they are not able to play football anymore because they do not feel fit enough. This reduction in the ability to undertake PA was seen as a normal ageing process and expected for people their age. Some female participants also expressed similar views on how their physical abilities decreased when they got older, although, the examples they gave were mostly unstructured physical activities, such as housework, as most women with this view had not done structured exercise in the past, when they were younger. Therefore, they accepted that a reduction in physical ability is part of the normal ageing process. To accommodate their age, older adults adapted their activities; for example, males explained how they switched from playing football to less demanding PA, such as walking. Females also tried to avoid some activities, and in some cases, replaced them with less demanding ones. Shareefa, an inactive female, explained:

*We do not have strength and energy like when we were younger (Shareefa, F, 73 Y old, group, inactive).*

Many participants elaborated on early retirement (retiring at a younger age) in Kuwait and linked it with physical inactivity among older adults; according to them, retirement was associated with reduction in the work-related PA and thus led to inactivity as explained by the quotes below:

*I think older adults are not active in Kuwait, but I do not think that it is their fault. When we go abroad, we see older adults still working, while in Kuwait people retire very early (May, F, 60 Y old, group, inactive).*

*After retirement, I have not been doing any activity (Zahra, F, 70 Y old, group, inactive).*

Many participants described themselves as more isolated, as well as bored by their routine and feeling lazy after retirement. They had internalised the culture, because it is a societal expectation to do less PA after retirement in Kuwait. They accepted the effects of this norm on them and did not show any intention of changing, while at the same time blaming themselves, rather than the culture or society in which they lived, for these feelings.

Some participants believed that cultural perceptions and expectations of older adults play an important role in reducing PA levels among older adults in Kuwait. A tension between cultural norms and the beliefs, desires and wishes of older adults was observed in the findings. For example, some participants believed that although they were retired, they still had the ability and the desire to work and contribute to society but that the cultural expectations of older adults did not give them any chances; this could lead to frustration and isolation. In particular, participants identified the Kuwaiti/Arabic cultural perception of the ageing population as a barrier to older adults’ PAs. There was always the view that older Kuwaiti adults have lower physical abilities than younger adults just because they are older. Some participants believed older adults could not do any type of PA because no type would suit them because of their age. They also compared attitudes about older adults in Arab countries and Western countries. Several participants expressed this comparison by saying that, whereas in Western countries, it is believed that ‘life starts after 60’, in ‘our countries’, people believe that ‘life ends after 50’:

*Unfortunately, our society believes that an older adult can’t do anything, and this is wrong. As long as he’s not doing something wrong or against god’s instructions, an older adult is free and able to do everything (Saleh, M, 72 Y old, active).*

Several participants adapted to their reduced physical abilities brought about by ageing by undertaking less demanding activities, such as walking. For example, Hussain, an inactive male, believed that older adults should do activities according to their abilities:

*I used to play football when I was younger, and I was very good at it. But now, if you asked me to play football, I would not be able to achieve what I did in the past. My kick is different, the way I run is different; I can’t do what I was able to do in the past…we have to consider our age in everything, because people of my age are not able to do the things youth or children can do (Hussain, M, 70 Y old, active).*

He also believed that doing more than light PA could harm older adults instead of doing good. He perceived walking as a suitable PA for older people while running and football were not suitable:

*I feel walking is more than enough for me. There could be negative effects if I increased my activity to more than walking. Too much physical activity is the same as overeating, in that when you eat too much, you hurt your body and you will be unable to breathe (Hussain, M, 70 Y old, inactive).*

Another example of adapting types of PA as one is getting older is presented in the comment below. Sa’ad believed that there are certain forms of PA for certain age groups, like football for younger people and walking and swimming for older people.

*I think the activities that the youth engage in are fun. When they play football for an hour and a half, they forget about everything and just enjoy the moment. Meanwhile, in my opinion, the walking that we do as older adults is not fun. I used to play football regularly with my friends, but we quit many years ago as we felt that our bodies were not helping us anymore; we started getting tired easily. We quit the sports that we used to enjoy, and lately, the only exercises that we do are walking or swimming (Sa’ad, M, 58 Y old, inactive).*

Sa’ad compared how his friends and he enjoyed physical activities when they were younger, such as football; now they are older, they have fewer options and do not enjoy them as much.

He felt that some forms of PA were more fun than others. He justifies his preference in the comment below:

*Sports can break any boundaries and bring people closer together; people get to know each other more and have better communication (Sa’ad, M, 58 Y old, inactive).*

He preferred team sports for their social aspect when people socialise and have fun as a group; this could motivate people to adhere to more PA.

Beside walking, swimming was another preferred form of PA among older adults in the study; however, it is not as easy as walking as it requires access to a pool. Swimming pools in gyms attracted many of the participants; they liked them because they could be active without experiencing the pain that sometimes occurs with weight-bearing exercises:

*I love swimming although we usually need a subscription to a pool to be able to swim, as I do not have a pool at home (Sa’ad, M, 58 Y old, inactive).*

In conclusion, the majority of participants believed that PA should decrease with age, and for this reason, they labelled older Kuwaiti adults as inactive. Cultural perceptions towards ageing in Kuwait encouraged older adults to be physically inactive. In contrast, a small number of participants perceived older Kuwaiti adults as active and sometimes more active than younger people; because older adults have higher risks for health problems, they adopt PA to reduce the risks. Social and environmental factors play an important role in improving or reducing PA among older adults.

## Sedentary Lifestyle as a Reward; Activity as a Punishment

Several participants stated they preferred rest to any PA. This was true among both the retired and older working adults. They felt they deserved to relax during their free time. Some participants felt that people chose to be inactive when they were not working because they felt that they had worked very hard and had given so much; leisure time was thus a time to relax. This meant that being sedentary was seen as an advantage and that they were equating relaxing with being sedentary. Dana’s comment is a good example:

*What weekend? All our days are weekends, the retired people. My activity level increases on family gathering days, as I am usually busy preparing food for my children. On other days, however, I prefer to relax and do nothing. I have been retired for 27 years. In the past, I was always busy, and I would get very tired by the end of the day. Now, as I am getting older, I think my current pains are related to the hard work I did in the past (Dana, F, 68 Y old, inactive).*

Dana is a physically inactive female who was a teacher before retirement. She talked in detail about how very busy she was in the past with her work and family. She was equating busyness with PA. She described her responsibilities as tiring. Moreover, she believed that the hard work she did when she was younger was the reason for her current ill-health, such as musculoskeletal pains. She related pain to movement and for this reason preferred and chose to be sedentary in order to relax. Muneera, a physically active female, had a similar view:

*For years I was extremely busy, but now I think I have reached a phase where I need to rest after all the hard work I have done in the past…I think I have had enough of previous life pressures and now deserve to have a rest…I think I need to have a break (Muneera, F, 52 Y old, active).*

The focus of retirement for many Kuwaitis is rest and continuing or taking up PA is not high on their agenda. Muneera perceived rest as a reward for her hard work. Both Dana and Muneera referred to work-related PA, such as household chores and childcare, as tiring and perceived them to have negative effects on the body and health. For this reason, they no longer engaged in such activities. This perception could be one of the reasons leading to dependence on others. Dana was mostly affected by the care of her grown-up children, while Muneera was dependent on servants to perform housework (Section 8.1.3). This also suggests a lack of awareness about the benefits of PA in supporting health as a barrier to adopting different types of PA. Misconceptions about the effects of PA and inactivity on older people were also found in the data. For example, Dana does not perform any type of PA and in the next comment, she seems to normalise a culture of sedentariness in older adulthood. For her and several other inactive participants, physical inactivity was perceived as a normal state of affairs among older adults, while PA was perceived as abnormal behaviour that had negative consequences for an older adult’s body:

*I see them, and they are usually in pain after exercising. It is normal to experience pain after exercising since we are older adults and our bodies have changed. However, I do not want to feel these pains, and that’s why I avoid exercises and even prolonged walking... I want to live for my children, to be with them for the longest time possible. This is my aim in life (Dana, F, 68 Y old, inactive).*

Laziness, a lack of motivation and a lack of will to do PA were also reported by the majority of participants in this study as barriers to adopting an active lifestyle among older adults. Some participants believed that laziness was the main barrier to PA among older adults in Kuwait and that other barriers usually were just excuses. The following comment is an example:

*Laziness, I mean you are used to doing nothing and spending the day watching TV. I notice lazy people are always making excuses to not be active because they do not want to do it. They are only excuses, not real barriers (Zahra, F, 70 Y old, group, inactive).*

Zahra labelled inactive people as ‘lazy’. Many other participants also used the term ‘laziness’ in reference to themselves or other inactive people in their surroundings. This term is infused with a very negative personal judgement. A term like ‘laziness’ is also indicative of a victim-blaming stance, in which the responsibility for people’s health and related behaviours is placed in their own hands, and the wider cultural context is absolved of responsibility. This is usually more pervasive in individualistic societies, such as the UK and USA, but was also noted among inactive participants in the current study. Sawsan also talked about laziness:

*The main reason for not being active is laziness, and it is the only reason in my opinion. People simply are used to doing nothing (Sawsan, F, 66 Y old, group, active).*

This view sees physical inactivity as usually a personal choice, not something forced on older adults. Being described as ‘lazy’ means that the person is able to do the PA but chooses not to. In this view, an inactive person usually lacks the necessary motivation to make the effort (physical) to achieve a goal (e.g. improved health or better fitness), although in reality lack of motivation to do PA is not as simple as that; instead, it could be a result of many complex factors such as cultural expectations as discussed earlier. Lack of motivation could be a result of a lack of awareness of the importance of PA in older adults’ lives and how it helps improve QOL. Lack of energy is another possible explanation that could lead to avoiding PA.

In summary, many participants equated relaxing with being sedentary and perceived rest as a reward for the hard work they had done in the past. Inactive participants usually tried to normalise the culture of physical inactivity in older adulthood. In addition, laziness was an important barrier, mentioned many times by participants; lack of motivation, lack of interest and lack of will have an impact on beliefs about laziness.

## Fear of Falling and Risk-Averse Society

Normal ageing comes with physical changes, and the reduction in physical ability that accompanies the ageing process was one of the reasons for developing a fear of falling among older adults. Having a medical condition also increased the fear of harming oneself when undertaking PA.

*Therefore, I felt a little worried, and to be honest, I think I developed a fear of hurting myself. I think being diabetic and hypertensive has also increased my fears of doing physical activity. That’s why I avoid physical activity—to avoid hurting myself or worsening my condition (Ahmad, M, 58 Y old, inactive).*

A fear of falling can develop as a result of hearing distressing stories about other people falling.

*I think the fear could be a barrier. I’m too afraid, even when I’m in the bathroom washing for prayer. I do not lift my foot to the sink to wash it because I am afraid of falling, like the stories I hear about people. My body has changed as I’ve aged; it is not helping me. I feel tired if I move too much (Manal, F, 59 Y old, inactive).*

People around older adults, such as family and friends, can encourage fear by continually sending warning messages that movement may harm them, and they should not do anything; others will do it for them. They think that warning them will protect them from harm such as falling. This suggests a lack of awareness regarding PA and its role in health not only for older adults but also for the people around them.

*Another reason could be a fear of falling…, some people have a phobia that if they move, they will fall, especially since they hear all the time that falling in this age is dangerous; for example, they could have a fractured hip (Sakina, F, 57 Y old, active).*

On the other hand, fear and worry about developing disabilities in the future motivates some older adults to be more physically active to prevent disabilities or at least delay them. In some cases, if older adults believe that PA is a preventive measure for future disability, they may be motivated to adopt a more active lifestyle and *vice versa*. Therefore, some people start PAs because they are getting older.

*I have degenerative changes in my joints, and I have been advised to minimise stair use, but I am against this as your stiffness and weakness increases if you reduce your movement. I am thinking about the future. I am 52 now, but what will happen to me when I reach 60 if I am inactive? I will be disabled. Now, I am using a chair when praying because I can’t bend my knees, although I do exercises (Muneera, F, 52 Y old, active).*

Fears can motivate or hinder PA behaviour among older adults. These fears are directly affected by awareness regarding the role of PA in older adults’ health.

# 8.3 Perceptions of Work/Versus Leisure Physical Activity

The sub-theme of work versus leisure PA involved comparisons between PA in the past and present, the influence of climate and physical environment on PA levels and perceptions of gyms as formal PA facilities for older adults.

## Cultural Perceptions to Physical Activity Over Time

As discussed in Section 2.3, the dependence on oil income in recent years has resulted in many changes in the lifestyle of the Kuwaiti population, such as their dependence on domestic servants. This economic shift has also affected the type of PA performed by Kuwaitis, how they perceived PA and their preferences regarding PA. Many of the older participants in the current study witnessed the eras before and after oil dependence, and they discussed how increasing affluence and development affected PA levels. For example, Shareefa commented:

*In the past I was slim because we were active. We would sew, iron, do all the housework, and take care of the children without any housemaid!! We are continuously moving the whole day. But nowadays we are always sitting, and the housemaids do everything for us...We do far fewer activities than before (Shareefa, F, 73 Y old, group, inactive).*

Shareefa believed that the level of work-related PA was much higher in the past than in the present. According to her, Kuwaiti women nowadays do not do any work-related PA, which she defined as housework, and this has had a negative effect on some aspects of their health, such as obesity. Similarly, men’s work-related PA has also changed over time. Hussain compared life in the past and the present in Kuwait and said that in the past, physical work was common for men. They used to do labour-intensive jobs for a living, as well as other activities at home, such as maintaining the garden:

*In the past, our circumstances forced us to be active because the luxurious life we are living today was not available back then. We had to work hard to live and make money. But now, thanks be to God, money comes to us and we don’t have to do anything [labour physically] (Hussain, M, 70 Y old, active).*

Both Shareefa and Hussain defined PA in the past as work related, so it was perceived as a duty that they had to fulfil rather than a choice. In his quotation, Hussain appeared pleased that the level of work-related PA decreased after the economic revolution, but at the same time, he described himself as physically active at the moment regardless of the absence of work-related PA in his life. This suggests that he perceived the definition of PA as having changed. In the past, PA was perceived as work related or as commuting PA, while participants nowadays perceived themselves as physically active or inactive on the basis of formal PA, such as walking and taking regular exercise. Similarly, female participants also perceived formal PA as a suitable replacement for work-related PA, as illustrated by Asma’s comment:

*I think in our culture at the current time, with all the dependence on servants, housework is not an option for physical activity. I think adopting physical activity as a leisure activity could be the best option for Kuwaitis (Asma, F, 32 Y old, inactive).*

Due to the presence of help with the household chores from servants, for example, housework is not being seen as potential PA or something Kuwaitis can do to keep active. Instead, Asma suggested other types of ‘formal’ PA, such as sports, which can be performed to replace housework activities. Similarly, Zainah, an older adult female, commented:

*I did not mention housework as physical activity although it is a form of exercise; however, you know our culture—we have help in the house, so we do not do much housework. Still, this does not mean that we cannot do any housework; we can go to the kitchen, bake a cake or any simple dish and at minimum tidy up the bedroom (Zainah, F, 60 Y old, active).*

Zainah did not include housework as a type of PA when she was asked to describe the meaning of PA to her. She justified the exclusion of housework from her definition of PA by the cultural changes in lifestyle that diminished the need for housework with the availability of domestic helpers. However, she added that although performing housework is not necessary, simple household chores can be performed, if preferred, as optional PA.

Economic affluence has also increased the dependence on cars for transportation. Most of the participants agreed that car dependence also has a negative effect on the level of PA. Kuwaitis use cars even for short-distance travel. Several factors may affect this dependence on cars, such as the hot weather in Kuwait, which may make travelling from one place to another difficult without a car (discussed later in Section 8.3.2). Ahmad’s comment below discussed the issue of cars:

*Maybe we should try to depend less on cars. When I was in the UK, I was going to Friday prayer at a mosque with my friend who lives there. I told him, ‘Let’s go by car’, and he replied, ‘No need for a car; the mosque is only 15 minutes walk’. He was trying to increase his activity by walking more steps instead of using a car. However, we have to keep in mind that the weather in the UK is much different compared to Kuwait (Ahmad, M, 58 Y old, inactive).*

Ahmad described himself as physically inactive, and he acknowledged depending on cars as a barrier to PA. Ahmad perceived the weather as the primary reason for Kuwaitis’ car dependence, making them unable to increase their PA level even if they wanted to. By contrast, active participants perceived car dependence differently, as shown by this comment from Muneera:

*I think the main reason for our inactivity is the result of cars. In Kuwait, especially, you use a car even to go to a very nearby shop and never walk. …I think when you do not have a car, you are forced to walk and be more active (Muneera, F, 52 Y old, active).*

Muneera defended her view by reminiscing about life before the culture of car dependence:

*I remember my mother during the sixties—I was maybe 5 years old. She would go everywhere walking, and she never complained of hot weather. I remember my grandmother in the past also walking to the shops in Qibla (قبلة). They never used cars. A lot of people did not have a car at that time (Muneera, F, 52 Y old, active).*

Muneera explained how, in the past, Kuwaitis were active when commuting, either because they simply did not own a car or because they preferred being active, regardless of the weather, meaning that factors other than the weather and the culture affected Kuwaitis’ perceptions of PA. Another shift in the perception of PA among Kuwaitis was also described by Modhi:

*When you do not use your car and decide to walk, you will hear 100 horns; everybody, even people you do not know, will offer to give you a lift, as they think you should not go walking. I think these traditions are also barriers to physical activity, as people will annoy you here, while in other countries, no one is interfering with what you are doing (Modhi, F, 57 Y old, inactive).*

Participants referred to the walking culture in Kuwait. They said that, in Kuwaiti culture, walking at the public walking track (Figure 8-2 shows an example of a public walking track in Kuwait) is totally acceptable for some people while walking in the street or to the supermarket is not acceptable. Thus, while walking as a leisure activity is acceptable to some, societal pressure is towards it being performed in specific places, such as the public walking track, gardens, parks and malls; the street is not an option in this case, and walking in the street was regarded as something strange. This could be a barrier in particular for people who care about the proximity of the walking facility. If they want to walk, they would have to go to the walking track by car or they would not be able to walk at all. This is also a barrier for older adults who do not like going to the walking track or who do not have a big courtyard to walk in and who feel that the best place for them is the street. The strong societal pressure to use cars, with walking seen as something unpleasant or negative, affected PA levels negatively. For example, the social communities in which participants lived was related to a feeling of embarrassment. Mona, an active female participant, explained:

*Another thing is feeling embarrassed,* *for example, sometimes I say to myself “No, I can’t walk to the supermarket. What people will think about me?” People may think that I do not have a chauffeur or that my children do not care about me because they let me walk to supermarket, and so on (Mona, F, 52 Y old, active).*

Mona believed that when she walked to a nearby shop, she would be judged by others as not having good family support.Cultural norms and expectations thus influenced the feeling of embarrassment as people cannot walk along the road even if they want to because others will not accept it.



Figure 8-2 A walking track in one of Kuwait's neighbourhoods

In summary, perceptions of Kuwaiti society towards PA have changed over time (Table 8-2). Due to the nature of Kuwaiti life in the past, PA was defined as work activities, such as housework, physical labour or commuting, and it was a part of Kuwaitis’ daily lives rather than a choice. For this reason, Kuwaitis were perceived as being physically active in that era regardless of dress codes, modesty or climate, which are now perceived as barriers to PA among Kuwaitis. By contrast, the economic revolution has cut the need for work- and commuting-related PA in Kuwait. People now need to be motivated to adopt PA. People prefer to engage in PA for enjoyment and leisure. Thus, perceived choice and pleasure are the key drivers of PA among adults in Kuwait.

Table 8-2 Comparison of PA in Kuwait in the past and the present

|  |  |  |
| --- | --- | --- |
|  | Past | Present |
| Definition of PA (as perceived by older adults) | Work related such as housework for women and physical labour for men  Commuting PA | Leisure PA such as walking (in a designated PA area)  Could include housework or walking but only if preferred (and walking is not acceptable nor preferable in many cases) |
| Perceived as | Duty | Choice |
| Effect of cultural norms and physical environment | People were active regardless of cultural and environmental factors | Culture and environment are perceived as barriers to PA |

## Climate and Physical Environment in Kuwait

All participants perceived the weather in Kuwait as one of the major barriers to PA. The long, hot and humid summer in Kuwait limits outdoor PA. Although walking was mentioned many times as a preferred PA among older Kuwaitis, they usually avoided it because of the hot weather. Some participants thought that walking outdoors during the summer was unbearable. The weather not only limits outdoor PA but also affects exercise options negatively, because cars are used for commuting even for short-distance travel to avoid the heat. Hot weather reduces lifestyle PA because people usually prefer to park their cars near the entrance to buildings in order to avoid walking under the hot sun. This minimises the daily number of steps taken during daily activities, as explained by Areej:

*The weather not only prevents us from going outside, but also affects us later in the day and reduces our energy. This is something only people living in Kuwait understand. We have to park in enclosed parking near the places we want to go, so we are not walking due to the hot weather (Areej, F, 30 Y old, active).*

Other lifestyle PAs that are usually performed outdoors, such as gardening, were also perceived to be affected negatively by hot weather. For example, Muneera commented:

*The only thing I do for my garden is watering the plants, and I only do this in winter. During the hot summer, I hire someone to do it for me (Muneera, F, 52 Y old, active).*

Muneera’s perception of the weather as a barrier to her gardening activity contradicts her earlier comment in Section 8.3.1 regarding ambulatory PA, where she did not perceive weather to be a real barrier to PA, observing that people were physically active in the past even though they were living in the same climate as the people of today. The contradiction in Muneera’s comments has several possible explanations. The first, as mentioned by her and other participants (Section 8.3.1), was perceived choice. According to this explanation, the effect of the weather on PA is seen as an excuse, not a real barrier. For example, Muneera had the choice of hiring a gardener, and she perceived it as an easier choice, which is why she chose it, whereas the gardener, who is not Kuwaiti (usually Asian – Indian, Pakistani, Persian or Afghani), is doing the activity (gardening) for a living; thus, his choices are limited and so his perception of the barriers (including weather) is different. In Kuwait, there is an old saying that Kuwaitis really love and to which they adhere: ‘Put your money under the sun and sit under the shade.’ This old saying encourages opting for the easier alternative as well as dependence on others, which was found to be a barrier to PA in Kuwait. The second possible explanation for the contradiction in Muneera’s comments is that the weather today is worse than it was in the past as a result of pollution, the construction of new modern cities and roads, and the lack of gardens and parks in these cities, leading to a rise in temperatures in Kuwait; for this reason, people were able to tolerate outdoor PA in the past but feel unable to do it now.

The weather also limits the time when outdoor PA can be performed to the early morning or after sunset. This may have a negative effect on activity level because time flexibility is minimised, as expressed in this comment:

*In Kuwait, with the heat, we can only walk after dawn prayer, as it is very difficult to walk outdoors during the middle of the day and the afternoon” (Saleh, M, 72 Y old, active).*

In recent years, Kuwaitis have travelled abroad a lot, mainly in the summer. Most of the participants mentioned that they are usually active when they travel abroad, and they justify this by the weather because the weather is usually cooler and more pleasant in the countries they visit than it is in Kuwait, and this usually encourages them to walk outdoors and use public transport instead of cars. The majority also think that the difference in the climate between Kuwait and other countries is one of the main reasons that older Kuwaitis generally have a low level of PA compared to older adults living in cooler climates (none of the participants compared themselves with people living in a hot climate similar to that of Kuwait). Mona’s comment exemplifies this view:

*When I go to London every year, I see the Kuwaiti tourists being very active there. They run to catch buses while lifting several shopping bags. It is something that you do not see in Kuwait. So, we are active when we travel. I do not know why we stop walking when we come back home, maybe because of the weather?! (Mona, F, 52 Y old, active).*

In addition to the perceived difference in PA levels between Kuwaitis living in Kuwait and people living in cooler climates and the perceived improvement in Kuwaitis’ PA level when abroad, a discrepancy was noted between Kuwaitis and non-Kuwaitis living in the same harsh Kuwaiti environment, with non-Kuwaitis being perceived as more physically active and engaging in more outdoor leisure PA than Kuwaitis. A good example is the following comment from a physician:

*I went to the beach once and noticed that people at the beach were non-Kuwaiti. I had the chance to chat with someone there, and he said, “It is very strange that you have a nice beach in Kuwait, but I never see Kuwaitis swim! (Physician, M, 50 Y old, active).*

This implies that non-Kuwaitis were not affected negatively by the weather, unlike Kuwaitis. This may suggest that factors other than the weather prevent Kuwaitis from adopting outdoor PA but do not affect non-Kuwaitis who live in the same physical environment. Kuwaiti culture has to be a factor in this difference (e.g. Kuwaiti dependence on cars and maids) as discussed previously. An example of this discrepancy between Kuwaitis and non-Kuwaitis may be that the latter perceive PA as a possible activity performed in family leisure time, with the result that they engage in more leisure-time PA than Kuwaitis do, while social life in Kuwait is sedentary focused and PA is not seen as an option in leisure time (as discussed previously in Section 8.1.4). Another possible difference between Kuwaitis and non-Kuwaitis may be possible differences in living arrangements. The majority of Kuwaitis live in villas that can accommodate big gatherings of families and friends, and many Kuwaiti families also have private chalets and farms where they can gather and which they usually choose over public places. People who do not own their leisure places usually prefer to rent a private one for their weekly family leisure time, rather than use public places such as a beach or park. By contrast, the majority of non-Kuwaitis live in apartments that are small and do not accommodate their social gatherings. Moreover, they do not own private properties, such as farms and chalets, and renting one could be beyond the budgets of most non-Kuwaitis, so non-Kuwaitis may be limited to going outdoors to spend their leisure time regardless of the weather, whereas Kuwaitis have more options and so choose to avoid the outdoors when the weather is hot. Similar to the conclusion of the previous Section (8.3.1), perceived choice is a crucial factor affecting PA.

Apart from the climate, participants discussed the physical environment in Kuwait’s streets. Inactive participants said that the poor quality of the pavements in Kuwait played a major role in low PA levels. Besides the cultural barrier to walking in the street, people find it difficult to walk on the pavements because the levels differ in front of each house and because they are generally used as parking spaces for cars (Figure 8-3 is an example). Thus, the streets were seen as unsuitable for walking and as a barrier to PA, especially when the public walking track is not an option. The poor walking infrastructure is contributing to the culture of not walking, and in turn the culture is also influencing the infrastructure:

*I think the design of our houses negatively affects activity level. I mean, if our houses were similar to other countries and had levelled pavement and nice weather, we would be as active as the people in those other countries. But in our current situation, we need a car even if we are going to a nearby supermarket (Modhi, F, 57 Y old, inactive).*



Figure 8-3 An example of a pavement used as parking space for cars in a neighbourhood in Kuwait

In conclusion, the climate and physical environment in Kuwait have a negative influence on the level of PA among Kuwaitis, but Kuwaitis’ PA level also affects and has been affected by other factors, such as culture and norms.

## Use of Formal Facilities such as Gyms

A few participants stated that there are sufficient numbers of gyms in Kuwait that suit the needs of older adults. For example, in an interview with a physiotherapist, she talked about the increasing number of facilities and how they are now being attended by older women:

*To be fair, we have a lot of gym facilities now in Kuwait; In the past, gyms were not available in all areas, so they were a little bit harder to reach, but now gyms are everywhere, so are very convenient. In my gym, I see older women, and this is a nice thing (Physiotherapist, F, 31 Y old, active).*

However, the majority of participants in this study thought that the existing gyms in Kuwait did not suit them, and several barriers to gym participation were mentioned. Although some participants stated they had subscribed to gyms in the past, many participants agreed that gyms are not preferred facilities for PA:

*In Kuwait, gyms are available everywhere, but they do not have programmes that suit older adults. This is why most gym attendants are youths (Physician, M, 50 Y old, active).*

Barriers to attending the gyms included making a commitment, being obliged to go to a gym at a certain time or doing certain exercises. Participants felt that gym subscriptions were inflexible, and they did not meet the needs of older adults.

*I do not like the routine. I mean, I would not like the commitment of having to go to the gym daily if I were to join one (Dana, F, 68 Y old, inactive).*

For some participants, the presence of younger people was a barrier to attending gyms. They thought that the younger people were noisy, or in some cases, they felt it affected their confidence when they compared their abilities to those of the youth, as illustrated by Waleed and Hajar’s comments below:

*When I go to the gym, I see that all the members are very young. They are in their 20s, while I am the only old man. I did not feel comfortable, so I dropped it (Waleed, M, 64 Y old, group, inactive).*

*To be honest, I did not like gyms. During the holidays they mix us with younger people, and children are very noisy and annoying (Hajar, F, 60 Y old, group, active).*

One of the most frequently mentioned barriers to gym subscriptions was a lack of proper training and supervision. Participants felt they needed supervision and feedback continually during training to avoid injuries, especially in classes that require high speed and pace. Regardless of the availability of financial resources, no participants thought of getting a personal trainer, although personal trainers are available in Kuwait.

*That is why we need a coach. If you do not have a coach, you can’t do any exercise, as it could be harmful. So coach supervision, or at least a reference that can teach me how to do exercises, is a must…I am afraid of hurting myself, especially since some exercises do not suit our age (Modhi, F, 57 Y old, inactive).*

Another barrier to attending gyms that affected participants was the high subscription fees. This is especially true for women’s gyms as they are more expensive than men’s gyms. Regardless of affluence, many people are not prepared to pay a large amount of money for a gym, which suggests an issue of priorities, especially when they do not attend the gym regularly. Participants said they do not understand the reason behind this gender discrepancy or inequality at gyms.

*I think that in Kuwait, the subscription fees for the female gyms are very high compared to [those for the] male gyms. I think this could be a barrier to adopting physical activity (Latifa, F, 60 Y old, inactive).*

The inconvenience of the location of the PA facility was also a barrier to PA. Many participants did not want to drive to walking tracks or gyms; they preferred it if the facility was within walking distance.

*I hear about good ladies’ gyms in Kuwait but have never subscribed as they are far from my house. If I had a gym near my house with a good swimming pool, I might attend it (Muneera, F, 52 Y old, active).*

For most participants in the study, the gyms in Kuwait currently do not attract older adults because they do not suit their needs. Barriers to gyms were mixed age groups, fear of injury, inadequate supervision, high subscription fees and the inconvenience of the facility’s location.

# 8.4 Lack of Policies to Improve PA

Some participants believed that younger generations have a greater awareness of and interest in physical activities than older adults, a better understanding of the importance of PA in health and perceive physical activities differently from older adults.

*I think most older adults in Kuwait are inactive. I think young people are aware of the importance of physical activity, but older adults do not have this awareness (Asma, F, 32 Y old).*

Several participants believed that obesity and chronic diseases such as heart disease or asthma affected older peoples’ activity levels negatively. This misinformation, which usually comes from people around the older adults, such as family, friends and health professionals, suggests a need for increased awareness about the benefits of PA:

*When you have diabetes, you always feel a lack of energy...I usually feel dizzy after meals. When you have hypertension, you cannot do many activities. There are so many activities that do not suit hypertensive people (Ahmad, M, 58 Y old, inactive).*

Most participants believed that pain affected their PA levels negatively.

*For me, my legs and back do not help me. I have osteoarthritis, and I had a car accident a few years ago and had fractures in my spine. I love to work at home; I love cooking, cleaning and taking care of my kitchen, but my back pain does not help me at all (Hessa, F, 62 Y old, group, inactive).*

A young female participant explained that musculoskeletal pain is common among inactive people; and they hurt after any movement. When these inactive people have medical problems, they believe that PA will increase their pain. This goes back to the assumptions people are making about the source of their pain and what effect PA will have on them.

*People who are inactive usually complain about knee and joint pain. So I think when people have medical problems, they tend to think that activity may worsen their symptoms, so they avoid it (Sarah, F, 31 Y old, inactive).*

Misinformation regarding the relationship between PA and health conditions was noted to have a negative effect on PA level among older adults.

In Kuwait, a planned promotional programme is lacking; as mentioned by the physician, there are no programmes that target older adults as a group.

*Presently, we do not have proper efforts to promote physical activity. The only things we see in Kuwait now are some signs at the public walking track about health; we also see some advertising on TV about health; that’s it (Physician, M, 50 Y old).*

Several participants talked about the absence of a governmental role in improving PA levels among older adults in Kuwait. Participants also mentioned that existing promotional initiatives are very simple and come mostly from the private sector.

*The co-operative society in my area sponsors the track and provides drinking water and motivational signs, so there is encouragement but not from the government (Manal, F, 59 Y old).*

A lack of awareness about the importance of PA in older adults’ health and how it can be performed to gain the desired benefits were barriers to PA among participants in the current study. A lack of policies to promote healthy lifestyles was also reported as a barrier in Kuwait.

# 8.5 Chapter Summary

Physical activity behaviour is complex, and many barriers to PA in Kuwait have emerged from the data. Some barriers affect Kuwaiti people in general (such as weather), while others affect older Kuwaiti people specifically (such as fear of falling). Kuwaitis’ attitudes towards PA appears to be influenced by culture. Findings showed culture to be a key driver behind not only PA behaviour but also attitudes and beliefs about activity at both individual and group levels. Culture influences not only PA practices but also the way people think about them.

The data in this chapter has demonstrated that PA declines with age in Kuwait and that Kuwaiti culture encourages less PA in older age. Many barriers to older participants in being active involved the influence of other people around them and strong cultural, societal norms around ‘supporting’ older people, misunderstandings about the benefits of doing PA and a lack of programmes and facilities to meet their needs. This was coupled with a challenging environment and lack of top-down policy. The next chapter will discuss the influence of significant others on older adults’ PA.

# CHAPTER 9 - THE INFLUENCE OF SIGNIFICANT OTHERS ON OLDER ADULTS’ PHYSICAL ACTIVITY

This chapter discusses in detail the role of family, friends and health professionals in influencing older adults’ PA attitudes and behaviours. The chapter starts with the influence of the spouse, followed by the influence of other close family members. It then focuses more broadly on the influence of friends and healthcare professionals in the community.

# 9.1 Influences of Spouses on Being Active

Analysis of the data indicated that spouses had a strong influence on the PA level of their partner. This influence could be perceived as positive or negative and is explored in the following sub-themes: positive encouragement; mockery and negativity; and passive discouragement.

## 9.1.1 Positive Encouragement

Encouragement from a spouse was perceived to have a positive influence on people’s PA level:

*I think when a wife encourages her husband to be active and watch his body weight, he will definitely do it (Abdullah, M, 61 years old, inactive).*

However, it should be noted that this participant stated later in the interview that he was not referring to himself in the comment, as his wife does not provide any support to him.

Only one physically active participant, Haya, mentioned that her husband encouraged her to join a gym:

*My husband was very happy that I joined a gym “to reduce your non-stop nagging” [laugh]. (Haya, F, 65 years old, active).*

She perceived his attitude as supportive of her PA, although he appeared to be supporting her with the intention of keeping her out of the house daily to reduce conflicts with family members and not specifically because he wanted her to be physically active.

Some participants were selfishly motivated when encouraging a spouse to be more active, and this type of motivation was found to be gendered. This can be seen in Saleh’s comment:

*A person can go for a walk with his wife. And when she feels tired, so that she doesn’t feel she’s getting older, he can pretend to be tired himself and ask her to rest with him, rather than saying “Are you tired? Do you need to rest?”. Because when a wife doesn’t move, her husband will be most affected because she takes care of him (Saleh, M, 72 years old, active).*

Saleh simply wants his wife to be active so she can continue providing care for him. Similar to Haya’s husband, Saleh is encouraging his wife to be active because he is benefiting from it and not just because he wants her to be active. Saleh’s comment implies that he feels his physical abilities are better than his wife’s, and he thinks that showing empathy toward her will keep her physical activity directed toward him.

On the other hand, May, a retired female participant, was regularly encouraged by her husband to adopt a healthier lifestyle, but she never listened to him. She felt that her husband had the time for a healthy lifestyle while she did not as she had family responsibilities. So although they both were retired, she perceived him to have more time than her, which suggests differences in gender role and power in the spousal relationship. She stated later in the interview that she is not listening to his advice as she is not convinced by his lifestyle, which means that being surrounded by active people is not always enough to motivate older adults to adopt physical activity even when receiving encouragement from them.

*My husband has had a healthy lifestyle for many years. He eats only organic healthy food and does physical activity at the gym regularly. He encourages us [his family] to be like him, but we do not listen to him. He has plenty of free time, I do not (May, F, 60 Y old, inactive).*

Offering to do a PA together as an enjoyable activity was perceived as helpful in encouraging PA. An active female, Zainah, commented:

*My husband always encourages me to be active. He loves physical activity more than I do... When the weather gets better, he [my husband] always invites me to go walking with him (Zainah, F, 60 years old, active).*

Her husband is physically active and performs many physical activities every day, such as walking and swimming. Zainah perceived her husband’s invitations to join him in PA as a positive attitude that encouraged her to be more physically active by carrying out an enjoyable activity and spending time together. Sakina, another physically active female, has a similar view about her spouse:

*My husband always asks if I would like to go for a walk after the dawn prayer. Since he is still working, he likes to walk for half an hour each morning before work, but I always say no. I think it is too early and do not go with him, but he says this is the best time to walk (Sakina, F, 57 years old, active).*

Sakina perceived her husband’s regular invitations to join him for his morning walks as a form of positive support and encouragement. Unlike Zainah, Sakina always rejected going on walks with her husband, as his timing did not suit her. Although Sakina’s husband did not try to change his walking time to appeal to her, she still perceived his invitation as a form of positive support and excused his behaviour by saying that he has work commitments and cannot find another time. In both examples, women perceived their spouses’ invitations to share in a PA as positive encouragement that helps improve their PA whether it is done or not.

Moreover, Hussain, an active male, also believed that mutual support between him and his partner had an impact on their PA:

*Another example is when I ask my wife to accompany me when walking on the beach. She sometimes refuses to go if she is experiencing knee and back pains. When she does not have pains, she will ask me to go for a walk on the beach. So, sometimes she encourages me, and other times I encourage her (Hussain, M, 70 years old, active).*

So, when one spouse is not being active enough, the other spouse can encourage him/her to go for a walk, thereby helping each other to engage in PA more often. It is worth noting that no female mentioned that she invited the husband to go for a walk to spend time together.

In conclusion, a spouse’s invitation to share in a PA was perceived to have a positive influence on a participant’s PA level. This supportive behaviour was gendered, as men were more likely to provide support to their partners as compared to women.

## 9.1.2 Mockery and Negativity Toward Females’ Physical Activity

In addition to the positive effect of spouse encouragement on the partner’s PA, the data also showed a possible negative effect of the spouse on their partner’s PA. Several female participants stated that their partners affected their PA levels negatively. A number of older female participants said that their husbands did not give them permission to walk on the public walking track or to join a gym:

*My husband influences my activity level negatively. He does not allow me to join gyms. He always says, “If you want to do sports, you can do them at home; gyms are not an option” (Bedour, F, 70 years old, group, inactive).*

According to these participants, their husbands believe that if they [wives] want to do a PA, they can do it at home. The partners in these cases were not physically active, as mentioned by their wives, and did not view PA negatively. They just believed it was inappropriate for women to do a physical activity outside of the home, which may reflect some of the social norms and cultural pressures outlined in the previous chapter. This lack of understanding of their wives was found to affect females’ physical activity level negatively as all females that mentioned husbands as a negative influence described themselves as physically inactive.

*My husband is the biggest influencer in my life, negatively of course. He does not like me to go out very often. So, my husband does not support me at all. I can ignore him and go with my friends for a walk, but I do not want to clash with him (Zahra, F, 70 years old, group, inactive).*

Moreover, a few female participants complained about the negative effect of their husbands mocking them when they engaged in PA. Women felt their partners did not give them enough attention or did not have time for them, which affected their PA level negatively. In these cases, husbands did not actively try to prevent their wives from PA, but they were sending indirect negative messages by minimizing the importance of PA or by giving the women the impression that it is something that does not suit them. This also showed that, in some cases, women were waiting for their spouse to encourage them.

*When he sees me exercising, my husband sometimes says, “Did you lose your mind when you got older?” But I ignore him and continue doing my exercises. He never offers to take me to the walking track, and he never advises me to walk or to do physical activity (Modhi, F, 57 years old, inactive).*

Another example of a husband’s negative influence on his wife was given by Sawsan, an active participant. Her husband does not usually like seeing her do housework and complains that she is exhausting herself and should rest instead. It could be he is trying to be nice by telling her she does not need to work or even that he is feeling guilty that he is not active, so he is trying to stop her from being active as well or he is feeling guilty that he is not helping her, and instead of offering help, he tries to reduce her PA level. She is still active despite his complaints as she is ignoring him and carrying on, but she feels he does not provide support to her. However, she did not use the opportunity to encourage him to be active, which supports findings in Section 9.1.1 that encouragement usually goes from male to female, not the other way around:

*My husband has a negative influence on my physical activity. He is always unhappy that I am working at home and moving all the time. He always says, “Why do you love heavy work when you can relax?” To be honest, I always ignore him (Sawsan, F, 66 years old, group, active).*

The above quote shows women’s response toward their spouses’ criticisms differently. This discrepancy was impacted by how women value PA.

A female participant, Dana, mentioned that Kuwaiti women have spouses who support them and never prevent them (women) from engaging in PA:

*I think Kuwaiti women have the financial resources, good partners who let them live freely without constraints, and many sports facilities and walking tracks, so they have everything available to them (Dana, F, 68 years old, inactive).*

Theinconsistency of why some people might feel like this when others feel constrained by their partners could be explained by the differences in partners’ relations and social backgrounds among families in Kuwait. There, some families still show more patriarchal control, as was prevalent in the past, while women in other families have more freedom of choice. Here, also, the role of gender plays a part in PA engagement among women in Kuwait by positioning a male partner who ‘lets’ the woman ‘live freely without constraint’ as ‘good’ rather than assuming this would just be the natural order of things.

Criticisms from a male spouse negatively influences the female participant, although responses varied based on the type of marital relationship, individual perceptions of the partner’s influence and the value of PA to the female.

## 9.1.3 Passive Discouragement

Lack of companionship also indirectly discouraged older participants from being physically active. Some mentioned lack of companionship by their families, especially their partners, as unsupportive. The husbands in these cases did not prevent their wives from outdoor physical activity, but they did not want to accompany them; the wives did not want to go alone, so they chose not to go.

*I do not like going out alone, and my husband does not help me as he usually refuses to go out with me. That’s why I am teaching my daughters to go out alone. I was raised that a girl cannot go out alone, and that’s why I cannot go out alone up to now (Sawsan, F, 66 years old, group, active).*

Similarly, Hessa reflected on the effect of indirect discouragement from her husband on her engagement in PA:

*I do not have enough support. Sometimes, I would like to go to the walking track, but I cannot find a companion to go with me, so I do not go…My husband never goes with me. He is in front of you; you can ask him why (Hessa, F, 62 years old, group, inactive).*

Her husband replied that he does not like walking tracks because of his own perceived barriers, such as the presence of the opposite gender, embarrassment in wearing sports clothes and a dislike of the narrow walking tracks.

Some participants, such as Sakina, adapted to this situation and found a companion other than a spouse, as she was unable to engage in the communal PA with her husband (Section 9.1.1):

*My friend and I agreed that we would do activities together; she always encourages me (Sakina, F, active).*

A male participant, Sa’ad, talked about how he always encouraged his wife and supported her, but his wife never encouraged him in return. This also supports the findings in Section 9.1.1, where females are less likely to offer encouragement to their spouses regarding PA, perhaps because women do not feel empowered enough to affect their husband’s PA level.

*My wife is an athlete; she was the Kuwaiti champion for 100-meter running. When we got married 30 years ago, I used to run with her. She always won, and I always encouraged her. However, I do not think that anyone has ever encouraged me to be more active (Sa’ad, M, 58 years old, inactive).*

Similarly, another male participant, Ahmad, stated that he had never received any advice from his spouse. This may be related to personal barriers, such as family commitments, as the family’s attention is directed elsewhere and not toward him.

*She [my wife] never advises me to be active or take care of my health. Perhaps this is because she is busy with our grandchildren; we have eight grandchildren, and she spends a lot of time with them (Ahmad, M, 58 years old, inactive).*

Ahmad tried to relate his inactivity to his wife’s lack of support, but this is likely to be only part of the picture. This applies to the female participants as well, as it was implied earlier that women are able to use the excuse of their husband not supporting them as a reason to remain inactive.

In conclusion, spouses can impact PA level positively or negatively. Spousal influence was gendered, as women were less likely to attempt to influence their husband’s PA level. This could be related to the differences in social control and empowerment between men and women. Doing activities together encouraged engagement, while criticisms and lack of spousal companionship discouraged it. A spouse’s impact on PA was affected by an individual’s perception of his/her partner’s influence and the value they place on PA.

# 9.2 The Role of Grown-up Children in Influencing PA

This sub-theme explored the role of grown-up children and how it influenced older adults’ PA behaviour. Influence here mainly came in the form of practical support and encouragement and these are discussed in more detail below.

Practical support was mentioned several times by participants in relation to how they were helped or influenced by their wider family members to take up a physical activity. This support took several forms. The first was transport, as discussed by the physiotherapist:

*I think children have the most influence on older adults. For example, some of my patients are usually dropped off to the clinic by their children, so could be dependent on their children for transport. They might be dependent on them for other things as well (Physiotherapist, F, 31 Y old, active).*

Buying sports equipment to use at home was another form of practical support provided by family members as stated by Areej, a younger adult:

*I usually buy simple equipment for my mum to encourage her to do exercises. I bought her therapeutic bands, dumbbells and a mat, and she put them in her room and uses them every morning. Sometimes I teach her some of the exercises that I know (Areej, F, 30 Y old, active).*

Areej’s mother, Muneera was influenced positively by the practical support provided by her daughter. She described the sports equipment as her ‘mini gym’, where she exercised daily. However, analysis of the data showed that sometimes practical support is needed and wanted by older adults, and sometimes it is not. For example, Asma, a 32-year-old participant said that she and her siblings bought sports equipment for their mother (Manal) so she could exercise at home as they felt that this might encourage her to adopt PA by doing exercises, which was a suitable PA for her. However, the mother did not use the equipment or do exercises at home, according to her daughter. Her children realised later that she did not like doing exercises and preferred walking outdoors instead. This meant that there was a discord between the parent and what the children presumed to be her desire/preference:

*We [her children] bought her some sports equipment so she can use it at home while watching TV, but usually she does not use it because she prefers walking (Asma, F, 32 Y old, inactive).*

To have a positive effect, the practical support should be both appropriate and desired by the older relative. Asma stated in her interview that when they realised their mother’s (Manal’s) preference, they started going shopping with her, where she could walk and enjoy herself at the same time. Asma still felt that their support was insufficient, however, although she was not be able to identify what was missing:

*My siblings and I are trying to encourage my mother to be more active. We take her out regularly, travel with her and give her advice, but I still think this is not enough. I think there is something missing, but I am not sure what it is (Asma, F, 32 Y old, inactive).*

It worth noting that during Manal’s interview, she described her children as her significant others who influenced her PA level positively. She stated that her children supported her by taking her out regularly and offering to take her shopping themselves instead of her going with the driver. Manal stated that outings with her children were better for her mood and gave her more energy than going out with the driver, so to her, what the children were doing was more than enough and was certainly encouraging her to be active. During Manal’s interview, she did not mention that her children bought her any sports equipment, possibly because it was something that she did not desire or need:

*My children, may God protect them, are the ones who encourage me. They take me out regularly. When they hear that I’m going shopping with the driver, they say, ‘No, mum, we’ll take you’, and they take me. Believe it or not, the mood at these outings is different with your children. You feel really energised (Manal, F, Y old, inactive).*

Another example of the appropriateness and desirability of practical support can be found in the interview of Bashayer, a 30-year-old participant who tried to encourage her parents to be more active. She stated that her mother (Sakina) refused the gym subscriptions she offered her:

*I always send my parents video clips of older people doing exercises that we do not expect them to be able to do due to their age. My goal is to encourage my parents to be more active and do exercises. I always offer my mother gym subscriptions or personal trainers, but she refuses (Bashayer, F, 30 Y old).*

During Sakina’s interview, she mentioned her daughter Bashayer as one of the significant people in her life who encouraged her to be active by asking her to join the gym she was going to. Bashayer advised the whole family to join the gym, but only the younger members of the family responded and joined. Sakina said that she replied to Bashayer’s offer by saying that she could not lift weights like fit people do and that Bashayer replied that she did not have to lift weights – but she still preferred not to join the gym. Sakina explained that she did not like gyms because the supervision provided is insufficient for her age. Another point that should be noted is that when Sakina was asked to mention activities that she thought were considered to be PA, she mentioned swimming, walking outdoors, praying, playing with grandchildren and doing daily housework, but she did not mention the gym:

*My daughter encourages the whole family, not only me. She convinced her younger brother to start going with her. In the past, he was playing football only, but now he is going to the gym with her. She is now trying to convince her oldest brother (Sakina, F, 57 Y old, active).*

Bashayer stated that family support was not effective in motivating her older parents to be active or that it only motivated them for a short time. This indicates that other factors also have an influence on PA behaviours among older adults and that support needs to be tailored to older adults’ needs in order for it to be effective:

*I always talk to her about how physical activity can reduce back pain, since she suffers from chronic back pain. Sometimes, she really agrees with my advice, but only for short time. After that, she returns to her normal habits. She is not motivated enough. I am tired of talking to the whole family about physical activity, but nobody is listening (Bashayer, F, 30 Y old, active).*

Verbal advice provided by relatives was also found to influence PA behaviour among older adults. Many participants talked about the positive and motivating effect of verbal family support on their PA levels. If the family member was physically active or enjoyed physical activity, he/she tended to encourage the older adults to adopt a more active lifestyle:

*My children always encourage me to walk and go out. They advise me to avoid staying at home and tell me that not going out could lead to depression. They always say, “do not do any work at home, we do not need anything, just go out and have fun.” (Dana, F, 68 Y old, inactive).*

Kinship and regular contact among family members helped them to understand the needs of their older family members. When family members understood older relatives’ needs, they could encourage them to be more active by providing advice that suited their personality and those needs, as shown by Zahra:

*Sometimes my daughter calls me and asks me to go out with her. I always refuse and tell her it is too hot to go out because I do not want to go, but usually she insists on taking me with her, so I go. I think I need that push. I need someone to insist that I go out, otherwise I will surrender to laziness (Zahra, F, 70 Y old, group, inactive).*

Zahra’s comment shows that sometimes people present a different reason as a barrier, when the real barrier is their own desire. Her daughter seemed to understand that Zahra’s reasons were only excuses, and for this reason she pushed her mother to go out with her. Another example of the importance of understanding older adults’ needs is given by Areej:

*My mum, like most women her age, loves to maintain a good body shape. I use this to my advantage and try to encourage her to do exercises to have a nice body, and this really motivates her (Areej, F, 30 Y old, active).*

Areej understood that body shape was an important concern to her mother, so she focused her advice on this. Moneera, Areej’s mother, reported herself as physically active, and perhaps that Areej’s tailored advice may have been a factor in motivating her mother to be physically active.

In summary, grown-up children (particularly females) appear to have some influence on the uptake of PA in relation to their parents, by providing practical support, such as sport equipment and transport, and verbal advice, although this is not always sustained. As grown-up children are very close to their parents, they understand their needs. Both practical support and verbal advice provided by relatives should be tailored to older adults’ needs in order to be effective.

# 9.3 Influence of Peer Support and Social Networks

In addition to spouses and grown-up children, friends were also frequently mentioned as significant others in older adults’ lives. Many participants, both physically active and inactive from both genders, believed that friends have a positive effect in motivating older adults to be more active and to maintain being active. Sawsan’s quote is an example:

*My friends are some of the biggest supporters of my activity. I listen to their advice and love being with them and doing things with them. We usually walk together. I go out with them [my friends] (Sawsan, F, 66 Y old, group, active).*

Seeing people of a similar age doing physical activities encouraged Sawsan to be active as well. Similarly, during the interview with the physician, he discussed the role of friendship and how high levels of trust between friends made them excellent companions, which was helpful for adopting and maintaining physical activities.

*Most older adults want their friends with them. I know two older adults who are friends. When I advised one of them to walk daily, he did not do it until I advised them both to walk together. Then they started to do it, and now they are walking regularly. When they walk together, they socialise, encourage and motivate each other (Physician, M, 50 Y old, active).*

The social aspect of doing PA with a friend can motivate older adults to adopt and maintain PA. This was highlighted by Waleed, who talked about the positive role of a physically active friend in encouraging others to adopt physical activities. His active friend usually invited people to join him in his activities, which in turn improved the group’s PA level.

*I think having support is very important to motivate us to be active. When you have an active friend, he will motivate you, and you may be able to do activities together. I personally see how when a friend asks you to walk with him and you spend the time chatting, you really motivate each other (Waleed, M, 64 Y old, group, inactive).*

However, friends were also mentioned as a negative influence on PA. A few participants stated that inactive friends negatively affected their PA levels as these friends would sometimes ask the active participant to spend more time with them in sedentary activities. For example, Saleh, an active male participant, talked about how his friends sometimes tried to convince him to stay in the diwāniyyah[[10]](#footnote-10) instead of going to the walking track.

*It is possible that friends sometimes have a negative effect as well, when they say it’s better to stay at the diwāniyyah than to go walking. To be honest, I’m not really affected with this. I don’t agree when my children try to do everything for me, and I don’t listen to my friends when they are trying to prevent me from walking. I go walking, and then I go to the diwāniyyah with them (Saleh, M, 72 Y old, active).*

The attitudes of Saleh’s friends are consistent with earlier findings discussed in Section 8.1.4 that social life in Kuwait is focused on leisure time which is spent in sedentary activities. However, Saleh was clear in his comment that although the influence of his friends was negative, since they were trying to prevent him from being physically active, he ignored them and did what he believed was right for his health. He performed his PA first, then joined them in the diwāniyyah later.

The negative influence of friends was also mentioned by Haya, an active older participant who attended gym regularly and convinced her friends to join as well.

*I encouraged a lot of my friends to join the gym I am attending, but I go at a different time to avoid being distracted by them (Haya, F, 65 Y old, active).*

Haya perceived the presence of her friends with her in the gym as distracting, due to chatting and socialising. That’s why she preferred to train at a different time than her friends to have a more productive PA time. Socialising is more compatible with some forms of PA (e.g. walking) than others (e.g. gym/higher intensity workouts). While Saleh and Haya acknowledged the negative influence of their friends, they both found a way to avoid this influence and were able to continue PA as they wished. This suggests that other factors, such as personal beliefs about the importance of PA, can also impact PA behaviours among older adults and help them confront negative influences in their social surroundings.

Doing physical activity together as partners or a group was mentioned as a form of support that motivated older participants to be more physically active. The social aspect of having a supportive companion while doing physical activity helped participants spending more time doing the activity and helped them overcome barriers, such as pain.

*When you walk with someone else, you chat together, so you walk long distances without noticing (Hessa, F, 62 Y old, group, inactive).*

It is worth noting that Hessa previously stated that she is not going to the walking track because she has no companion (Section 9.1.3), which suggests the importance of companionship to older adults.

Going shopping, walking on the walking track, and playing with children and grandchildren during family gatherings were some examples of the joint activities put forward by participants of activities that can be done together to motivate older adults to adopt a more active lifestyle. Manal’s comment is an example of this:

*Sometimes playing with my grandchildren encourages me. I used to have a swimming pool in the courtyard and swim with the grandchildren when they visited me on weekends. It’s really fun. I really enjoyed it and felt active (Manal, F, 59 Y old, inactive).*

Manal stated that doing activities with a companion was more fun and gave her more energy, as mentioned earlier (Section 9.2), when she talked about the positive influence of accompanying her children during shopping. The benefits of the social aspect of companionship was reinforced by Zainah, an active older adult. She described how doing activities with people she loved encouraged her as well as the other family members to be active and to enjoy what they were doing.

*Before my father was bedridden, I used to take him and my mother out every Thursday; each week, I would take them to a different place…to help my parents to go out and interact with the world. It was a fun time for me as well. Sharing activities with the people you love really helps you to maintain these activities and enjoy them (Zainah, F, 60 Y old, active).*

The benefits of having a companion are not limited to the social aspect and to having fun. It also provided a sense of safety when doing PA outdoors, especially when women are out at night, as shown in Latifa’s comment:

*I think having a companion when walking is really motivating and makes you feel safer, especially when walking at night. You do not feel comfortable walking alone in the dark (Latifa, F, 60 Y old).*

In conclusion, physically active friends positively influenced PA levels in older adults by motivating them to adopt PA and by helping them maintain PA behaviour through performing joint activities that provide a social element to PA. On the other hand, physically inactive friends in some cases negatively influenced PA levels by distracting older adults in the process of doing PA or by trying to prevent them being active. However, the physically active older adults in this study were able to confront this negative influence and maintain PA. Companionship and doing PA as a group of relatives or friends has many benefits and is an important motivator of PA behaviour among older adults.

# 9.4 Influence of Health Professionals

This sub-theme explored the role of health professionals and how it influenced older adults PA behaviour. Further sub-themes that emerged included trust of healthcare professionals and interpretation of medical advice.

## 9.4.1 Trust/Respect of Doctors and Health Professionals

Health professionals were mentioned many times by participants for their influence on their PA levels. Many participants stated that health professionals incorporated PA in their medical advice, particularly to those with chronic diseases. Although some participants mentioned that they adopted PA after a physician’s advice, this was not always the case. For example, Manal, did not adopt PA recommended by her physician even though she talked about how much she trusted advice given by health professionals. She saw them as good sources of health knowledge and expertise.

*Sometimes the doctor encourages me to walk and be more active. He’s a specialist, so I trust him and take his advice seriously (Manal, F, 59 Y old, inactive).*

During her interview, Manal mentioned that she is not physically active. Although she was advised by her physician to adopt some PA, she mentioned other barriers that prevent her from being active such as fear of falling and pain. Sa’ad, who had a history of cancer and was advised by his physician to include PA as part of his cancer treatment, had a similar experience.

*The doctor advised me to be more active as physical activity is part of cancer treatment (Sa’ad, M, 58 Y old, inactive).*

Sa’ad stated that he was physically active for a while, but then he stopped. He gave several barriers to PA, such as the lack of social support from his spouse, the unsuitability of PA facilities and the weather. Clearly from the cases of these two participants, their own barriers over-rode any advice provided by a healthcare professional.

In summary, the current form of medical advice provided by health professionals is not enough to promote PA among older adults. Several other factors influence the adoption of PA among older adults and affect the efficacy of the medical advice. How older adults interpret medical advice could also affect the adoption of the advice; this will be discussed in the next section.

## 9.4.2 Interpretation of Advice

Many participants stopped PA after being warned or advised against it by their physicians. For example, Manal, who said in the previous section that her physician advised her to adopt PA, also mentioned the following.

*I’m not using the stairs a lot because the doctor told me they are hard on my severe knee osteoarthritis. Can you believe he told me to walk down the stairs backward, to reduce stress on my knees? To be honest, I never do that because it is really difficult (Manal, F, 59 Y old, inactive).*

According to Manal, her physician suggested an alternate way of using stairs. She perceived this as difficult but did not discuss it with him. It is possible that the health professional provided poor or incorrect advice, but it is also possible that Manal misunderstood the advice. The language health professionals use when dealing with older adults has a vital role in their health choices. A similar example of misunderstood medical advice was given by Modhi.

*After the doctor in Kuwait advised me to avoid walking, I developed a fear of walking and stopped walking in the malls. Maybe he meant to not walk for long distances and to not do big efforts, and I misunderstood him. I do not know (Modhi, F, 57 Y old, inactive).*

It is not enough for medical teams to only focus on the physical aspect; a patient’s confidence and anxiety have to be taken into consideration when encouraging them to make lifestyle changes. Sometimes patients misunderstand health professionals, so there is a need for language that does not cause patients to fear movement.

*Unfortunately, some doctors advise us to avoid walking when we have orthopaedic problems, and this is wrong. Yes, I feel pain sometimes when I walk, but this is normal. I can rest between walking (Saleh, M, 72 Y old, active).*

Interpreting medical advice incorrectly is common among older adults and has a negative influence on their PA levels. Potentially incorrect advice provided by health professionals also has a negative influence on older adults’ PA. The language used by health professionals while delivering advice affected how the advice was understood and whether it was accepted. Considering psychological aspects such as anxiety and confidence as well as physical aspects also influenced understanding and acceptance of PA advice.

# 9.5 Chapter Summary

In conclusion, significant others in older adults’ lives, such as spouses, grown-up children, friends and health professionals, had a considerable influence on PA behaviours among this population. These influences were both negative and positive. Kuwaiti society is very family-oriented, especially for older people who spend most of their time at home. They mainly interact with their family and children and are most influenced by them. In the current study, family attitudes towards PA, family and friends’ support of PA and doing PA as a group were found to influence PA behaviours. Peer support from people of a similar age and relatives was mentioned most frequently by participants as a motivator to adopt PA, while lack of support by close relatives was seen as a barrier. Verbal support, understanding of older adults’ needs and practical encouragement were all types of support mentioned by participants that could have a role in influencing PA behaviours. Finally, the influence of health professionals could be affected by the type of advice provided. Community leaders were not mentioned as influencing older participants, but strategies discussed by them and others are analysed in the next chapter.

# CHAPTER 10 - STRATEGIES TO IMPROVE PHYSICAL ACTIVITY LEVEL AMONG OLDER ADULTS

This chapter presents the third theme, strategies to improve PA, to emerge from the data analysis. These strategies arose from discussions with participants (older adults, their significant others, healthcare professionals and community leaders). Sub-themes include: the role of habits; importance of group PA vs ADLs; adjusting PA to climate; and role of health professionals in promoting PA. Finally, the last sub-theme discusses how to promote PA in the community through health professionals and community leaders and by using technologies to reach target population. Strategies are divided into intrapersonal, interpersonal and environmental levels.

# 10.1 Intrapersonal and Interpersonal Level Strategies

This section explains in detail how the PA level in older adults’ daily routine can be improved by using their habits and activities of daily living, taking advantage of the seasonal weather and taking up new hobbies. It also discusses suggestions to improve health professional’s role in promoting PA among older adults in clinics.

## 10.1.1 Habits – Developing Good Habits, and Changing Bad Ones (Life Course)

Most participants agreed that habits influence their PA level. Participants believed that when engaging in PA becomes a habit, it will be a part of people’s lives. They believed that older adults’ level of PA will sometimes depend on their level of activity when they were younger. If they used to be active, they will maintain the same PA level when they get older. Conversely, if they were not used to being active, they will also not be active when they get older.

*I think having an active lifestyle history could help people to be active when they get older. I mean, when people engage in sports regularly when they are young, it will be very easy for them to maintain that level of activity when they get older (Abdullah, M, 61 Y old, inactive).*

Some participants justified the differences in PA level between Kuwaiti older adults and older adults in other countries with previous activity habits. Many participants believed that older adults in the West are more physically active because they were active when they were younger; by contrast, Kuwaitis were not active when they were young, so engaging in an active lifestyle later in life is difficult for them. This belief impacted PA level among older participants negatively as they felt it was too late to be physically active.

*People in other countries are used to walking regularly, so it’s a habit to them, but not for us (Manal, F, 59 Y old, inactive).*

Many participants agreed that inactive people are used to specific sedentary routines. When they try to change their habits, especially after years of inactivity, doing so can be very difficult. Some participants believe that a long history of physical inactivity gives older adults the perception that improving their fitness level is not possible. People who have always been largely inactive might feel that even trying in older age is pointless.

*Some people are used to inactivity, so even if the distance is 50 meters, they will go by car. So I think habits and inactive lifestyles give people the perceptions that this is our life and we can’t change it (Abdullah, M, 61 Y old, inactive).*

Additionally, several participants suggested that setting a time for PA during the day helps them maintain doing so on a daily basis, as evident in the responses of Hajar:

*I think setting a specific time for physical activity helps it become a habit and something you do regularly (Hajar, F, 65 Y old, active).*

In summary, participants suggested that integrating PA habits into one’s daily routine from a young age could help improve and maintain one’s PA level in older age.

## 10.1.2 Incorporating PA into Daily Activities vs Group (Joint) PA

When asked to suggest ideas for improving the PA level among older adults, the majority of the participants, even the physically inactive ones, suggested trying to add more PA to their daily routine. These activities included doing more house chores that suit their physical abilities.

*I have always said to my daughters, friends and everybody, “Move and do your work yourself; do not depend on housemaids.” If I had the ability, I would do all the housework myself, but I cannot (Shareefa, F, 73 Y old, inactive).*

Reducing dependence on domestic helpers and the use of cars were also suggested by most participants as possible solutions to improve the PA level in the older adult population. Lifting grocery bags, ironing, cleaning and cooking were some examples of tasks that older adults can do independently instead of asking their servants to do them. Reducing car use whenever possible was also suggested to improve the PA level among older adults.

*We also have to stop depending on domestic servants. We should stop asking them to do everything for us; for me, when I buy groceries, I carry the shopping bags from the car to the inside of the house and never ask the maids to do it. I think we will be fine when we stop depending on others (Saleh, M, 72 Y old, active).*

Notably, although the suggestions were given by the majority of the participants, only a small number of physically active participants applied these in their daily lives. The rest were dependent on others in house chores, as discussed previously in Section 8.1.3, meaning that they are not doing what they are suggesting. It comes down to strategies that sound good in theory but are difficult to implement in practice. This may be related to the cultural perception of PA, as discussed earlier in Section 8.3.1. For these reasons, many participants describe leisure PA as a better alternative to work-related PA, as can be seen in Asma’s comment:

*I think in our culture at the current time, with all the dependence on servants, housework is not an option for physical activity. I think adopting physical activity as a leisure activity could be the best option for Kuwaitis (Asma, F, 32 Y old, inactive).*

Moreover, Sakina suggested playing with one’s grandchildren as a way to improve one’s PA level. By doing so, older adults perform their responsibilities as carers, whilst being active at the same time and having fun with the people they love.

*We should always play with our grandchildren or in family gatherings when children play games, we should play with them (Sakina, F, 57 Y old, active).*

To incorporate more PA in older adults’ lives after retirement, taking up a hobby was mentioned several times by the participants as a factor that facilitates improvement in the PA level among older adults. Several participants emphasised the importance of changing routine and social interaction to avoid the negative consequences of retirement such as isolation, dissatisfaction and depression. As retired older adults have a lot of free time, spending one’s leisure time in enjoyable activities was recommended by many participants. Photography, cooking, fishing, joining desert picnics and gardening were some examples mentioned as the preferred hobbies by older adults. The importance of taking up hobbies is consistent with an earlier finding (Section 8.3.1) that choice and pleasure were key motivators for Kuwaiti older adults to engage in PA.

*I think gardening is an activity that older adults love, and it provides good amounts of physical activity. If we can convince people to do gardening, their levels of physical activity will increase (Ahmad, M, 58 Y old, inactive).*

Incorporating PA into one’s daily activities, such as housework and transport, were suggested by a participant as a way to improve PA among older adults. Taking up a hobby was also recommended by participants as ways to help improve the PA level after retirement. While many people thought these were good ideas, they weren’t actually doing them themselves. Because of the culture of dependence on helpers and cars, as well as the preference for enjoyable sociable activities, leisure-time group PA could be a better alternative to promote PA among Kuwaitis.

## 10.1.3 Adjusting PA to the Climate

As the weather in Kuwait is harsh during summer, several participants mentioned other alternatives to outdoor PA: mosques and shopping malls. These are indoor, air-conditioned places. The cool temperatures, as well as the availability of chairs for people to rest when tired, make it preferable for many older adults in Kuwait in summer.

*When I really want to walk, I go to the mall; it is indoors and air-conditioned, so I walk and do shopping at the same time (Modhi, F, 57 Y old, inactive).*

Many participants mentioned that their outdoor PA increased during winter, compared with summer, as the cool weather helped them walk outdoor conveniently. This was evident in what Manal said:

*I especially like to walk during this time of the year when the weather is very nice…The weather in Kuwait is nice during March and April through mid-May (Manal, F, 59 Y old, inactive).*

Additionally, during winter, the majority of Kuwaiti families have their own desert camps, and they go there during weekends (weekly gatherings held there instead of their homes during winter). This practice may increase outdoor PA options and improve the PA level of older adults.

*I love the camping season because I can walk every weekend when we go. The weather is nice, and you can walk for a long distance. I always ask my family to go to the camp during the day, so I can walk in daylight. I know it is only one day a week, but I really enjoy it (Muneera, F, 52 Y old, active).*

Winter and spring are good seasons to promote outdoor PA among Kuwaitis, especially through desert camps.

## 10.1.4 How Health Professionals Can Influence PA

The interviews undertaken with health professionals (one physiotherapist and one physician) helped to explain the current situation in Kuwaiti clinics and to address the areas that require more attention. Several suggestions to promote PA among older adults were made by the physician and the physiotherapist who participated in the current study. They believed that their current role as health professionals in clinics is giving simple advice to older adult patients regarding healthy lifestyle choices, including PA, but both of them thought that this approach alone is not achieving any benefit. This is consistent with the findings in Section 8.4.

*Currently, we only offer advice to older adults regarding physical activity. This advice is very basic, such as, “You have to walk daily; you have to move more”. This advice alone is not enough, and we are not achieving any goals with it (Physician, M, 50 Y old, active).*

*I think physiotherapists in Kuwait do not have a big a role in promoting physical activity. Yes, for example, they use brochures, but I feel the brochures they use are out of date. I do not see any development or progression (Physiotherapist, F, 31 Y old, active).*

The physiotherapist mainly deals with chronic conditions in the clinic. For this reason, she suggested including PA promotion as part of the physiotherapy program to help manage and treat these conditions or even prevent them or their complications as well. In her interview, the physiotherapist believed that physiotherapists, as health professional with extensive knowledge of the area of PA, could help in this kind of PA promotional program.

*I think every profession has strengths, and in our profession, exercise therapy is our strength. So, from the medical team, I think it is the responsibility of the physiotherapist to promote physical activity among people. I think our role is really significant because we have the most knowledge in terms of exercise therapy and how to use different exercises to help with different outcomes (Physiotherapist, F, 31 Y old, active).*

The physician suggested referring patients to a physiotherapy clinic where a PA programme could be tailored to suit older adults’ circumstances. He also suggested offering monthly consultations about PA for older adults in the clinic. In his opinion, the consultation team should consist of physiotherapists, doctors and social workers. It could be noted from this suggestion that it will not help to address the barrier of not being active if the older adults feel healthy and are not using the older adults’ clinic. The physician also proposed that families and friends should be part of the consultation day to reach as many people as possible and to try to overcome any social barrier to compliance with the PA programme, such as husbands not giving permission to their wives to do outdoor activities or attend exercise classes.

*That is why our idea is to have a physiotherapy clinic within the older adult clinic. We could thus refer patients who have indications like falling risks, physical inactivity, limited functions due to ageing and so on. We could refer them to the physiotherapist, who can examine the patients and provide them with a tailored programme according to their needs. Then we could follow up with them to check progress and amend the programme as necessary. Unfortunately, these are only ideas up to this point. Our approach in the meantime is only simple advice (Physician, M, 50 Y old, active).*

The physiotherapist suggested more awareness campaigns in hospitals and polyclinics

along with adopting a multi-disciplinary team approach that could focus on non-medical aspects as well to overcome the ineffectiveness of the current advice provided to older adults.

*I think when we as a physiotherapy department have an awareness day we should involve other healthcare professionals and make sure that our role should not be medical care alone. We need a multidisciplinary team approach where the whole team works with each other to achieve the desired preventive goals (Physiotherapist, F, 31 Y old, active).*

Moreover, older participants suggested having a specialised department in the general hospital where older adults could improve their knowledge of PA and where they could visit without a referral.

*I wish we had a department in the hospital for people our age, to teach us what type of exercise suits us and train us on how to do it properly. Because sometimes, you wish to exercise, but don’t know how to do it, or you don’t know what suits you exactly. I wish anyone 50 years old and up were eligible to use such a department, without the need for a referral (Manal, F, 59 Y old, inactive).*

The health professionals also emphasised the importance of considering the older adults’ social environment in any initiative to promote PA among them as looking to older adults alone was not effective. For example, the physician talked about the importance of targeting families instead of individuals in any future PA promotional programmes. This is consistent with earlier findings in Section 9.3 regarding the positive influence of group activities on older adults and Sections 9.1 and 9.2 regarding the influence of spouses and grown-up children on older adults’ PA.

*I think a promotional programme should target the family as a whole instead of targeting individuals (physician, M, 50 Y old, active)*

To summarise, many participants suggested that regular PA habits at an early age could improve PA engagement and maintenance at an older age. Incorporating PA into one’s daily activities, such as house work, transport and taking up hobbies after retirement, was also suggested by the participants to improve PA levels. Many participants weren’t actually carrying out these practices and were rather talking hypothetically, due to many cultural and environmental factors [as discussed previously in Chapters 8 and 9]. For this reason, leisure-group PA is a better option for societies such as Kuwait.

Additionally, the current role of health professionals in promoting PA behaviours among older adults using simple advice during medical consultation was not felt to be sufficient. To improve their role, the physician and the physiotherapist suggested adopting a multi-disciplinary team approach, in which the medical staff should focus on preventive measures, and not only medical aspects. They also recommended considering the environment older adults lived in when tailoring PA promotional programmes. For this reason, including the family members in the promotional programme was regarded as important to achieve positive results. With these suggestions, the only people benefiting from the medical advice would be those seeking help from a health professional regarding a chronic condition. The focus in this section has been on intrapersonal and interpersonal level strategies which depend on behaviour change, and the next section is going to look at more societal level strategies which can tackle PA engagement at a population level.

# 10.2 Environmental Level Strategies

This section explains in detail suggestions to promote PA among older adults in the community. The suggestions focused on health professionals, religious and community leaders and technology, and their possible role in influencing PA in the community.

## 10.2.1 Physical activity Friendly Community

Data interpretation from Section 10.1.4 showed that targeting a person, even with their family members as suggested by health professionals, is essentially an individual approach and this may form part of the solution. However, it is very difficult to change the health of a population ‘one by one’ through individual behaviour change measures; instead, changes need to be introduced at a societal/policy level to shift thinking on PA. For example, if the focus of planners turned to making the streets more suitable for walking with shady pedestrian areas, safe from traffic and with plenty of seating and amenities, people would be more likely to use them, and see others using them, for example:

*I have an idea: we shape our cities to shape our behaviour. As a civil engineer I have an interest in designing and building cities…We need a designated pedestrian place which is a space in the pavement for pedestrians; it is approximately one meter wide, and it is continuous and levelled. I feel that if we keep this in mind as we design new cities and we use trees that not only provide shade but also beauty to a place, this would encourage a lot of people to walk more frequently…I think the master plans of our new cities should encourage people to walk and be active by providing the right environment for people to do physical activity with proper shading and misting (Sa’ad, M, 58 Y old).*

Equally, community-based preventive measures that are taken before an older person actually develops a disease is another key solution to developing a healthy lifestyle among older Kuwaiti adults. For example, several participants suggested having specialised training centres for older adults (age-appropriate facilities) in each governorate, containing *diwāniyyah* to socialise, physical activity classes and a walking track. The specialised centre for older adults could include a gym and health clinics in addition to shops, a cinema and a hotel. It can be noted that this suggestion would also be addressing the need for social interaction during PA as found in previous chapters.

*I think it would be possible to encourage people in my age group to be more active if we had health centres, but not the regular health centres. No, let’s say something like a sanatorium or a resort that includes sports, diet and other activities, and all of the activities are physical activities. This would be possible with only partial support from the government; it is not necessary to be fully supported by them. In the resort, we should have dieticians, physical activity specialists and doctors to provide advice for people in my age group. It would be nice if the resort had green trees and flowers outside and walking tracks and numerous swimming pools (regular ones and treatment pools). I think this would encourage people in my age group to join and be active (Sakina, F, 57 Y old, active).*

If as suggested in the above quote, each neighbourhood/community had a health clinic with specific facilities and activities to suit older people, it would be more visible and therefore begin to break down preconceptions about older people that they can’t take part in activities.

The physician interviewed for this study suggested the “first-generation *diwāniyyah*” as a good place to reach a large number of older men in the community.[[11]](#footnote-11)

*I think we need to visit the first-generation diwāniyyah. I mean doctors or physiotherapists should visit them not to lecture them about physical activity, but to explore and discuss why they are inactive, and what their ideas and suggestions are. In this way, we will understand their mentality and will be able to design something that suits them (Physician, M, 50 Y old).*

Based on the physician suggestion, first-generation *diwāniyyah* will helpto reach large number of older men in the community. It would be good if some gentle PA could be incorporated into these meetings, such as a gentle walk or a game of boules, etc., which may help older men to engage in more PA in a relaxing atmosphere with peers. Currently, there is no similar community place for older women, so another suggestion would be designing a community place where older women can gather and where PA could be promoted on a higher level.

Similar to the first-generation *diwāniyyah,* mosques are other good places to reach a large number of people in the community. Kuwait is a religious society and mosques are one of the most important institutions in Islamic society. People visit mosques daily and Muslims have a weekly conference, so to speak, which is the Friday prayer. Therefore, using this great institution (the mosque) to promote health and social awareness will help achieve good results according to the physician comment below:

*Our religion encourages us to be active and eat in moderation, and encourages us to walk to the mosque. Most of the time, older adults use cars to go to the mosque, although walking to the mosque is one of the easiest physical activities anyone can do…I think imams could have positive roles in promoting physical activity during Friday prayers and other social events (Physician, M, 51 Y old).*

In the current study, older adult participants mentioned praying and walking to the mosque as forms of PA, although no participants mentioned any role of the Imam in promoting PA among this age group. An interview with an Imam showed that religious leaders and representatives could be part of the multi-disciplinary approach to promote PA in the community; their role could be focused on increasing awareness of the religious aspect of being physically active in Islam.

*I think one of the barriers is that some people might think Islam has nothing to do with health, so they may not accept an imam talking with them on this issue. I think this can be counteracted by cooperating with specialists, such as health professionals, and asking them to participate in mosque lectures. For example, once I asked one of the doctors in our area to participate in a lecture about smoking held at my mosque. He talked to the people about the scientific, medical side of the issue, while I talked about the Islamic view on smoking and how Prophet Mohammad (peace and blessings be upon him) said, “There should be neither harming nor reciprocating harm”, meaning we should avoid anything that might negatively affect our health, such as smoking. So, I think the lack of understanding of the connection between health and Islam may be a barrier to promoting physical activity or any other kind of health promotion (Imam, M, 57 Y old).*

For example, health professionals could collaborate with Imams to deliver PA promotional programmes to the prayers and encourage them to participate in their neighbourhood mosque activities. Like Imams, collaborating with other community leaders, such as governors, selectmen and public figures could also have positive roles in promoting PA and improving awareness. This will help to create a culture that makes it easier for older adults to be active and enable PA in this population essentially.

In summary, to work on a population level, it was suggested to build an environment that encourages PA, establish and provide age-appropriate services and facilities for older adults and to extend the health professional role in the community by collaborating with community leaders such as Imams to promote PA in the community.

## 10.2.2 Using Technologies to Reach People in the Community

Several participants suggested that healthcare professionals should try to improve PA awareness among older adults by sending advice and messages using social media as it is one of the easiest ways to reach people in the community. According to participants, many Kuwaiti older adults are engaged in social media, such as Twitter, Snapchat and Instagram, so these programmes could aid the delivery of health professionals’ messages to older adults in the community.

*I feel more encouragement should be made available. For example, there are some doctors who use social media to teach exercises for knees, back and so on. This could really help us become more active (Hussain, M, 70 Y old, active).*

Areej referred to the experiences of her mother, Muneera, an active participant who was affected positively by PA educational messages on social media:

*I also follow some coaches on Instagram and try to do the exercises they post (Muneera, F, Active).*

Although Muneera was motivated by health messages delivered through technology, older adults’ responses to health messages are affected by several other factors, such as health and cultural beliefs, which will give variable results as discussed earlier in Section 8.4. This could again reinforce the need for a multi-disciplinary approach (including physicians, physiotherapists and social workers) and to target the relevant population from a different angle to achieve effective results.

A series of professional videos that teach older adults how to exercise at home is another suggestion to improve physical activity knowledge among this age group. The video should be short and the exercises should not require special equipment.

*I think [it is important to] have a public group focused on promoting physical activity among older adults and have professionals who specialise in providing services to people this age. For example, if a group of professionals makes a video series of older adults doing physical activity at home, the video should be short so they [the older adults] do not get tired, and [the exercises] should be done without the need for sports machines. I think this is an easy way of doing exercises the right way (Bashayer, F, 30 Y old, active).*

Using technologies to reach the population in the community and promote PA through health messages is one possible way to improve PA level, but it should be incorporated with other strategies to achieve a desirable effect.

# 10.3 Chapter Summary

In conclusion, there are several potential strategies for increasing PA among older adults in Kuwait that would be acceptable and culturally appropriate for this population, as suggested by participants of the current study. These strategies were based on intrapersonal and interpersonal level interventions, which depend on behaviour change models, and environmental level interventions which draw on a more ecological approach. To improve PA amongst older people in Kuwait, attention needs to be given to encourage older adults to incorporate PA into their daily routine by choosing activities that they enjoy and learning how to adjust their activities according to their surrounding environment, such as weather and family gatherings. Attention should also be given to improving health professionals’ role in promoting PA by using technologies to reach a large number of older adults in the community and by directly targeting older adults in the community by organising activities in mosques and first-generation *diwāniyyah*. A multi-disciplinary approach by liaising with community leaders such as Imams may allow for better dissemination of the promotional campaign. On the policy level, attention needs to be focused on building an environment that encourages PA, such as having a pedestrian-designated area to promote walking. Finally, providing places and services in the community specifically for older adults would be an acceptable and effective approach to improving PA among this population.

# CHAPTER 11 - DISCUSSION

# 11.1 Introduction

This chapter begins with a summary of the key findings, followed by a discussion of these results in detail by comparing them with and contrasting them to those in the literature. The chapter then proceeds by outlining the implications for policy and practice, as well as the strengths and limitations of the study. Finally, suggestions for future research and the study’s contribution to knowledge in this field are presented.

# 11.2 Summary of Key Findings

The systematic review presented in Chapter 4 concluded that most studies conducted in the GCC region were quantitative studies which did not provide rich detail regarding barriers and facilitators of PA. For this reason, this study is the first to use a qualitative methodology to understand older adults’ perceptions about physical activity in Kuwait. Key findings from the study identified barriers to PA on intrapersonal, interpersonal and environmental levels. Kuwaiti culture was found to impact PA engagement among older adults in several ways – for example, dependence on grown-up children and servants, dependence on cars for transportation as well as the conservative nature of the society, which restricted choices of activities, particularly for women. A lack of culturally relevant PA promotional policies (such as absence of national guidelines to promote PA) was another barrier to older adults’ PA engagement revealed by this study.

The findings from the study suggest that future interventions should involve a holistic approach to include the family as a whole instead of focusing on older adults individually. Creating a multi-disciplinary team consisting of health professionals and community leaders to reach more people in the community and engaging older adults and their families in a PA promotional program that focuses on pleasure and perceived choice as key motivators to PA were also suggested as possible future strategies. On the policy level, provision of facilities and services to older adults in the community and built environment will encourage the adoption of PA.

# 11.3 Discussion of Findings in Relation to The Existing Literature

The aim of this research was to use qualitative in-depth interviews to explore older Kuwaiti adults’ perspectives regarding PA, and these uncovered many factors influencing the PA behaviour of this population. In this section, the findings from the qualitative study (Chapter 7-10) and the systematic review (Chapter 4) are discussed in detail in the context of relevant literature.

## Influence of Culture on Older Adults’ PA

Several studies conducted in GCC countries have reported the influence of traditions and norms on the PA levels among the general adult population (Musaiger et al., 2014; Berger and Peerson, 2009; Ali et al., 2010; Mabry et al., 2013; Serour et al., 2007; Gawwad, 2008; Alkaabi et al., 2009; Amin et al., 2011). Similarly, traditions and norms were also found to have an impact on PA engagement among the older adult population in the current study. The main influences of culture on the PA engagement of older people included the influence of gender norms, age expectations, dependence on others and cultural perceptions of PA. These are discussed below in the context of other research conducted in the GCC region.

### 11.3.1.1 Influence of Gender Norms on Older Adults’ PA

Gender role expectations play a vital role in people’s behaviours, including PA, in many societies (Schmalz and Kerstetter, 2006; Lindsey, 2011). These gender norms are influenced by factors such as the religious and cultural beliefs of the society. The findings from the current study showed that modest clothing practices, such as wearing a hijab, were reported as a barrier to PA among a small number of physically inactive women. They believed that their physical appearance as Muslim women with a hijab restricted their opportunities to do PA outdoors. Similarly, Alkaabi et al. (2009) concluded that the traditional dress code was a restriction to outdoor PA among both genders in the UAE. A study in Oman reported that the traditional dress code affected women’s PA more negatively than men’s PA (Mabry et al., 2013). The need to wear swimming attire and sports garments had a negative impact on PA participation among young female students in the UAE (Berger and Peerson, 2009).

In addition to the influence of modest and religious attire on women’s PA levels, the current study also found that gender socialisation affects older men and women’s PA differently in Kuwait. For example, the traditional norms of modesty in Kuwait restricted many women’s outdoor PA options. In the interviews, some female participants reported that they were expected by society to stay away from any activity that could draw men’s attention to their bodies. The findings showed that because of gender norms, women’s outdoor opportunities were restricted to walking, whereas men had more choices, such as cycling and football. Several studies conducted in GCC countries have found similar results. For example, a cross-sectional study of university students in Oman reported that women were less likely than men to engage in PA, and when they did exercise, they were active for a shorter time (Li et al., 2015). A qualitative study conducted in the UAE of 75 women aged 20–60 years reported that socio-cultural norms such as family not permitting walking outside alone impeded PA (Ali et al., 2010). Similar views were found among Omanis (Mabry et al., 2013), Saudis (Amin et al., 2001) and Kuwaitis (Serour et al., 2007) who believed that women were subjected to a higher level of societal constraints compared with men in terms of outdoor PA. This gender disparity was believed to be a result of conservative norms (Li et al., 2015), indicating that some forms of outdoor PA are widely regarded as being inappropriate for women (Berger and Peerson, 2009), which was consistent with the findings of the current study.

By contrast, a qualitative study conducted in Qatar including 50 women (30 ± years old) found that the participants believed that, in the present time, Arab traditions do not have any negative effect on their PA participation, although they acknowledged that some people still hold these beliefs which inhibit outdoor PA for women (Donnelly et al., 2011). Another cross-sectional study explored the barriers to PA in Kuwait and included 100 participants from both genders (age range: 18–55 years, mean age: 29 years). It found that social norms were not considered a barrier to PA among Kuwaiti women and that all forms of PA could be performed without any constraints. This finding was attributed to Kuwaitis’ broader view of gender roles because of modernisation in Kuwait (Arab, 2006). Moreover, Al-Baho et al. (2016) conducted a cross-sectional study in Kuwait to investigate the level of PA and related barriers among Kuwaitis. The study involved 858 randomly selected participants, 70% under the age of 40. The authors found that only a small proportion of the participating women perceived traditional attire and social norms as barriers to PA. According to the findings of Al-Baho et al. (2016), these barriers were not significantly related to the PA level among women in Kuwait. However, the young age of the participants in the two aforementioned studies may have influenced the results regarding social norms, compared with the older participants in the current study. This suggests that gendered cultural expectations have evolved over time in Kuwait, and can be seen in, for example, changes in clothing traditions. The disparity in women’s perceptions between the current study and other studies conducted in Kuwait also suggest that women in Kuwait are not a homogeneous group and that their adherence to gendered societal norms are not necessarily the same.

Findings from the current study demonstrated that the conservative cultural norms in Kuwait also had an influence on mixed-gender interaction. Participants stated that a gender-segregated environment is the norm in many places and is usually an expectation or tradition. For this reason, the presence of the opposite gender in PA facilities was related to feelings of embarrassment among both genders, which often led to the avoidance of PA in public spaces, such as walking tracks. This is supported by findings from a qualitative study conducted in Turkey involving 43 women between the age of 27 and 55 years, which explored Turkish women’s perceived barriers to leisure-time PA. The study found that the availability of women-only PA facilities was an essential requirement for Turkish women’s PA (Koca et al., 2009). The Turkish women believed that gender-segregated facilities complied with their religious and conservative beliefs. Gender-segregated exercise facilities were also suggested by public health managers in Oman to have culturally sensitive interventions (Mabry et al., 2013). Similar suggestions were found among Qatari women (+30), who stated that recreational facilities should be culturally sensitive to the modesty norms (Donnelly et al., 2011) and among Emirati women (20-60 years old) (Ali et al., 2010).

There is evidence on the influence of gender norms on PA behaviour (and much of it qualitative), but very little research has explored the views of older women, and indeed men, as carried out by the current study.

### Influence of Age Expectations on PA

The current study showed that older adults in Kuwait on the whole were perceived as physically inactive by the majority of the participants. However, the participants’ own interpretation of the meaning of PA influenced how they categorised the older population in terms of PA engagement. For example, a small number of the participants perceived older adults as physically active if they were independent in performing work-related and ADL activities, while the majority who perceived them as physically inactive described PA more as structured activities, such as regular exercises, working out in the gym or walking. Findings demonstrated that cultural perceptions of the ageing population discouraged physical activity among older adults, as the participants felt that there was a cultural expectation that older people should not be physically active. As a result, PA in this population was considered the exception, not the norm.

In Kuwait, similar to many other Arab countries, physical abilities were expected to decrease with age, and this decline was considered a part of the normal ageing process (Kronfol et al., 2013). For this reason, physical inactivity among older Kuwaiti adults was perceived by the participants as a normal part of the ageing process. Most of the participants accepted, normalised and internalised this cultural norm and adapted to it by doing less-demanding activities – for example, walking, which was perceived as more suitable than running or football. The influence of age expectation on older adults’ PA level has been documented in several studies conducted in the West (Pelssers et al., 2017; Lineweaver at al., 2017). For example, a cross-sectional study in the USA investigated the relation between physical ageing beliefs and older adults’ PA engagement (Lineweaver at al., 2017). The study included 56 young adults (aged 18–22) and 49 older adults (aged 64–100); the findings showed that both younger and older adults believed that physical abilities declined with age and that older adults’ perceptions of social norms and stereotypical beliefs influenced their PA behaviour. The authors reported that older adults engaged in more moderate-intensity than vigorous or muscle-strengthening exercises because they believed that this type of exercise (moderate intensity) was what other older adults most typically do (Lineweaver et al., 2017). Similarly, Pelssers et al. (2017) conducted a cross-sectional survey in Belgium that included 409 older adults (mean age: 68 years) to investigate if perceived age norms explained autonomous exercise motivation among older adults. Half of the participants in that study believed that a minority of the over-55-year-olds in the society exercised, although 85.6% of the participants reported that older adults should exercise. Furthermore, 64.8% of the participants also believed that exercise is typical for people 55 years old and younger. The results showed a relationship between older adults’ norms and their autonomous motivation to exercise (Pelssers et al., 2017). Pelssers et al. (2017) indicated that age is more of a factor than culture when it comes to beliefs about the decline of physical ability, which supports findings from the current study. For example, in the current study, participants associated age expectations with embarrassment to perform PA. For example, some participants reported feeling embarrassed to wear sports clothes or even to do exercises, as they perceived these as inappropriate for their age. In contrast, embarrassment was found to be associated with cultural norms rather than age in studies conducted in UAE and Saudi Arabia. Alkaabi et al. (2009) found that embarrassment to wear sportswear was also seen as a barrier to PA among 390 patients (mean age: 52 ± 9.9) in a cross-sectional study conducted in the UAE. Cultural conceptions of PA and age were also believed to be linked to being embarrassed and staying away from PA among 329 patients (23–56 years old) in Saudi Arabia (Abozaid and Farahat, 2010).

Findings from the current study showed the negative influence of cultural norms on older adults’ PA level after retirement. Participants believed that reduction in work-related PA after retirement was not replaced by leisure-time PA, so the PA level was decreased, especially among physically inactive older adults. A similar finding was reported in AboZaid and Farahat’s (2010) study, which was conducted in Saudi Arabia and found that people 50 years old and above were less active than younger people because of the reduction in work-related PA after retirement. By contrast, a systematic review that included 19 studies from the US and Europe reported that leisure-time PA increased after retirement because of the availability of free time (Barnett et al., 2012). This difference in PA adoption after retirement between populations in the West and Middle East may be related to environmental and cultural differences. For example, some participants from the current study believed that the cultural perceptions and expectations of older adults in Arab countries affected the PA level negatively. Many older adults believed that they were capable and could further contribute to their society, but they were not given the chance because of the cultural expectations of older adults in Kuwait. In turn, this enforced a feeling of isolation, frustration and boredom. They also believed that older adults in Western countries did not experience this tension between cultural norms and desires; as such, they were able to engage in more PA. Notably, a small proportion of the current study’s participants did not comply with the cultural norms regarding ageing; these people showed a positive perception of the ageing process and PA and perceived themselves as physically active.

Previous habits were another perceived reason for the differences in PA levels among older adults from GCC and Western countries. Participants felt that older adults in the West integrated PA habits into their daily routine from a young age, and this helped them to improve and maintain their PA level in older age while most older adults in Kuwait did not have any previous habits of PA. Participation in PA later in life has been linked to participation in PA early in life in several previous studies (Ferrand et al., 2012; Goyder et al., 2014). According to Weeks et al.’s (2008) study of 17 community-dwelling participants and seven nursing home residents, positive past experiences (being active) acted as motivators for PA among older adults. Beck et al. (2010) also found that lifelong PA practices were associated with the maintenance of PA in retirement. Similar results were found among women; for example, Bjornsdottir et al. (2012) and Balbale et al. (2013) both found that older women with former physically active lifestyles usually stayed active when getting older. On the other hand, no or negative past experiences with PA may prevent any attempt to be active in the future (Weeks et al., 2008; Stathi et al., 2012). Similarly, a former inactive lifestyle was found to be a barrier to adopting PA (Bjornsdottir et al., 2012; Balbale et al., 2013). However, Stathi et al. (2010) found that past PA behaviours did not have any influence on later PA engagement among 21 older adults (70 years and above) in the UK. People who are physically active when younger are more likely to continue with PA at an older age. However, the evidence from prior research doesn’t suggest that this is ‘culture’ specific and seems to be the case across a wide range of countries.

### 11.3.1.3 The Culture of Dependence on Others and its Influence on Older Adults’ PA

Depending on grown-up children to provide care to older adults is a cultural norm in Kuwait, and it was reported as a barrier to PA by the participants of this study. The culture of filial piety, which is perceived as a religious duty, can reinforce physical inactivity among older adults because they are served the whole time and are not given the chance to do activities of daily living independently. However, a difference in the response to this cultural norm was noted between physically active and inactive participants in the study, with active participants trying to be more independent. A power struggle was also found between parents and adult children, as children perceived the care they provided as a duty they have to their parents. On the other hand, older adults felt disappointed because of the lack of independence to do activities of daily living, and at the same time, they did not wish to offend their children by refusing their care. This finding has not been reported previously in any other study conducted in GCC countries, although a similar cultural norm of children taking care of older adults was reported as a barrier to PA in New Zealand. Twenty-four older Tongans (aged 60–79 years old) participated in a qualitative study (focus groups) to explore perceived barriers to PA in Tongan society (Kolt et al., 2006). The over-safeguarding provided by children hindered Tongan older adults from many activities (Kolt et al., 2006).

### 11.3.1.4 Changing Cultural Perceptions of PA Over Time

In the past, before the significant economic development in Kuwait, Kuwaitis perceived PA to be work-related activities, such as housework, physical labour or commuting (on foot), which were a part of daily life rather than a choice. For this reason, Kuwaitis were perceived by the participants of this study as physically active in that era, and factors such as weather, modesty or dress code were not considered to hinder PA. The current study found that cultural perceptions of PA had changed over time in Kuwait. Wealth and modernisation after the discovery of oil have led to a culture of dependence on domestic workers, such as servants and drivers, which participants reported as a barrier to PA among all Kuwaitis regardless of age. Even physically active participants reported a dependence on maids for housework, which negatively influenced the pursuit of activities of daily living. This supports similar findings on the adverse impact of dependence on servants which have been reported in studies in many GCC countries (Donnelly et al., 2011; Ali et al., 2010; Mabry et al., 2013). A previous survey study that was conducted in Kuwait by Serour et al. (2007) and included 334 participants from both genders (aged 27–74 years) found that 54.1% of the participants expressed that their PA level was negatively affected by the large number of servants in the house.

Participants from the current study reported that affluence and hot weather increased the dependence on cars for transportation, which, in turn, negatively affected the PA level of both physically active and inactive participants. Similarly, qualitative and quantitative studies from GCC countries also acknowledged the dependence on cars for transportation and its unfavorable impact on the daily PA of adults (Donnelly et al., 2011; Mabry et al., 2013; Serour et al., 2007).

Although the cultural perceptions of PA have evolved towards defining PA as a leisure activity, the findings from the current study showed that most participants did not engage in PA activities during their leisure time. The collectivist nature of Kuwait as an Arab society places considerable significance on social gatherings, with a focus on food and sedentary activities. This culture has a negative impact on the PA level among Kuwaitis, as it encourages physical inactivity. Similar findings have been reported in a cross-sectional quantitative study conducted in Kuwait which included 100 adults (aged 18–55 years old) (Arab, 2010). Results from Arab’s (2010) study showed that an active social life and frequent social gatherings promote unhealthy dietary habits and physical inactivity. Another prospective study conducted in Kuwait (Serour et al., 2007) also reported a similar negative influence of frequent social gatherings on PA levels among 59.6% of the participants. Ali et al.’s (2010) qualitative study found that social obligations were prioritised over other activities, including PA, among diabetic Emirati females. Additionally, a qualitative study exploring the factors affecting the health-related choices (PA, diet and smoking) of Qatari women (n=50, +30 years old) with coronary vascular disease found that being busy socialising decreased PA levels (Donnelly et al., 2011).

Older Kuwaitis do not engage in PA during their leisure time for a number of reasons. Findings from this study showed that many older participants, both those perceived as physically active and inactive, equated relaxing with being sedentary. They believed that they engaged in too much work-related PA in the past (for example, house work and child care), which had adverse consequences on their health, so now, they believed that they should be rewarded for their hard work by being sedentary. Weeks et al. (2008) found a similar negative influence of past family responsibilities, such as providing care to children, on older Canadian women’s PA, such that rest was preferable in later years.

## Laziness and Internalisation of PA

Laziness was one of the most frequently reported barriers to PA by participants in the current study. The majority labelled inactive people as ‘lazy’ including themselves. For example, some participants perceived dependence on maids for housework as laziness; they also perceived retired inactive older adults as lazy. They believed that physical inactivity is a personal choice and that all barriers to PA are just excuses. Participants with this ‘victim blaming’ point of view perceived inactive people as the only ones responsible for their health behaviour, thereby relieving the wider cultural context from any responsibility. The findings showed that participants internalised the cultural norms of inactivity in Kuwait and made these their own beliefs. This negative personal judgment might be expected more in individualistic cultures, such as the US and the UK, because of the expectation that people look after themselves and their health is their responsibility (Cook, 1999). But it was reported among older Kuwaiti participants, as well, this could be a consequence of industrialisation following the discovery of oil, and was shown to have a negative influence on their PA. Similarly, a study conducted in the UK found a negative effect on health and well-being of participating women who blamed themselves for their perceived defeats in engaging in health-promoting behaviour (Peacock et al., 2014). The women in this case perceived all sorts of collectivity, solidarity and turning to others as non-acceptable and also believed that a person’s life was considered to be one’s own responsibility (Peacock et al., 2014).

## Understanding PA Motivation Among Older Kuwaiti Adults

Lack of motivation can lead to physical inactivity; in this study, lack of motivation was reported as a barrier to PA among participants and was related to the feeling of laziness. A previous study identified lack of motivation as a barrier to PA adoption among Omanis (Mabry et al., 2013), Emirati women (Ali et al., 2010; Berger and Peerson, 2009) and Kuwaitis (18–55 years old; Arab, 2006). Moreover, lack of willpower was a barrier to PA in a cross-sectional study of 450 adults (15–80 years old) conducted in the KSA (Al-Quaiz and Tayel, 2009). In contrast, several studies have stressed the importance of motivation for the adoption of an active lifestyle (Antikainen et al., 2010; Lin et al., 2007). Bjornsdottir et al. (2012) conducted a qualitative study in Iceland, where 10 older women (72–97 years old) living in a retirement community were recruited for an in-depth study of their lived experience of facilitators and barriers to PA. The authors concluded that motivated older adults may not only be able to adopt PA, but also adhere to it. Therefore, one of the main objectives of the current study was exploring perceived motivators for PA among older adults in Kuwait. An understanding of motivation is deemed essential for developing culturally sensitive recommendations for PA promotion among older adults in Kuwait in an acceptable, effective manner. The motivators identified are outlined below.

### 11.3.3.1 Perceived Choice

The most preferred PA among participants in the current study was walking, followed by swimming, while structured PA, such as attending gyms, was not favoured among most participants. The participants reported that perceived choice was an important motivator for their PA behaviour, as it gave them a sense of autonomy. They preferred walking, for example, because it can be done whenever and wherever they want. This flexibility of choice was perceived as lacking in a structured PA environment, such as gyms (other barriers to gym usage are discussed in detail in Section 8.3.5.3). Similarly, a survey study of 213 older adults (aged ≥ 65 years old) examined motivational processes influencing PA among older adults in Australia, and found that providing activities that promote feelings of autonomy could help in internalising the value of regular PA and thus increasing PA levels among older adults (Arnautovska et al., 2018)

### 11.3.3.2 Pleasure as a Key Driver of PA

Pleasure was another essential perceived motivator for PA in Kuwait among participants. The older adults interviewed preferred to adopt activities they found enjoyable such as walking and swimming. This finding supports other research conducted in the UK which has found enjoyment to be a strong influencer of exercise, as it can improve older adults’ mood and give them more energy, which may help in their adherence to PA (Hardy and Grogan, 2009; Horne et al., 2012). Evidence from the UK and France demonstrates that, unlike inactive people who try to participate in exercise because ‘it is the right thing to do’, active older adults usually enjoy PA (Beck et al., 2010; Ferrand et al., 2012). Moreover, a qualitative study conducted in the USA that included 10 older adults reported that fun is one of the important motivators to PA adherence among older adults participating in athletic competitions (Heo et al., 201). In another qualitative study conducted in Ireland which included 29 older adults, enjoyment was also found to be a motivator for PA among frail older adults (Broderick et al., 2015). Research carried out in the GCC countries also demonstrated that having fun and spending free time participating in enjoyable activities motivated people in younger age groups to be more physically active, such as by engaging in sports competitions (AboZaid and Farahat, 2010; Al-Gilany and Al-masry, 2011; AlRefaee and AlHazzaa, 2001; Khalaf et al., 2013; Li et al., 2015; Majeed, 2015; Samara et al., 2015). In contrast, lack of enjoyment has been found to prevent older adults from participating in PA (Beck et al., 2010; Stathi et al., 2012). A survey conducted with a sample of 100 Kuwaiti males and females (18–55 years) showed that feeling bored when exercising was a barrier to PA (Arab, 2006); lack of interest in exercise was also a barrier among adults in the GCC countries (Al-gilany and Al-masry, 2011; Amin et al., 2011; Arab, 2006; Awadalla et al., 2014; Musaiger et al., 2014; Samara et al., 2015).

Findings from the current study demonstrated that since their work-related PA had ended, participants did not go on to choose PA for leisure (as discussed earlier in Section 11.3.1.4). At the same time, participants also reported that if they did engage in PA, they would favour leisure-time PA over other types of PA, as fun seemed to be a component of these leisure activities. When asked to give ideas on how to improve the PA level among older adults, participants suggested taking up a hobby to improve PA levels, especially after retirement. Photography, cooking, fishing, going to picnics and gardening were all perceived as hobbies that could attract older adults, although these do not all relate to PA. Engaging in hobbies as enjoyable activities during leisure time was perceived to improve overall PA among older adults, especially after the reduction in work-related PA that is usually associated with retirement among Kuwaitis. These leisure activities were not only perceived as fun, but their benefits could extend to helping older adults in feeling more involved in their environment and giving them a sense of purpose. Similarly, Beck et al. (2010) used self-determination theory perspectives to examine the effect of retirement on PA patterns among 11 white British males and females. Semi-structured interviews were conducted to gain an in-depth understanding of the process of starting and continuing behavioural changes in PA. Data analysis showed that sense of purpose was one of the main motivations to adopt PA. Furthermore, all participants (active and inactive) were found to look for new challenges to substitute for the challenges that were once provided by work, although inactive participants may seek challenges from non-exercise domains.

### 11.3.3.3 Physical Activity and social Support

Group activities were perceived to have an influential role in participants’ PA in this study. The social aspect of engaging in PA was viewed as an important factor in terms of having fun among some of the study participants, which was believed to improve their PA levels. This preference for group activities is consistent with the collective nature of Kuwaiti culture, where socialisation is highly valued, as discussed previously. Li et al. (2015) also found that the social factors associated with PA were more important to Omani and Pakistani university students than they were to American students due to the communal nature of the cultures in Oman and Pakistan. Some male participants in the current study emphasised socialisation in their perceived pleasure and PA motivation. They reported that they were not having as much fun in the PA they were doing as older adults as when they were younger. They explained that, in the past before they switched to walking, they engaged in team sports, such as football, where they interacted and socialised with groups of people and enjoyed their time together while playing. The absence of the fun element of socialisation negatively affected their motivation for PA, and as a result, their PA engagement was reduced. Similar findings on the importance of group PA for older adults were reported in a qualitative study exploring the experiences of older adults who engaged in routine group exercise as a component of a community-wide PA intervention in Japan (Komatsu et al., 2017). Here, four focus group interviews were conducted that included 26 older adults with a mean age of 74 years. The regular group exercise contributed to older adults’ perceived health in many ways. First, the socialisation aspect of the intervention not only improved enjoyment of the activity, but also helped the older adults in enjoying life, being more active and going out more frequently. Second, the participants felt socially connected due to the intervention; the participants expanded their communication beyond the group exercise and planned social activities together (Komatsu et al., 2017). Group activities could help minimise the feeling of isolation that is sometimes associated with retirement, as discussed previously.

Another qualitative study explored health resources in relation to PA among physically active older women (aged 69–75 years) in Sweden (Ericson et al., 2017). Fourteen physically active women who had previously participated in a resistance training intervention and continued to engage in PA after the end of the programme were interviewed. The findings showed that the group PA provided a significant and coherent means for older women to adhere to PA in their lives. Many health resources were identified as related to PA, such as caring for others, enjoying togetherness (social relations) and a sense of community that expanded beyond the PA to other social activities (Ericson et al., 2017). Many participants from the current study perceived that having a supportive PA partner helped them to spend more time in PA and overcome some of the barriers. They also acknowledged that doing activities with people they loved helped older adults to be more physically active; for example, many women reported higher levels of enjoyment when their adult children and their female friends joined them in walking. In addition to the fun and social aspects of having a companion, this was also perceived to provide a sense of safety, especially for women when doing PA outdoors or at night.

Heo et al. (2013) found that social networking, which included social belonging and interaction with others, was important for maintaining activity levels among athletic older adults in the USA. Being identified as a senior athlete was also found to motivate older adults in maintaining their activity level, supporting their sense of self and making them known by others (social identity). In a mixed-methods study examining the perceived motives for engaging in PA among active French older adults (Ferrand et al., 2012), social interaction was found to provide related benefits to the participants and motivate them to continue attending the PA programme. In addition, Dunlop and Beauchamp (2013) conducted a case study to examine the beneficial elements of an all-male older adult exercise programme in Canada. Nineteen semi-structured interviews were conducted to gain an in-depth understanding of the factors that helped participants in adhering to their programme. The data analysis revealed social connectedness as one of the main themes. In this theme, demographic homogeneity among the group was an important motivator, as all the participants were men of a similar age, so they shared understanding and beliefs.

Interpersonal comparisons among peers provide motivation for successful ageing, as seeing other active peers as role models motivates the rest of the group. However, in England, Beck et al. (2010) found that being a member of a structured group was less valuable among older men in establishing PA compared with women, who saw being part of a group as an important reason for attending exercise classes. This may highlight the potential for gender differences in the determinants of PA, while in the current study, doing PA as a group was reported by both genders as a determinant of PA. Enjoying being with others was a motivator for participating in PA programmes designed for older adults in the United States (Biedenweg et al., 2014). Being part of a group also improves one’s sense of belonging. This may motivate participants to adhere to a PA programme even if they dislike it, since they may feel that it has social benefits (Horne et al., 2012). Horne et al. (2012) also found that older adults prefer to walk as a group over walking alone. When asked about their suggestions for how to overcome PA barriers, non-exercisers suggested exercising in groups and having a buddy system (Lees et al., 2005). Social support, such as having other women to walk with, helped Emirati women (20–60 years old) in staying physically active (Ali et al., 2010). Socialisation, meeting others and involving family and friends in PA could motivate people in GCC countries (UAE and KSA) to be more active and adhere to regular PA (Al-gilany and Al-masry, 2011; AlKaabi et al., 2009; AlRefaee and AlHazzaa, 2001; Berger and Peerson, 2009; Khalaf et al., 2013; Samara et al., 2015).

A lack of PA companions was perceived to deter participants, especially women, from engaging in PA in the current study. For example, a lack of spousal companionship was reported to discourage PA among older female participants. Similarly, nonparticipation of friends and a lack of peer support were barriers to PA participation among young Emirati women (Berger and Peerson, 2009). In addition, lack of company when performing PA was a barrier among Saudi adults, especially among women, who cannot go outdoors to exercise alone due to cultural norms (Amin et al., 2011). Furthermore, the lack of a PA partner was a common barrier to PA identified in many other studies conducted in GCC countries (Samara et al., 2015; Serour et al., 2007; Khalaf et al., 2013). Not belonging to a group was described as a perceived barrier to endorsing PA among older adults in England and the United States (Beck et al., 2010; Biedenweg et al., 2014). A lack of peer encouragement was also a barrier to being active in Iran (Abolfazl et al., 2011). Lack of social engagement and a social network may increase the feeling of isolation and loneliness (Balbale et al., 2013; Broderick et al., 2015; Cassou et al., 2011).

To gain a more in-depth understanding of the role of the social environment in older adults’ PA in Kuwait, the current study also explored the influence of significant others in participants’ lives and PA behaviour. The aim was to identify how significant people in participants’ lives influenced their PA level. This is discussed in the next section.

## 11.3.4 The Influence of Significant Others on Older Adults’ PA

In the current study, spouses, grown-up children and friends were perceived to be significant others in the lives of participants and were believed to have a positive and/or negative effect on participants’ PA. Social support was reported in the form of offering to do joint activities, providing verbal advice and offering practical support, such as by purchasing sports equipment and providing transportation to a PA facility. Lack of social support and encouragement was reported as a barrier to PA.

Offering to perform activities jointly was one of the reported means of spousal encouragement towards PA, which was perceived to have a positive influence on the level of PA among participants. Spousal encouragement was mostly gendered, as men tended to encourage and support women rather than the other way around; this could be a result of the possible influence of social control and power within spousal relations and the traditional patriarchal nature of Kuwaiti culture which is still practiced among some families. In contrast, a qualitative study conducted in the UK explored how couples influence each other’s PA behaviour during retirement. Seven retired couples (14 participants, aged 63 to 70 years) were recruited, and semi-structured interviews were conducted (Barnett et al., 2013). Data analysis showed that spousal support was perceived to be an important motivator for adopting and regularly engaging in PA, especially among partners who engaged in the same level of PA; on the other hand, inactive partners perceived spousal support as a form of pressure or unwanted social control. Joint PA was rare because partners had diverse interests; as a result, regular exercise was an independent and individual habit. Separate participation in PA was perceived to give each partner personal space and time away from the spouse after retirement, while also enabling the partner to socialise within the same gender group. In addition, Barnett et al. (2013) observed spousal support to be gendered as women usually provide verbal encouragement, while men provide practical support with tasks including transportation or helping with the housework in order to allow the partner time to exercise. Again, this is similar to findings from the current study regarding patriarchy in spousal support, as due to the traditional roles of men and women in the family.

Participating in joint activities with friends also played a positive role in improving participants’ PA in Kuwait. The participants believed that people of a similar age who participate in activities together can encourage older adults to adopt and regularly engage in PA. The high level of trust between friends was also believed to reinforce the positive influence of social support offered by them. The participants of the present study also reported that friends were the best alternative companion when the spouse was unavailable to accompany them when engaging in PA. Consistent with this, support from peers was found to be a strong motivator in previous studies (Bjornsdottir et al., 2012). In the UK, Hardy and Grogan (2009) found that peer support may improve self-efficacy as older adults feel more confident and comfortable when attending classes with peers who share the same difficulties and goals.

Verbal advice from relatives (mostly grown-up children) also encouraged some participants to be more physically active. Kinship and regular contact between relatives were also reported in this study to help them understand the needs of older adults and accordingly provide advice that aligned with their beliefs and motivations and motivated them to engage in PA. Several studies have reported that social support was one of the strongest motivators of PA among older adults (Vaughn, 2009; Antikainen et al., 2010; Mathews et al., 2010; Bjornsdottir et al., 2012; Mahmood et al., 2012). Lin et al (2007) found that older Chinese adults living in the US were more active as compared to older Chinese adults living in Taiwan because the former had more social and family support. Broderick et al. (2015) also found that support from family was a strong influencer when it came to exercise among frail older adults in Ireland; this kind of support was manifested either in family members directly advising them and asking them to exercise or through indirect means by involving them in some activities together, such as playing with their grandchildren. Social support was also observed to be an enabler of PA in a qualitative study that explored the factors influencing Qatari women (n = 50, aged 30 years and above) with coronary vascular disease to make healthy choices (in terms of PA, diet and smoking) (Donnelly et al., 2011).

In the present study, practical support motivated participants to engage in PA and was mostly provided by grown-up children. This type of encouragement was seen in the purchase of sports equipment or in transporting the parents to a PA facility. Belza et al. (2004) also found that family support in purchasing exercise equipment, providing transportation and encouragement motivated older adults to regularly engage in PA. Although the participants of the present study acknowledged the positive influence of grown-up children in providing practical support on older adults’ PA, it was believed to be unsustainable because it was not tailored to older adults’ needs and preference. The findings revealed a discrepancy between the parents’ needs and desires and the children’s presumptions about their desire or preference. For example, the children believed that purchasing sports equipment for the parent would enable the latter to become more active, whereas the parent did not necessarily enjoy exercising and preferred taking walks along the walking track with the children. This suggests that in order for the support provided to be effective, it should be tailored to the needs of older adults and in line with what they desire.

On the other hand, the lack of encouragement from spouses, as observed in men who not did permit their wives to engage in outdoor PA due to conservative social norms, was a deterrent among participants in the present study. Additionally, spousal criticism of PA was also believed to have a negative effect on the level of PA among older women, although the response to such criticism was dependent on the marital relationship, value placed on PA and individual perceptions of the partner’s influence. Similarly, a lack of family encouragement was found to be a barrier to an active lifestyle among Iranian older adults (Abolfazl et al., 2011), Saudi adults (AlQuaiz and Tayel, 2009) and adults (n = 390, mean age 529.9) living in the UAE (Alkaabi et al., 2009). Family could also have a negative influence when they discouraged older adults from performing routine housework or prevented them from exercising (Broderick et al., 2015). A cross-sectional study conducted in the KSA, including 2,176 adults (aged 18 to 64 years), showed that family approval was an important determinant of whether individuals engaged in PA for leisure, especially women (Amin et al., 2011). In this case as well, conservative norms had an impact on women as it resulted in the lack of support from their families. For example, young inactive Emirati women stated that they were discouraged from taking part in sports upon reaching adolescence (Berger and Peerson, 2009). Objection from family members, especially the parents (Awadallah et al., 2014; Al-gilany and Al-masry, 2011) and the husband, was another restriction that women faced when considering PA. Some women were forbidden by their families from visiting PA facilities (AlKaabi et al., 2009), especially mixed-gender ones (Musaiger et al., 2014).

In the present study, physically inactive friends were also found to have a negative influence on participants when it came to PA, as such individuals usually tend to encourage sedentary social activities, such as gathering in the *diwaniyyah*. In studies conducted in the GCC region, the lack of social support and encouragement from friends (Al-gilany and Al-masry, 2011; Berger and Peerson, 2009; Musaiger et al., 2014; Gawwad, 2008; Awadallah et al., 2014) was a frequent barrier to PA, although these studies did not provide details on the ways in which this lack of support was manifested.

## 11.3.5 Additional Physical Activity Influencers

Other influences on older adults’ PA reported in this study have also been well documented in previous research around the world. These factors are summarised below.

### 11.3.5.1 Influence of the Climate and Physical Environment

The climate was found to affect Kuwaitis’ PA level negatively in the current study, as hot, humid weather during the summer limits outdoor PA choices. Many other studies reported similar negative effects of hot weather on outdoor PA in Qatar (Al-Mohannadi et al., 2014; Donnelly et al., 2011), Oman (Mabry et al., 2013), the KSA (Al-gilany and Al-masry, 2011; Al-Reshidi, 2016; Amin et al., 2011; Awadalla et al., 2014; Gawwad, 2008; Samara et al., 2015), the UAE (Ali et al., 2010; Alkaabi et al., 2009; Berger and Peerson, 2009) and Kuwait (Arab, 2006; Musaiger et al., 2014; Serour et al., 2007).

Cooler weather during winter and spring were reported as motivators for PA among Qatari women (30+ years; Donnelly et al., 2011) and Emirati women (20–60 years; Ali et al., 2010). This was supported in the current study, as older adult participants suggested incorporating more outdoor activities, especially in desert camps, to improve PA levels during the winter months in Kuwait, while doing indoor activities in malls and mosques during summer.

Physical environment was also found to influence PA level among older adults in the current study. Many participants reported the poor street infrastructure as a barrier to PA in Kuwait; for example, using pavements as parking spaces for cars made it difficult to walk in the neighbourhood. In Kuwait, the poor walking infrastructure contributed to the culture of not walking, and in turn the culture also influenced the infrastructure. This was consistent with studies conducted in Ireland, Iceland, the USA and Canada, which reported poor outdoor areas as barriers to walking among older adults such as the lack of or damaged pavements (Broderick et al., 2015; Bjornsdottir et al., 2012; Gallagher et al., 2010; Mahmood et al., 2012).

Findings suggested that giving more attention to the physical environment and making the streets more suitable for walking by having designated pedestrian areas with appropriate shading, misting, seating and protection from traffic could be used as a strategy to encourage walking in Kuwait. Similarly, culturally sensitive interventions related to infrastructure, such as building sidewalks, were suggested by public health managers in Oman (Mabry et al., 2013). Additionally, the presence of public walking tracks and trails also motivates PA among older adults in the USA, UK and Canada (Gallagher et al., 2010; Stathi et al., 2012; Mahmood et al., 2012).

### 11.3.5.2 Perceptions of Role Demands and a Lack of Time

The data showed that the perceptions of role demands and a lack of time influenced older people’s PA differently. For many participants in this study, role demands and a lack of time were common barriers to PA. This is consistent with many other studies conducted in the GCC countries (Al-gilany and Al-masry, 2011; Alkaabi et al., 2009; Al-Otaibi, 2013; Awadallah et al., 2014; Berger and Peerson, 2009; Serour et al., 2007). Not prioritising PA was also a barrier to being physically active (Al-gilany and Al-masry; 2011; Al-Reshidi, 2016; Awadalla et al., 2014); this was also found in the current study. The Arab norms prioritise family needs over personal ones, which reduces the amount of free time people have for independent pursuits, thereby affecting their PA level negatively if they see PA as something to be done individually. To fit in more with these cultural practices, family-based PA activities are recommended. The current study also showed that people’s own personal definition of and perceptions of what counts as activity affected how they perceived barriers and facilitators of PA. For example, people who thought that their role demands were incompatible with PA perceived their responsibilities as barriers to PA, while the perceptions of compatibility of the role demands with PA facilitated PA among older people; this was consistent with previous studies (Broderick et al., 2015; Cassou et al., 2011; Horne et al., 2012).

### 11.3.5.3 The Use of Formal PA Facilities

Gyms in Kuwait were not preferable and did not attract older adults in the current study for many reasons. Al-gilany and Al-masry (2011) and Awadalla et al. (2014) also reported that Saudi university students preferred not to attend sports venues, although no details were given in these publications to justify this preference. One of the most frequent barriers to gym participation among older adults in the current study was the lack of proper supervision and training in these facilities. This inadequacy of supervision increased the fear of injury among this population. Similar findings concerning the importance of exercise supervision were documented by Dunlop and Beauchamp (2013), Bjornsdottir et al. (2012) and Horne et al. (2010). The lack of an age-appropriate environment also affected older adults’ enrolment at gyms negatively, as comparing themselves to youths affected their confidence in their physical abilities. A lack of age-relevant classes also prevented older adults from engaging in PA in the United Kingdom (Hardy and Grogan, 2009). The female participants in the current study mentioned high subscription fees as a barrier to gym use; this barrier was documented in many other studies conducted in the GCC countries (Al-gilany and Al-masry, 2011; Alkaabi et al., 2009; Awadalla et al., 2014; Berger and Peerson, 2009; Gawwad, 2008; Musaiger et al., 2014). However, this result is contrary to Arab’s (2006) findings, in which the cost of exercise was not an important factor affecting PA participation among Kuwaitis due to their high socioeconomic status. In Kuwait, these people can afford other expenses (e.g. a maid, a driver), and so it might be that they are prioritising what they spend their money on, in the same way as with time. A lack of perceived choice, especially the lack of opportunity to choose the type and time of exercise, gave a feeling of inflexibility and deterred older adults in this study from enrolling at gyms. The inconvenience of PA facilities’ locations also had a negative influence on older adults’ participation. Other studies conducted in the GCC countries also reported a lack of transportation to and from the PA venue as a barrier to PA among Kuwaitis (Arab, 2006), Saudis (Samara et al., 2015), Emiratis (Berger and Peerson, 2009) and Omanis (Mabry et al., 2013).

### 11.3.5.4 Influence of Health Conditions and Health Beliefs on PA

In the current study, health was found to have both positive and negative influences on PA engagement among older adults. Chronic diseases, pain and depression were all found to negatively influence the level of activity among older adults, as they believed that PA could worsen their conditions. These findings suggested misconceptions about pain during and after PA among Kuwaitis. It also suggested misconceptions about the importance of PA in the health of older adults among Kuwaitis. Similar findings were also documented in previous studies conducted in GCC countries (AboZaid and Farahat, 2010; Alkaabi et al., 2009; AlRefaee and AlHazzaa, 2001; Ali et al., 2010; Amin et al., 2011; Arab, 2006; Gawwad, 2008; Khalaf et al., 2013; Serour et al., 2007). Obesity also prevented the participants in the current study from engaging in PA, especially women; similar results were reported by Berger and Peerson (2009) and Musaiger et al. (2014). Obesity influenced feelings of embarrassment and affected participants’ confidence in their abilities and body shape. Likewise, body weight and appearance were also related to the feeling of embarrassment in the GCC region (AboZaid and Farahat, 2010; Alkaabi et al., 2009; Al-Otaibi, 2013; Awadalla et al., 2014; Gawwad, 2008; Samara et al., 2015), as well as in a qualitative study that explored attitudes to exercise among adults with type 1 diabetes in the United Kingdom (Lascar et al., 2014). In contrast, some participants from the current study reported that having good health was a barrier to PA, as older adults feel that they do not need it.

Some participants expressed that older adults with positive health beliefs towards PA are motivated to be more physically active. The desire to prevent declining health and illnesses motivated some participants to adopt PA. Some of the perceived health benefits of PA in the current study were avoiding or reducing pain, obesity and stress; looking younger; and maintaining their independence. Studies conducted in GCC countries also reported that positive health beliefs motivated adults to be more active (AboZaid and Farahat, 2010; Al-gilany and Al-masry, 2011; AlRefaee and AlHazzaa, 2001; Gawwad, 2008; Khalaf et al., 2013; Li et al., 2015; Majeed, 2015; Samara et al., 2015). Some older adults believed that because they were more prone to diseases than younger people, they were and should be more active. In many cases, fear of developing a disability or chronic disease motivated older adults to adopt PA. However, fear of falling or sustaining an injury due to the reduction in physical abilities associated with ageing and health conditions was also a barrier to PA among many older adults in the current study. Fear of failure or injury due to a bad previous personal experience was also reported in many GCC-region studies (Al-gilany and Al-masry, 2011; Alkaabi et al., 2009; Amin et al., 2011; Awadalla et al., 2014). Older adults’ fears were affected by negative warning messages received from their social circle, including family and friends. Such fears were also influenced by people’s perceptions of the importance of PA in health and ageing. Fear of falling/injury seems to be a universal barrier to older adults’ PA across most cultures.

## 11.3.6 The Need for Awareness and Promotion of Physical Activity in Kuwait

Many of the barriers to PA identified in the current study resulted from a lack of awareness regarding the role of PA in healthy ageing. A lack of knowledge about the importance of PA in older adults’ lives was reported not only among older adults but among their family members as well. Ignorance about the benefits, value and importance of physical activity (Awadalla et al., 2014; Mabry et al., 2013; Khalaf et al., 2013; AlRefaee and AlHazzaa, 2001); misconceptions regarding the relationship of PA to ageing and different medical problems (Arab, 2006; Alkaabi et al., 2009); and a lack of knowledge and sports skills (Allafi and Waslien, 2014; Al-gilany and Al-masry, 2011; Musaiger et al., 2014; Awadalla et al., 2014) have all been reported as barriers to PA among Arabian Gulf people. Inadequate information about risk factors and disease control (Vaughn, 2009) and a lack of age-appropriate information about PA (Kolt et al., 2006) have also been reported as barriers.

In the current study, participants reported that there is no organised PA promotional programme in Kuwait and that there is no programme that targets older adults as a group. According to the participants in the current study, there is no governmental promotion of PA among older Kuwaiti adults, and the existing promotional programme consists simply of advice and comes from the private sector. The scarcity of policies that promote PA (Al-Otaibi, 2013) in the government (Berger and Peerson, 2009) and health sectors (Mabry et al., 2013) has also been a barrier to PA in the Arabian Gulf area. In the UAE, a lack of information from school about PA has been a barrier to the adoption of PA among young women (Berger and Peerson, 2009). A lack of PA promotion through media campaigns has also been reported by Kuwaitis (Arab, 2006).

The findings from the current research show a need to raise awareness of PA both among older adults and their social networks in order to improve the level of PA among older adults in Kuwait. Changes to health and environmental policies are also needed in order to promote PA on the population level. Studies from GCC countries showed that appropriate promotional policies could improve people’s knowledge of and information on the beneﬁts of exercise (Berger and Peerson, 2009), how to improve PA levels (Musaiger et al., 2014) and where and how to exercise (Arab, 2006). The availability of such knowledge could help facilitate PA adoption. People with a positive attitude towards exercise have been shown to be motivated to adopt and maintain PA (Berger and Peerson, 2009).

### 11.3.6.1 The Current Role of Health Professionals in Raising PA Awareness

In the current study, health professionals such as physicians and physiotherapists were perceived by participants as professionals who influence older adults’ PA. According to findings from this study, the current role of health professionals is limited to and focused on providing simple general advice about healthy choices, such as PA, during medical consultations, which is too individually focused. The advice offered was seen as ineffective in improving PA among older adults by study participants. Furthermore, older adults’ clinics in Kuwait are currently too medicalised, meaning that a person needs to be ill to be able to attend, so no preventive measures are being encouraged.

The lack of medical teams’ success in promoting PA in Kuwait is expected, taking into account the complex cultural and social factors affecting PA that were discussed earlier in this thesis. These multilevel factors should be taken into account when providing advice that promotes PA. For this reason, discussions of PA should be patient-led so that the patient’s needs and possible cultural barriers are recognised, allowing the advice to be tailored accordingly. Incompetent health communication, insufficient sources and a concentration on curative medicine rather than preventive measures are barriers to adopting an active lifestyle among Omani people, according to a qualitative study with 10 public health managers in Oman (Mabry et al., 2013). In contrast, another qualitative study was conducted to investigate the effect of primary healthcare professionals in enhancing exercise and PA among 60- to 70-year-old white and South Asian people in England (both active and inactive). The findings showed that physician advice and support are motivators to engage in PA, although the advice given usually relates to health problems, not to increasing the general PA level (Horne et al., 2012). Consistent with these results, support from South Asian health professionals is also a motivator for PA adoption among older South Asian women. In this case, the health professionals encouraged South Asian Muslim women to attend culturally sensitive, gender-segregated classes, as gender segregation is essential for motivating the women to initiate PA (Horne et al., 2012). Physicians’ advice about PA has been seen to enable its adoption among Qatari women aged 30 years and older (Donnelly et al., 2011). Good health communication and proper medical advice motivate Saudi adults to incorporate PA into their daily routines (AboZaid and Farahat; 2010; AlRefaee and AlHazzaa, 2001).

Data from the current study also show that wrong medical advice or incorrect interpretations of medical advice regarding PA negatively influenced older adults’ PA, leading many participants to avoid or reduce PA. It was also noted that the language health professionals used when communicating with older adults played a vital role. The advice should consider confidence and anxiety as well as other factors that could affect PA engagement among older adults. For example, PA adoption can be negatively affected when no encouragement is given by healthcare professionals regarding PA as a preventive measure. Ageist attitudes among health professionals are also barriers to the acceptance of health advice. A lack of information offered about recommended PA and how it can be performed safely has also been noted as a barrier to adopting PA; when instructor support is absent, participants are not sure if they are doing the exercises correctly (Horne et al., 2010).

In the data from the current study, a tension was noted between the need to raise awareness and the simultaneous recognition that raising awareness alone is not sufficient. For this reason, the exploration of participants’ ideas on how to improve PA level among older Kuwaitis was an important part of the current study. This helped to identify possible ways to improve the physical and social environments of older adults, taking into consideration the barriers to and motivators of PA identified in this research and the need for higher-level cultural and policy shifts. Dunn (2009) stressed the importance of exploring how long-term PA maintenance may be achieved as maintenance is an important issue in PA research; the current study findings on the importance of culture could potentially have an impact on maintenance of an active lifestyle. From this, culturally appropriate strategies to promote PA effectively in this population can be surmised. These suggestions are presented in the next section.

## 11.3.6.2 Suggestions to Promote PA Among Older Adults in Kuwait

The availability of facilities that offer specialised services for older adults in the community was one of the key suggestions that emerged from the data in the current study. These prospective facilities would address the need for social interaction during PA. “First-generation *diwāniyyah*” and mosques were also suggested as appropriate facilities that are available in the community and can be used to promote PA among a large number of older adults. Similarly, the presence of community-based programs such as local community centres or seniors’ community centres were seen as a motivator to PA among older adults in the USA (Vaughn, 2009).

The second suggestion to promote PA among older adults in Kuwait was to encourage health professionals to extend their services to the community. This could be done through collaboration with community leaders to deliver PA promotional activities. As the mosque was suggested as an appropriate place to reach people in the community, the Imam was seen as an appropriate community leader who could be part of a multi-disciplinary team in communitywide campaigns as he is interacting with a large number of people on a daily basis. Similar recommendations were found in England where the local authorities were advised to work with local leadership to promote PA in the community (Public Health England, 2016)

The last suggestion to reach people in the community was using technology to improve PA awareness among older adults. For example, the multi-disciplinary team could use social media platforms to disseminate PA promotional messages on large scale. Similarly, using mass media, such as TV, was also suggested as a preferable option to promote PA among Kuwaiti adults (Arab, 2006) and Qatari women (Donnelly et al., 2011).

# 11.4 Strengths and Limitations of the Study

This section explores some of the strengths and limitations of the current study including methodological and cultural challenges.

## 11.4.1 Strengths of the Qualitative Study

This exploratory study adds a unique contribution to the PA evidence base by being the first to explore the perceptions of older adults and their significant others regarding PA in Kuwait. The findings of this research have provided valuable qualitative data that helps to establish an understanding of the barriers and facilitators to PA among older people in Kuwait including their own ideas and strategies towards improving levels of PA. These findings provide culturally specific insights to inform future PA interventions, not only in Kuwait, but the wider GCC community.

The current study is unique in that it focused on exploring the perceived barriers and motivators to PA among older adults. Most previous published research into PA behaviour has been conducted in Western countries, and the few studies conducted in GCC countries either did not target older adults or were quantitative in nature and focused mainly on chronic disease management (diabetes, cardiovascular disease and obesity). This is the first study carried out in Kuwait to use in-depth qualitative analysis to explore older adults’ PA behaviour from both their own perspective and that of significant people in their lives.

PA behaviour-related literature in GCC countries is mostly derived from the targeted population perspective, but a further strength of this study is that it not only enabled the voices of older people themselves and their significant others, but also key stakeholders including physicians, physiotherapists and Imams as an example of community leaders, to help draw out an in-depth exploration of the barriers, facilitators and strategies to improve the uptake of PA among the community.

For the first stage of the research, the adoption of an ecological perspective facilitated the exploration of how older adults perceived PA, how they responded differently to PA promotion interventions and how they perceived PA in the context of their daily lives. Moreover, it has been beneficial for understanding how older adults’ interactions with their sociocultural surroundings affected their health choices. Adopting an ecological perspective facilitated the exploration of how the physical environment affected people’s responses to PA promotion and helped to advance understanding regarding the effect of factors such as institutions, community and policy on the health behaviours of older adults.

During the second stage of the study, the ecological model was used to facilitate the understanding of how the various levels of factors acted on and affected the health behaviours of older Kuwaiti adults by examining the wider context that contributed to health problems in Kuwait. Moreover, it facilitated the exploration and identification of the multilevel determinants that affected the adoption of a more active lifestyle. This broader view of health helped with the development of recommendations for PA promotion that may be comprehensive and can enable a multi-level implementation in the Kuwaiti environment.

## 11.4.2 Limitations and Challenges of the Qualitative Study

There are a number of limitations to the study which are discussed below.

The current study did not recruit any oldest old participants (>80 years old) as this population was hard to reach. It is worth noting that the percentage of people 80 years old and above is very low in Kuwait (0.2%) and most of them have home visits and do not use any outpatient clinics.

Males were under-represented in this study as only eight men (including the physician and the Imam) participated. When participants were asked to choose a significant other in their lives, those who choose an adult child, chose a daughter rather than a son. Additionally, although several imams were invited to participate in the study, only one was recruited, meaning data on the community perspective of PA was limited largely to females. On reflection, this could be related to my gender as an educated female researcher who was exploring perceptions of older adults in conservative culture where gender segregation was the norm as discussed before in Section 6.2. To ease communication and encourage participating older men to answer questions openly, I tried to build a rapport with male participants by referring to the participants using the name they preferred such as “uncle x”, starting with general discussion and using appropriate probing questions.

As participation in the research was voluntary, there was a possibility of self-selection bias (Robinson, 2014) whereby only participants who were interested in the research topic participated in the study. The potential impact of this bias on the findings was considered as the sample may not be representative of the targeted population. However, there was a diverse range of participants from different geographical areas, some of whom were physically active and some of whom were not.

Another limitation of this study is the possibility of social desirability bias (Collins et al., 2005), which means that some participants may alter their responses to interview questions based on what they believe will leave a more favourable impression on the researcher. Section 6.2 discussed how this issue has been tackled.

The plan was to conduct separate individual interviews with older adults and their significant others, but three participants requested to be interviewed as a group of family members or friends instead of having individual interviews. Based on the findings from the systematic review and the fact that my research aimed to explore perceptions of older adults and their significant others and that I wanted to examine the influence of the social context on older adults’ PA, mutual discourse in group interviews could have helped in gaining better understanding of the participants’ perceptions by apprehending their perspectives, views and opinions regarding PA behaviour. The social dynamic, social involvement, social engagement and the interplay between family members during the group interview could be similar to their natural and typical communication in everyday life, which could broaden the scope of comprehension related to PA behaviour among Kuwaiti older adults and the possible influence of the social environment. In this case, I interpreted the family interviews as means of construction of knowledge, which was compatible with the constructivist grounded theory approach and the social constructionist paradigm adopted in the current research. At the beginning of the data collection process, I believed that PA was not a sensitive topic, so there was little possibility of a participant not answering questions honestly or openly in the presence of family, but unexpected discussion of gender disparity and power relations occurred in my interviews, making the interviews more open to social pressures than I anticipated at the start. After careful consideration of the pros and cons of family interviews compared to individual interviews as discussed in Section 6.1.3, I decided to conduct family group interviews only if the main participant asked for it and if all members of the group met the inclusion criteria of the research. I believed that this helped avoid or minimise the possible negative effect of the presence of family members during the interview. I also assured the participants that there was no obligation for them to answer any questions which they did not feel comfortable about. None of the participants showed any signs of discomfort during the interviews.

Human and technical error might have occurred when transcribing and translating the data, especially since the data was collected in Arabic and then translated to English before analysis. Although I am native Arabic and Kuwaiti, meaning that I was seen as an insider with knowledge of Kuwaiti culture, my fluency in English as a second language could have affected the presentation of the findings. As a researcher, I acknowledged any transcription- and translation-related decisions and provided detailed reports as this could have an impact on the validity of the findings (Birbili, 2000; Oliver et al., 2005; Filep, 2009).

Due to time constraints, theoretical sampling and concurrent data analysis and collection, which are characteristics of grounded theory, were not performed in the current study. This methodological limitation should be taken into account when interpreting the findings. I believe that the snowball sampling of significant others in older adults’ lives improved the study rigour, as reforming the questions for their interviews based on the previous interviews with older adults helped me develop greater clarity and a better understanding of the complexity of significant others’ influence on older adults’ PA. Additionally, I believe that the use of field notes, which I saw as an additional data source, also improved rigour. The key ideas that emerged in the field notes were used to inform the subsequent interviews. This also helped in adding more detail to the emerging themes by providing deeper insight.

# 11.5 The Study Contribution to Knowledge (Theoretical Implications)

This study is the first qualitative study to explore the perceptions of older adults and their significant others regarding PA in Kuwait. The findings of this research provide a substantial theory that will help develop knowledge of, and feed into, present evidence of the impact of culture and environment on PA behaviour among older adults.

Findings from this study emphasised the complex nature of PA behaviour, which was influenced by the interplay of social, cultural and environmental barriers and motivators. For example, an interplay was found between Kuwaiti cultural norms and societal expectations (interpersonal level), physical environment (environmental level) and motivation to walk outdoor (intrapersonal level). The poor walking infrastructure in Kuwait, such as using pavements as parking spaces and lack of walking paths in the streets (Section 8.3.2), contributes to the culture of not walking (walking in street seen as something unpleasant or negative, Section 8.3.1), and in turn the culture is also influencing the infrastructure. These cultural restrictions and physical environment limitations had a negative influence on older adults’ motivation to walk outdoors. Another example is the interplay between weather (environment level), car dependence (interpersonal level) and embarrassment to walk outdoors (intrapersonal level). The hot humid weather influences and encourages a culture of dependence on cars for transport. In turn, the strong societal pressure to use a car had an effect on older adults’ feeling of embarrassment to walk to nearby places and thus effected their levels of outdoor PA negatively. To gain a deeper understanding of PA behaviour among older adults in Kuwait, it was useful to look at the interplay of multi-dimensional factors rather than focusing on one dimension of the PA behaviour. This in-depth comprehension has helped to recommend strategies to improve PA uptake among older adults that are acceptable not only in Kuwaiti culture but the wider GCC area.

An important finding from the study highlights the crucial role of older adults’ social surroundings including spouses, grown-up children and friends in shaping their PA behaviour. Additionally, findings detailing the influence of cultural norms, expectations and beliefs in framing older adults’ PA behaviour will contribute to promoting interventions to help health professionals shift from an individual to a more holistic family approach when encouraging PA uptake among older adults in Kuwait.

In terms of exploring perspectives, this was the first study of physical activity to give an understanding of older adults’ PA behaviour not only from their own point of view but also from their significant others in Kuwait. Key stakeholders such as physicians, physiotherapists and Imams have also contributed to the findings. This knowledge helps in recommending future strategies to improve PA among older adults which suit their needs.

Finally, there is a lack of evidence regarding the PA behaviour of older adults in Kuwait and GCC countries, as most studies conducted in the Arab Muslim world have not targeted older adults or they were quantitative in nature or focused on chronic disease management. This study mainly addresses this gap by exploring perceptions of older adults and their significant others. Therefore, another advantage of this study is the fact that older adults’ views have been revealed and understood whereas previously they were overlooked in quantitative research.

# 11.6 Recommendations and Implications for Policy and Practice

This section discusses how the findings of the current study may inform policy and practice in physical activity promotion among older adults in Kuwait and other cultural contexts such as GCC countries. As the study adopted an ecological perspective, the recommendations produced by this research targeted the older adult population on multiple levels: intrapersonal, interpersonal and environmental. Recommendations are focused on six key areas: developing culturally sensitive and age-appropriate PA programmes for older adults in Kuwait; developing a national PA promotion strategy; improving PA promotional practices among health professionals; developing a training agenda to improve PA promotion in Kuwait; targeting older adults in the community and building a PA-friendly environment in Kuwait.

**To develop culturally sensitive and age-appropriate PA programmes for older adults in Kuwait:**

This can be done by encouraging unstructured leisure-time PA to achieve the flexibility of perceived choice as well as the perceived pleasure which were key drivers to PA among older adults; encouraging culturally sensitive activities that adhere to modesty norms to reduce the feelings of discomfort and embarrassment that might be associated with the presence of the opposite gender in PA spaces, thereby complying with the conservative norms of Kuwait; and by adopting and promoting family-based group PA to ensure a higher level of pleasure and fun, adhere to the cultural norms favouring an active social life and overcome the cultural barriers that usually prevent PA engagement among older adults.

Specific action plan: Work with health care professionals and community leaders to design simple unstructured leisure time PA activities for older adults and their families for implementation in any community events.

Present findings to physiotherapist practitioners to promote family-based group PA as a means to encourage PA adoption among older adults.

**To develop a national PA promotion strategy (guidelines):**

The implication for this recommendation is to establish a national physical activity committee to design a work plan to supervise and assess PA policy progress and collect necessary data to inform decision-making. Additionally, design a tool to monitor indicators of key PA practices, and make sure that these indicators are included in regular national health audits. Finally, consider the needs of vulnerable groups such as older women who usually face more gender barriers when it comes to outdoor PA in any future initiatives.

Specific action plan: Submit a report to the public health department in Ministry of Health outlining the main findings from this study and emphasising the importance of establishing a national physical activity committee to organise any future effort to promote PA.

**To improve PA promotional practices among health professionals:**

To achieve this, a holistic multi-disciplinary team approach which focuses on healthy lifestyle behaviours such as PA and diet should be encouraged. Additional strategies would be promoting a shift to more preventive measures and trying to raise awareness regarding unhealthy behaviours such as physical inactivity before older adults develop diseases; as well as promoting a shift from an individual-focused approach to a more family-oriented approach when promoting PA as this will help in tackling a lot of PA barriers among older adults. Specific action plan: Organise a series of lectures for health professionals working in the Ministry of Health to explain the research findings related to their role in PA promotion and to suggest how they can improve their role.

**To develop a training agenda to improve PA promotion in Kuwait:**

Clinical educational programmes at universities and health schools should be reviewed and updated to ensure that curricula include up-to-date modules and materials on behavioural change, health promotion, community healthcare and physical activity. Other essential steps include providing education for current health professionals on their role in promoting healthy lifestyles, including PA, and training them to build their PA counselling skills; as well as training the whole multi-disciplinary team involved in PA promotion, including the community leaders and any volunteers, on basic PA topics and building their support skills for PA promotion. Trained PA management specialists (experienced advisors) who could supervise the PA program delivery and provide regular education and support for the trainers responsible for training the PA promotional team would also be useful.

Specific action plan: Submit a report of the findings from this thesis to the University of Kuwait with suggestions for possible modules and materials to improve health promotional curricula.

**To target older adults in the community:**

Technology and social media to reach older adults in the community and to deliver PA promotion on a large scale should be used. Collaboration with different community leaders such as Imams to promote PA in the community and target older adults from different angles should be encouraged. Mosques and “first-generation *diwāniyyah*” can be used as community facilities to promote age-appropriate PA for older adults and their families.

Specific action plan: Advise the Ministry of Health on content for a social media account dedicated to delivering regular educational messages and tips regarding PA. The account can also be used to announce and cover any future events in the community related to PA and can also be used as a channel to communicate with people in the community by having online Q&A session to answers people’s queries.

Set up a workshop for “first-generation diwaniyyah” and imams in mosques and offer some ideas of possible future collaborations between trained health professionals and them to provide community activities that can be conducted in their premises to help older adults and their families being more active.

**To build a PA-friendly environment (create enabling environment):**

More attention should be given to the built environment as it has a crucial impact on PA adoption among older adults – for example, having designated pedestrian areas in each city. This policy-level strategy will encourage a culture of walking.

Specific action plan: Submit a report to the Ministry of Public Work indicating the findings of thesis which relate to the current limitations in physical environment (poor infrastructure) and its influence on PA engagement and include suggestions on what they can do to improve infrastructure in Kuwait to encourage PA, for example, making streets more suitable for walking with shady pedestrian areas, safe from traffic and with plenty of seating and amenities.

Present the findings of this thesis to practitioners and academics at an international Design conference to highlight the effect of a limited physical environment on PA in older people.

# 11.7 Future Research

This exploratory study has identified opportunities for possible future intervention studies with regard to PA promotion among older adults in the community. Future research could investigate the effectiveness of unstructured leisure-time PA interventions in encouraging an active lifestyle among older adults in GCC countries.

The study has provided evidence that the conservative nature of Kuwaiti society and the norms of modesty lead women to face more cultural barriers compared to men when engaging in outdoor PA. Studies that investigate the effectiveness of culturally gender-sensitive PA interventions could help determine whether different approaches to improve outdoor PA should be used for men and women in these societies.

The findings of this study highlighted the potentially important role that significant others such as family members and friends play in influencing PA behaviours among older adults. Future research could explore the efficacy of interventions that aim to improve PA engagement using a family-based group PA approach.

Future intervention studies could also develop and evaluate training of health professionals in effective strategies to raise PA awareness. Healthcare outcomes could be enhanced by directing medical team efforts towards adopting innovative preventive measures to deal with unhealthy lifestyles. Considering health professionals’ and older adults’ perspectives in developing such programs is important.

Other key recommendations of this research include targeting older adults in the community when promoting PA by using technology and social media to reach a large number of people, collaborating with community leaders such as Imams, and using mosques and “first-generation *diwāniyyah*” as community facilities to promote PA among older adults. Future research could evaluate the effectiveness of interventions that employ social media, community leaders and community facilities in the promotion of PA among older adults in Kuwait. Further qualitative research could explore older adults, community leaders and health professionals’ perceptions regarding such interventions to understand challenges and barriers faced and to explore ways of improving such interventions.

Having designated pedestrian areas in cities was another recommended policy-level strategy in the current study to encourage a culture of walking. Future qualitative research could explore stakeholders’ and policy makers’ perspectives regarding creating a PA-enabling environment in Kuwait, paying special attention to the challenges of the Kuwaiti climate and infrastructure.

In the current study, a complex interplay between many social, cultural and environmental factors in influencing PA behaviours of older adults in Kuwait has been found. More research is needed to explore the transferability of this finding to non-Kuwaitis living in Kuwait and to Arabs living in other Middle Eastern countries.

# 11.8 Conclusion

There is a high prevalence of physical inactivity and chronic disease among older adults in Kuwait. The importance of PA in preventing and managing chronic disease and improving people’s quality of life is well documented; for this reason, promoting PA among older adults in Kuwait is essential to improve their well-being. This exploratory study has used the voices of older people and their significant others in Kuwait to identify barriers to PA and strategies to increase uptake among the older population.

The findings demonstrate the interplay among individual, cultural and environmental factors in Kuwait that affect PA as a complex behaviour. Kuwaiti society encourages less PA in older age, with women facing more cultural barriers than men. Misconceptions and lack of awareness regarding PA and its importance in the lives of older adults were evident among older adults and their families. The social environment of older adults was also believed to have a crucial role in influencing PA behaviours in Kuwait. Pleasure and perceived choice were key motivators to PA among older adults. Health professionals and community leaders can play an important role in promoting PA among older adults in the community.

Recommendations for strategies that promote PA among older Kuwaiti adults and help overcome some of the cultural challenges affecting PA have been put forward. These could inform health professionals, public health managers and policymakers about possible ways to promote PA among older adults in Kuwait. Culturally appropriate PA interventions need to target older people and their family members as individual-based interventions are unlikely to be successful on their own. Interventions should include community solutions as well as healthcare solutions and should consider the environmental factors such as infrastructure and weather.

The findings from this study could form the basis for future PA promotional programmes for older adults in Kuwait. To be effective, PA promotional programmes targeting this population should be culturally sensitive, age- and gender-appropriate, designed to target the family as a whole, and should focus on unstructured leisure-time PA. To reach people in the community, a multi-disciplinary approach involving a range of stakeholders is also recommended. Policy makers should focus on building an environment that encourages PA and serves the whole community as this will help improve PA among older adults.

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# APPENDIX 1- THE SYSTEMATIC REVIEW PROTOCOL

Rationale:

The importance of PA is well documented. Physical inactivity is one of the major public health problems of the 21st century (Blair, 2009), and it is the fourth leading cause of death worldwide (WHO, 2010). In 2008, physical inactivity (defined as a level of activity insufficient to meet the WHO’s PA recommendations) caused 9% of all premature mortality (Lee et al., 2012), while 6–10% of the major NCDs around the world (coronary heart disease, type 2 diabetes, and breast and colon cancers) are caused by physical inactivity (Lee et al., 2012). A review of eight studies conducted in GCC countries showed a high prevalence of physical inactivity among both males and females in the region (Mabry et al., 2010). Physical inactivity is higher in high-income countries (GCC countries) than in other Arab countries such as Tunisia and the Comoros (Abdul Rahim et al., 2014). The highest levels of inactivity in the eastern Mediterranean region have been found in Kuwait and the KSA, where 60% of adults are inactive according to the WHO recommendations (Bull and Milton, 2014; MOH, 2013).

Benjamin & Donnelly (2013) conducted a systematic review and explored barriers and facilitators influencing the PA of Arabic adults. The review included 15 articles published in English. The review identified several factors that could affect PA levels among Arab adults. As it has been three years since the Benjamin & Donnelly (2013) review, so identifying up to date literature could be useful in approaching better understanding of the barriers and motivators of PA among adults in Arabic and Muslim communities. Half of the studies in Benjamin & Donnelly (2013) review were conducted in countries outside of the Arabian Gulf, so the cultural context is likely to be different even in the Arabian community, for this reason the focus of the current systematic review will be GCC countries only. The current review will focus also on reviewing the methods of studies as well as findings (for example, how did studies find/identify participants?) and will consider examining findings by age and/or PA level if the data allows.

Review Question:

What are the barriers and facilitators to PA among adults in the GCC?

Inclusion/ Exclusion criteria:

Studies will be selected according to the criteria outlined below:

Inclusion criteria

* Study designs: will include any type of quantitative, qualitative and mixed methods studies as well as systematic reviews.
* Participants: will include studies examining Arab adults 18 years and older. Will include studies addressing both adults and children if data provided for adults are reported separately.
* Studies reported barriers and facilitators to PA in the findings.
* Language: will include articles reported in Arabic and English languages
* Context: only studies conducted in GCC countries will be included.

b. Exclusion Criteria

- persons under the age of 18 years old

- migrant workers living in GCC if they represent > 20% of the sample (cut-off is 20% for non-native)

- papers not reported barriers and motivators to PA.

Search Strategy for identification of relevant studies

The search strategy aims to find both published and unpublished studies. Literature search strategies will be developed using medical subject headings (MeSH) and text words related to PA. If MeSH is not possible, an initial limited search of MEDLINE and CINAHL will be undertaken followed by analysis of the text words contained in the title and abstract, and of the index terms used to describe article. A second search using all identified keywords and index terms will then be undertaken across all included databases. Thirdly, the reference list of all identified reports and articles will be scanned for additional studies to ensure literature saturation. The authors’ personal files will be searched to make sure that all relevant material has been captured. Grey literature will be also searched. Studies published in Arabic and English will be considered for inclusion in this review. Studies published 2000 onwards will be considered for inclusion in this review.

The databases to be searched include:

MEDLINE (OVID interface), Embase (OVID interface), Cochrane Central Register of Controlled Trials, CINAHL and PsychINFO

Initial keywords to be used will be:

1. Gulf Cooperation Council OR GCC OR Kuwait\* OR Bahrain\* OR Qatar\* OR Oman\* OR Kingdom of Saudi Arabia OR KSA OR United of Arab Emirates OR UAE OR Arabian Gulf OR Saudi OR Emirate\*.
2. ‘physical activity’ OR ‘Physica\* Activ\*’ OR walk\* OR exercise OR ‘physical fitness’.
3. Motivate\* OR barrier OR factor OR influenc\* OR facilitat\* OR enabl\* OR predict\* OR Promot\*.
4. 1 AND 2 AND 3

Selection process

The review author will screen the titles and abstract yielded by the search against the inclusion criteria. Reviewer will obtain full reports for all titles that appear to meet the inclusion criteria or where there is any uncertainty. Review author will then screen the full text reports and decide whether these meet the inclusion criteria and may seek additional information from study authors where necessary to resolve questions about eligibility.

Data Extraction

Please see extraction table in Appendix 2.

Quality assessment of the articles

Critical Appraisal Skills Program (CASP) for qualitative papers - Quantitative studies will be assessed using NIH quality assessment tool.

Data synthesis

Data (barriers and facilitators) will be synthesis using Ecological model. If data allows will examine findings according to age and PA level.

# APPENDIX 2- DATA EXTRACTION TABLE

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coder initials |  | Date extracted | |  | | Reference ID |  | |
| Author (Date) |  | | | | | | | |
| inclusion |  | | Y | N |  | | Y | N |
| design | |  |  | PA barriers | |  |  |
| Arab adults | |  |  | PA facilitators | |  |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Study details |  | | | | | |
| Research question (free text) |  | | | | | |
| Study type (free text) |  | | | | | |
| Country (tick all that apply) | Kuwait |  | KSA |  | Bahrain |  |
| Qatar |  | Oman |  | UAE |  |
| Setting (free text) |  | | | | | |
| Population | age |  | | | | |
| Activity level |  | | | | |
| Reviewer notes and comments |  | | | | | |

|  |  |  |
| --- | --- | --- |
| Detailed data extraction |  | |
| Study aim |  | |
| Methods |  | |
| How study identified appropriate participants |  | |
| Results | Barriers | Facilitators |
| Factors identified (synthesised according to ecological model) |  | |
| Implications (from authors) |  | |
| Limitations (from authors) |  | |
| Further references |  | |

# APPENDIX 3- SEARCHING DATABASES (SYSTEMATIC REVIEW)

**DATE OF CONDUCTING THE SEARCH:**

19th July 2016 and updated on 8th October 2018

**DATABASES:**

MEDLINE (OVID interface), Embase (OVID interface), Cochrane Central Register of Controlled Trials, CINAHL, Web of Science/Knowledge and PsychINFO

**KEYWORDS:**

1. Gulf Cooperati\* Council OR GCC OR Kuwait\* OR Bahrain\* OR Qatar\* OR Oman\* OR Kingdom of Saudi Arabia OR KSA OR United of Arab Emirates OR UAE OR Arabian Gulf OR Saudi OR Emirate\* OR Arab\* OR Middle East\*
2. Physica\* adj (Activ\* OR Fitness)
3. Walk\* OR jog\* OR run\* OR exercise OR sport\*.
4. 2 OR 3
5. Motivat\* OR barrier OR factor OR influenc\* OR facilitat\* OR enabl\* OR predict\* OR promot\* OR challenge\*.
6. 1 AND 4 AND 5

**Medline (OVID interface):**

|  |  |  |
| --- | --- | --- |
| serial | Search Strategy | Text Results |
| 1 | ((Gulf Cooperati\* Council) OR GCC OR Kuwait\* OR Bahrain\* OR Qatar\* OR Oman\* OR (Kingdom of Saudi Arabia) OR KSA OR (United of Arab Emirates) OR UAE OR (Arabian Gulf) OR Saudi OR Emirate\* OR Arab\* OR (middle east\*)).ti,ab. | 157088 |
| 2 | ((Physica\* adj (Activ\* OR fitness))).ti,ab. | 121611 |
| 3 | (walk\* OR jog\* OR run\* OR exercise OR sport\*).ti,ab. | 624587 |
| 4 | 2 OR 3 | 679299 |
| 5 | (Motivat\* OR barrier\* OR factor\* OR influenc\* OR facilitat\* OR enabl\* OR predict\* OR Promot\* OR challenge\*).ti,ab. | 8448643 |
| 6 | 1 AND 4 AND 5 | 1526 |

**Embase (OVID interface):**

|  |  |  |
| --- | --- | --- |
| serial | Search Strategy | Text Resutls |
| 1 | ((Gulf Cooperati\* Council) OR GCC OR Kuwait\* OR Bahrain\* OR Qatar\* OR Oman\* OR (Kingdom of Saudi Arabia) OR KSA OR (United of Arab Emirates) OR UAE OR (Arabian Gulf) OR Saudi OR Emirate\* OR Arab\* OR (middle east\*)).ti,ab. | 127428 |
| 2 | ((Physica\* adj (Activ\* OR fitness))).ti,ab. | 108284 |
| 3 | (walk\* OR jog\* OR run\* OR exercise OR sport\*).ti,ab. | 586297 |
| 4 | 2 OR 3 | 655881 |
| 5 | (Motivat\* OR barrier\* OR factor\* OR influenc\* OR facilitat\* OR enabl\* OR predict\* OR Promot\* OR challenge\*).ti,ab. | 6914250 |
| 6 | 1 AND 4 AND 5 | 1128 |

**Cochrane Central Register of Controlled Trials:**

|  |  |  |
| --- | --- | --- |
| serial | Search Strategy | Text Results |
| 1 | Gulf NEXT Cooperati\* NEXT Council OR GCC OR Kuwait\* OR Bahrain\* OR Qatar\* OR Oman\* OR “Kingdom of Saudi Arabia” OR KSA OR “United of Arab Emirates” OR UAE OR “Arabian Gulf” OR Saudi OR Emirate\* OR Arab\* OR middle NEXT east\* | 11603 |
| 2 | Physica\* NEXT (Activ\* OR fitness) | 23995 |
| 3 | walk\* OR jog\* OR run\* OR exercise OR sport\* | 106011 |
| 4 | 2 OR 3 | 114499 |
| 5 | Motivat\* OR barrier OR factor OR influenc\* OR facilitat\* OR enabl\* OR predict\* OR Promot\* OR challenge\* | 283167 |
| 6 | 1 AND 4 AND 5 | 475 |

**CINAHL (via EBSCO):**

|  |  |  |
| --- | --- | --- |
| serial | Search Strategy | Text Results |
| 1 | “Gulf Cooperati\* Council” OR GCC OR Kuwait\* OR Bahrain\* OR Qatar\* OR Oman\* OR “Kingdom of Saudi Arabia” OR KSA OR “United of Arab Emirates” OR UAE OR “Arabian Gulf” OR Saudi OR Emirate\* OR Arab\* OR “middle east\*” | 9848 |
| 2 | Physica\* W Activ\* OR fitness | 19697 |
| 3 | walk\* OR jog\* OR run\* OR exercise OR sport\* | 180789 |
| 4 | 2 OR 3 | 188282 |
| 5 | Motivat\* OR barrier OR factor OR influenc\* OR facilitat\* OR enabl\* OR predict\* OR Promot\* OR challenge\* | 1160350 |
| 6 | 1 AND 4 AND 5 | 182 |

**Web of Science/Knowledge:**

|  |  |  |
| --- | --- | --- |
| serial | Search Strategy | Text Results |
| 1 | “Gulf Cooperati\* Council” OR GCC OR Kuwait\* OR Bahrain\* OR Qatar\* OR Oman\* OR “Kingdom of Saudi Arabia” OR KSA OR “United of Arab Emirates” OR UAE OR “Arabian Gulf” OR Saudi OR Emirate\* OR Arab\* OR “middle east\*” | 409229 |
| 2 | “Physica\* (Activ\* OR fitness)” | 141505 |
| 3 | walk\* OR jog\* OR run\* OR exercise OR sport\* | 1152176 |
| 4 | 2 OR 3 | 1282331 |
| 5 | Motivat\* OR barrier OR factor OR influenc\* OR facilitat\* OR enabl\* OR predict\* OR Promot\* OR challenge\* | 8153629 |
| 6 | 1 AND 4 AND 5 | 27 |

**PsychINFO (via OvidSP):**

|  |  |  |
| --- | --- | --- |
| serial | Search Strategy | Text Results |
| 1 | ((Gulf Cooperati\* Council) OR GCC OR Kuwait\* OR Bahrain\* OR Qatar\* OR Oman\* OR (Kingdom of Saudi Arabia) OR KSA OR (United of Arab Emirates) OR UAE OR (Arabian Gulf) OR Saudi OR Emirate\* OR Arab\* OR (middle east\*)).ti,ab. | 13725 |
| 2 | ((Physica\* adj (Activ\* OR fitness))).ti,ab. | 37174 |
| 3 | (walk\* OR jog\* OR run\* OR exercise OR sport\*).ti,ab. | 171140 |
| 4 | 2 OR 3 | 195444 |
| 5 | (Motivat\* OR barrier OR factor OR influenc\* OR facilitat\* OR enabl\* OR predict\* OR Promot\* OR challenge\*).ti,ab. | 1600533 |
| 6 | 1 AND 4 AND 5 | 172 |

# APPENDIX 4- EXCLUDED STUDIES TABLE

|  |  |
| --- | --- |
| Excluded study | reason |
| Khalaf et al. 2012 | Full text was not available, so there is no enough information |
| Khalaf et al., 2011 | Full text was not available, so there is no enough information |
| Al-zalabani et al., 2015 | Includes determinants, but no barriers and facilitators |
| AlGhadir & Gabr, 2015 | Include children and adults but data provided for adults were not provided separately |
| Al-Eisa & Al-Sobayel, 2012 | No barriers and facilitators reported |
| Al-isa et al., 2011 | Determinants of PA were reported not barriers and facilitators |
| Al-Otaibi, 2014 | Full text was not available, so there is no enough information |
| Alghenaim, 2013 | Barriers and facilitators were not reported |
| Almajwal, 2015 | Non-native (non-Saudi) nurses working in KSA |
| Alquaiz & Tayel, 2009 | Age- included participants younger than 18 years old, half of the participants aged 15-17 years old, and we cannot tell how many are 15-17 |
| Harkness, 2012 | An article not a study |
| Hussain et al., 2011 | Included Emiratis and non-Emiratis living in Dubai, barriers to PA were not reported according to nationality |
| Benjamin & Donnelly, 2013 | Systematic review, the references were checked against my searches. |
| Salam & Farheen, 2014 | Barriers and facilitators were not reported |
| Mckechnie et al., 2006 | Only 51% of the sample were Gulf nationals |
| Rawas et al., 2012 | Article not a study |
| Bahram et al., 2003 | 30% of the sample were not bahraini |
| Alsayegh et al., 2016 | Barriers and facilitators were not reported |
| Amin et al., 2012 | Included determinants not barriers and facilitators |
| Donnelly et al., 2012 | Only 54% were GCC nationals |
| Donnelly et al., 2012 | Only 54% were GCC nationals (same as the above study) |
| Raigangar & Hassan, 2015 | Full text was not available, so there is no enough information |
| Mohamed, 2010 | Protocol no findings |

# APPENDIX 5- BARRIERS AND MOTIVATORS TO PHYSICAL ACTIVITY SYNTHESISED ACCORDING TO ECOLOGICAL MODEL

|  |  |  |  |
| --- | --- | --- | --- |
| **Study** | Barriers and motivators (synthesised according to Ecological model) | | |
| Intrapersonal level | Interpersonal level | Environmental level |
| **AboZaid & Farahat (2010)** | Barriers:  -health status  -fear of criticism  Motivators:  -health maintenance  -weight loss  -fun | Barriers:  -no time  Motivator:  -medical advice | Barriers:  -no place |
| **Al-Baho et al (2016** | Barriers:  Chronic disease – Fatigue and tiredness  Exercise is boring  Laziness  PA ruin my appearance  Excessive TV and internet  No past PA habit | Barriers:  Social norms  Lack of family and friends support  Lack of time / work duties / family responsibilities | Barriers:  Weather  Unavailability of nearby facilities  Lack of safe places |
| **Al-gilany & Al-masry (2011)** | Barriers:  -Not interested in sports  -Lack of motives  -Lack of sports skills  -Feeling of inability to practice sports adequately  -Lack or low physical power  -Feeling tired on physical activity  -Fear of failure in sports competition  -Fear of injuries  -Body cannot tolerate physical activity  -Previous failure in sports competition  -Prefer to not attend to sports places  -Previous bad experience with sport physical activity  Motivators:  -Promote and maintain health  -Weight control/obesity  -prevention Improve muscle power  -Improve body image and shape  -Psychological wellbeing  -Prevent diseases  -Improve memory and mentality | Barriers:  -Time limitation due to study  -No person caring for my family  -Have other important priorities  -Lack of friends to encourage oneself  -Lack of support or encouragement from others  -Objection of parents  Motivators:  -Companionship with others  -Socialization  -spent free times  -Recreation | Barriers:  -Lack of accessible sporting places  -Lack of safe sporting places  -Unsuitable (hot or cold) weather  -Lack of sports program that suit my physical fitness  -High cost |
| **Ali et al (2010)** | Barriers:  high appetite  Low nutrition awareness  Low motivation  Medical condition  Motivators:  -disease management  -disease prevention | Barriers:  Sociocultural norms (social gatherings, outdoor activity restrictions)  Low social support  Housemaids  Competing demands ⁄ lack of time  Motivators:  -social support, such as having other women to walk with | Barriers:  Lack of exercise facilities  Weather  Street safety concerns  Motivators:  -access to farms  -cooler weather |
| **Alkaabi et al (2009)** | Barriers:  -fear of injury from practicing sports  -disease (e.g. osteoarthritis)  -self-belief that exercise makes diabetes difficult to control  -lack of time  -tiredness and laziness  -exercise is boring  -self-belief (embarrassed to wear sports wear) | Barriers:  -lack of family support  -cultural reasons  -family responsibilities | Barriers:  -lack of local facilities (such as nearby parks)  -cost of exercise facilities  -weather conditions  - lack of safe places to walk |
| **Allafi & Waslien (2014)** | Barriers:  -dislike of exercise ("Couch Champion")  -discomfort in exercising around others (" Uneasy Participant")  -ignorance in how to start exercising ("Fresh Starter")  -frequent change from "on" to "off" in exercising ("All-or-Nothing Doer")  -adherence to a fixed exercise routine until it becomes tedious ("Set-Routine Repeater)  -perceived injury which limits ability to exercise ("Tender Bender")  -inability to find time to exercise ("Rain Check Athlete") | - | - |
| **Al-Otaibi (2013)** | Barriers:  -Lack of energy  -Lack of motivation  -Lack of self-confidence | Barriers:  -Lack of social support  -Lack of time | Barriers:  -Lack of resource (sports clubs & swimming pools) |
| **AlRefaee & AlHazzaa (2001)** | Barriers:  -health condition  -fear of embarrassment  -not convinced of benefits  -maintaining health  -losing weight  -recreation | Motivators:  -socialising  -medical advice  -lack of time | Barriers:  -lack of facilities |
| **Al-Reshidi (2016)** | Barriers:  -Their first priority is not to exercise | -No enough time to exercise  -a lot of responsibilities | Barriers:  -Unavailability of exercise facilities at home  -The unsuitable weather  -Lack of suitable places to exercise nearby |
| **Amin et al (2011)** | Barriers:  -lack of money  -lack of interest  -fear of injuries  -disliking exercising  internet & TV  -chronic illness  -old age | Barriers:  -traditions and customs (approval of the family, especially husband, traditions, restrictions, and being a female)  -lack of company  -Lack of time (working office hours, work overload, and extra jobs among men, and household chores among women) | Barriers:  -weather  -Lack of places appropriate for exercising |
| **Arab (2006)** | Barriers:  -feeling boredom when exercising  -lack of motivation  -pain  -lack of motivation  -feeling uncomfortable to exercise in fitness clubs  -lack of interest  -health concerns.  -lack of energy  -exercise will not improve condition  -exercise will make condition worse  -too old to exercise | Barriers:  -lack of support  -lack of care person  -Lack of time | Barriers:  -lack of accessibility  -do not know how to exercise  -cost of exercise  exercise is too difficult  -do not know where to exercise  -lack of transportation  weather  lack of media campaign |
| **Awadalla et al (2014)** | Barriers:  Not interested in sports  Lack of motivation  Lack of sports skills  Fear of failure in sports competition  Fear of injury  Fear of deterioration of physical illness  Feeling tired on physical activity  Ignorance about benefits of sports  Prefer not to attend sports places  Lack of or low physical power  Feeling unable to practise sports adequately  Body cannot tolerate physical activity  Previous failure in sports competition  Previous bad experience with physical sports activity | Barriers:  Lack of support and encouragement from others  Lack of friends to encourage me  Nobody to care for my family  Objection of parents  Time limitations  Have other important priorities | Barriers:  Lack of accessible and suitable sports places  Lack of safe sports places  Lack of sports programmes that suit my physical fitness  High cost  Unsuitable (hot or cold) weather |
| **Berger & Peerson (2009)** | Barriers:  -do not like to sweat  -make-up (exercise may ruin grooming efforts)  -lack of personal motivation  -a dislike for exercise  -tiredness  -a preference for watching rather than playing a sport  -obesity  Motivators:  -positive attitude to exercise | Barriers:  -gender (sports is for men)  -age (when a girl reached adolescence she is discouraged to exercise)  -lack of role models  -culture  -clothing (do not like/prefer wearing swimming costume or sports cloths)  -social and Peer support and non-participation of friends  -time and opportunity  Motivators:  -in the company of friend | Barriers:  -Transport to and from the sports venue  -climate (hot summer)  -school and government policies  -sports teachers’ lack of enthusiasm in high school.  -Few sports are offered to girls on a regular basis  -no female-only exercise venues in the vicinity.  -ﬁnancial means  -lack of information on the beneﬁts of exercise  Motivators:  -accessibility  -affordability |
| **Gawwad (2008)** | Barriers:  -Body related (such as worry about her/his looks, concern for body, health, and people to perception of his/her body)  -Skills related (such as the most suitable exercise, performance skills, time needed to achieve fitness, and making PA more interesting)  Motivators:  -improve their mental capability  -self-concepts  -reduce stress  -make them feel healthier  -increase their energy levels | Barriers:  -Socially related (such as lack of support from friends and family, social norms, and cultural factors)  -Time related | Barriers:  -Resources related (such as environmental factors, access to health club, cost, and design of the house)  -Weather related |
| **Khalaf et al (2013)** | Barriers:  -Lack of knowledge,  -Do not believe in the importance of exercise  -Lack of healthy conditions  Motivators:  -For health  -To lose weight  -To have fun  - For competition | Barriers:  -No one is exercising with me  -Time scarcity  motivators:  -To meet friends | Barriers:  -Lack of a suitable place |
| **Li et al (2015)** | Motivators”  Develop Athletic Skills  Improve Health  Improve appearance  Relaxation  Enjoyment  Compare with Others  Spend Time with Others |  |  |
| **Mabry et al (2013)** | Barriers:  lack of motivation,  lack of awareness | Barriers:  Social restrictions on women (such as dress code)  Low value placed on physical activity  Dependence on motorized transport  Social restrictions for older people  Cultural norm to employ domestic workers  lack of time | Barriers:  Inadequate infrastructure  Limited access to places to be active  Limited access to government sports clubs  Limited access to private sports clubs  Weather  ineffective health communication  limited resources  Sedentary work setting  Focus on curative  Lack of healthy public policies |
| **Majeed (2015)** | Motivators:  -stress relief  -general health  -maintain or lose weight  -enjoyment | Barriers:  -lack of time | Barriers:  no access to equipment |
| **Musaiger et al (2014)** | Barriers:  -Do not have motivation to do physical activity, exercise or sport  -Not enjoying physical activity, exercise or sport  - Do not have the skills to do physical activity, exercise or sport  - Feeling shy when practising exercise outdoors | Barriers:  - No parent’s support to be physically active  - No friend’s support to be physically active  -No teacher’s support to be physically active  - Not being able to practise physical activity due to cultural factors | Barriers:  - Do not have enough information about how to increase PA  - Not having access to places to do physical activity,  - Not being able to ﬁnd physical activity facilities that are inexpensive  - Not having time to be physically active  - The climate is not suitable for practising exercise |
| **Samara et al (2015)** | Barriers:  -Bored by program/activity  -Vacation  -Not interested in the activity  -Pain when exercising  -Not fun or enjoyable  -Did not like the activity involved in Schedule problems  -Self-conscious about appearance  -Under personal stress  Motivators:  -Health  -To lose weight  -Competiton | Barriers:  -Exercise alone  Motivators:  -Social | Barriers:  -Bad weather  -Difﬁcult to get to exercise location  -No encouragement from instructor  lack of facility |
| **Serour et al (2007)** | Barriers:  -coexisting diseases | Barriers:  -No exercise partner  -Cultural difficulties for women  -excess daily use of their private cars  -employment of maids  -Lack of time | Barriers:  -Weather |

# APPENDIX 6- UNIVERSITY OF SHEFFIELD ETHICAL APPROVAL

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# APPENDIX 7- KUWAIT’S MINISTRY OF HEALTH ETHICAL APPROVAL

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**CONTINUE CHAPTER 7- KUWAIT’S MINISTRY OF HEALTH ETHICAL APPROVAL**

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# sheffield logo - aloneAPPENDIX 8 – INFORMATION SHEET (ENGLISH VERSION)

**‘Promoting Physical Activity among People Aged 50 years Old and Above in Kuwait’**

I would like to invite you to take part in a research study. Before you decide you need to understand why the research is being done and what it would involve for you. Please take time to read the following information carefully. Talk to others about the study if you wish. Ask me if there is anything that is not clear or if you would like more information. Take your time to decide whether or not you wish to take part.

**What is the purpose of the study?**

This research is part of a PhD study which aims to explore what Kuwaiti people over 50 and their close friends and family think about being active.

**Why have I been invited?**

You are invited to take part in this study because you are a person aged 50 or above living in Kuwait.

**Do I have to take part?**

It is up to you to decide if you want to take part. I will describe the study and give you chance to ask any questions before you decide. You are free to withdraw at any time, without giving a reason.

**What will happen to me if I take part?**

If you decided to take part it will involve speaking to me in an interview for about an hour (although it can be shorter if you prefer).

I will ask you some questions about your daily lifestyle and physical activity. The interview can take place either at your home, or somewhere else of your choice, or over the telephone. The interview will be recorded, with your permission.

**What are the possible disadvantages and risks of taking part?**

There are no obvious risks to taking part, but if you decide you wish to stop the interview, you can withdraw from the study at any point without giving a reason.

**What are the possible benefits of taking part?**

There is no direct benefit from taking part in this study but the information you provide will help highlighting what people over 50 years old think about being active in Kuwait and in future this may be used to develop suitable physical activity guidelines for Kuwaiti adults.

**What if there is a problem?**

Any complaint about the way you have been dealt with during the study or any possible harm you might have suffered can be addressed by contacting my supervisor Dr Sarah Barnes or Professor Jon Nicholl using the contact details at the end of the information sheet.

**Will my taking part in the study be kept confidential?**

All the information gathered from this study will be kept strictly confidential. You will not be identified by name in any reports arising from the study. The data will only be used for this study and will not be included in any other future study. No one will have access to the identifiable data apart from me. All the data will be kept in locked storage following the study and destroyed securely after completion of the study. Although no names or identifying comments will be included, direct quotes may be used in the write up and possible publication of the study.

**What will happen to the results of the research study?**

The results will be written up in my PhD thesis which will be submitted in to the University of Sheffield degree (PhD in Health and Related Research) and may be published in academic journals. Findings of this study will inform the development of physical activity guidelines for adults over 50 years old in Kuwait.

**Who has reviewed the study?**

This study has been reviewed and approved by the School of Health and Related Research (ScHARR) committee, University of Sheffield, UK and Kuwait Ministry of Health.

**Contacts for further information**

For further information please do not hesitate to contact me or my supervisors on the following addresses:

Eiman Alkhezi, PhD student – [University of Sheffield - Mobile Number: +447745948286 - Email: ealkhezi1@sheffield.ac.uk]

**Supervisor:** Dr Sarah Barnes **– [**University of Sheffield**-** Tel.: (+44) (0) 114 222 0727**-** Email: s.barnes@sheffield.ac.uk]

**Dean of School of Health and Related Research (ScHARR):**

[Professor Jon Nicholl - Tel: (+44) (0)114 222 5453- Email: [j.nocholl@sheffield.ac.uk](mailto:j.nocholl@sheffield.ac.uk)]

**Thank you once again for taking the time to read this information.**

# sheffield logo - aloneAPPENDIX 9- INFORMATION SHEET (ARABIC VERSION)

**تعزيز النشاط البدني لمن بلغ سن ٥٠ أو أكثر في الكويت**

أود دعوتك للمشاركة في بحث، قبل أن تقرر يجب أن تدرك لماذا يجرى هذا البحث وماذا يتضمن. الرجاء خذ وقتك في قراءة المعلومات التالية. تحدث للآخرين عن الدراسة إذا كنت تود ذلك. لا تتردد في توجيه الأسئلة لي إذا كنت تريد مزيداً من المعلومات. خذ وقتك في اتخاذ قرار المشاركة من عدمه.

**ما هو سبب هذه الدراسة؟**

هذا البحث جزء من رسالة دكتوراه تهدف لاستطلاع أفكار الكويتيين الذين بلغوا ال٥٠ من العمر وعائلاتهم وأصدقائهم عن النشاط البدني.

**لماذا تمت دعوتي للمشاركة؟**

أنت مدعو للمشاركة في هذه الدراسة لأنك تبلغ ٥٠ سنة أو أكثر وتعيش في الكويت.

**هل يجب عليّ المشاركة؟**

قرار المشاركة عائد لك، سوف أشرح تفاصيل الدراسة وأعطيك الفرصة لطرح الأسئلة قبل أن تقرر. يمكنك الانسحاب في أي وقت بدون إعطاء أي أسباب.

**ماذا سيحدث إذا شاركت؟**

مشاركتك تتضمن التحدث معي في مقابلة تستغرق حوالي ساعة (من الممكن أن تستغرق وقتاً أقصر إذا كنت تفضل ذلك). سوف أطرح بعض الأسئلة حول روتين حياتك اليومي والنشاط البدني. ممكن أن تتم المقابلة في بيتك، أو أي مكان تفضله أو حتى عبر الهاتف. سوف يتم تسجيل المقابلة صوتياً بعد أخذ موافقتك.

**ماهي العيوب وأو المخاطر التي ممكن أن تنتج إذا شاركت؟**

لا توجد أي مخاطر من المشاركة، لكن لك حرية إيقاف المقابلة والانسحاب في أي وقت بدون ذكر أي أسباب.

**ماهي الفوائد المحتملة من المشاركة؟**

لا يوجد فائدة مباشرة ناتجة من المشاركة في هذه الدراسة، لكن المعلومات التي تقدمها سوف تساعد في تسليط الضوء على أفكار الأشخاص الذين بلغوا٥٠ سنة أو أكثر عن النشاط البدني في الكويت وهذا من الممكن أن يساعد في تطوير برنامج مناسب للنشاط البدني للبالغين الكويتيين.

**ماذا لو كان هناك مشكلة؟**

في حال وجود أي شكوى عن الطريقة التي عوملت بها أثناء الدراسة أو في حال تعرضك لأي ضرر يمكنك التواصل مع المشرفة على الدراسة الدكتورة سارة بارنز أو البروفيسور جون نيكول باستخدام معلومات الاتصال المذكورة في آخر الورقة.

**هل ستبقى مشاركتي في الدراسة سرية؟**

كل المعلومات التي تجمع في هذه الدراسة سوف تبقى سرية تماماً. لن يتم ذكر اسمك في أي تقرير ينتج من هذه الدراسة. ولن يتم استخدام البيانات في أي دراسات مستقبلية غير الدراسة الحالية. لا يمكن لأحد غيري الاطلاع على البيانات التعريفية. سيتم حفظ جميع البيانات في خزنة مقفلة وستدمر جميع البيانات عند إكمال الدراسة. من المحتمل استخدام اقتباسات مباشرة عند كتابة ونشر الدراسة ولكن بدون ذكر أي أسماء أو بيانات تعريفية.

**ماذا سيحدث لنتائج هذه الدراسة؟**

النتائج سوف تكتب في أطروحة الدكتوراه التي سوف تسلم لجامعة شيفيلد (دكتوراه في الصحة والبحوث ذات الصلة) ومن الممكن أن تنشر في المجلات الأكاديمية. نتائج هذه الدراسة سوف تساعد في تطوير برنامج مناسب للنشاط البدني للبالغين ٥٠ سنة أو أكثر في الكويت.

**من قام بمراجعة هذه الدراسة؟**

هذه الدراسة تمت مراجعتها والموافقة عليها من فبل لجنة كلية الصحة والبحوث ذات الصلة، جامعة شيفيلد، المملكة المتحدة بالإضافة إلى وزارة الصحة الكويتية.

**للتواصل ومزيد من المعلومات:**

لمزيد من المعلومات رجاء لا تتردد في التواصل معي أو مع المشرفين على الأرقام التالية:

إيمان الخزي، طالبة دكتوراه – [جامعة شيفيلد – الجوال: +447745948286 – الإيميل: [ealkhezi1@sheffield.ac.uk](mailto:ealkhezi1@sheffield.ac.uk) ]

**المشرفة:** دكتورة سارة بارنز ـ [جامعة شيفيلد – هاتف: (+44) (0) 114 222 0727 – الإيميل: [s.barnes@sheffield.ac.uk](mailto:s.barnes@sheffield.ac.uk) ]

**عميد كلية الصحة والبحوث ذات الصلة:**

البروفيسور جون نيكول – هاتف: (+44) (0)114 222 5453 – الإيميل: [j.nocholl@sheffield.ac.uk](mailto:j.nocholl@sheffield.ac.uk) ]

**شكراً على وقتك في قراءة المعلومات**

# APPENDIX 10- CONSENT FORM (ENGLISH VERSION)

Participant Consent Form

|  |
| --- |
| Title of Research Project: Physical Activity Promotion among Adults Aged 50 years Old or Above: A Qualitative Study Exploring Perceptions of Physical Activity among Kuwaiti Adults  Name of Researcher: Eiman Alkhezi  Mobile Number: +44 (0)7745948286  Email: ealkhezi1@sheffield.ac.uk  Participant Identification Number for this project: Please initial box   1. I confirm that I have read and understand the information sheet dated ……….. explaining the above research project and I have had the opportunity to ask questions about the project which have been answered to my satisfaction.. 2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason and without there being any negative consequences. In addition, should I not wish to answer any particular question or questions, I am free to decline. 3. I understand that the interview will be audio recorded and transcribed. 4. I understand that my responses will be kept strictly confidential. I give permission for members of the research team to have access to my anonymised responses. I understand that my name will not be linked with the research materials, and I will not be identified or identifiable in the report or reports that result from the research. 5. I agree for the data collected from me to be used in future research 6. I agree to take part in the above research project.   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Name of Participant Date Signature  (*or legal representative*)  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Lead Researcher Date Signature  *To be signed and dated in presence of the participant* |

# sheffield logo - aloneAPPENDIX-11 CONSENT FORM (ARABIC VERSION)

جامعة شيفيلد

**إقرار الموافقة على المشاركة بالبحث**

عنوان البحث: تعزيز النشاط البدني عند الذين بلغوا ٥٠ سنة أو أكثر: دراسة نوعية لاستطلاع إدراك النشاط البدني عند البالغين الكويتيين.

اسم الباحثة: إيمان الخزي

رقم التلفون: +44 (0)7745948286

الإيميل: [ealkhezi1@sheffield.ac.uk](mailto:ealkhezi@sheffield.ac.uk)

**رقم تعريف المشارك في البحث: الرجاء وضع ( ) في المربع**

1. أقر بأني قرأت وفهمت ورقة المعلومات المؤرخة .............. التي تشرح البحث أعلاه، وأني قد أعطيت الفرصة لتقديم الأسئلة عن البحث وأن كل استفساراتي قد جوبت.
2. أدرك أن مشاركتي اختيارية، وأن لي الحق في الانسحاب في أي وقت بدون إعطاء أي أسباب وبدون أن يكون هناك أي تبعات سلبية لذلك. بالإضافة لذلك، أستطيع الامتناع عن الإجابة عن أي سؤال إذا لم أرغب بذلك.
3. أدرك بأن المقابلة سوف تسجل تسجيلاً صوتياً وتنسخ.
4. أدرك بأن إجاباتي سوف تبقى سرية. أعطي موافقتي لأعضاء فريق البحث للاطلاع على إجاباتي بدون ذكر اسمي. أدرك بأنه لن يتم ربط اسمي مع أي من مواد البحث، وأنه لن يتم ذكر اسمي في التقارير الناتجة من هذا البحث.
5. أوافق على أن تستخدم المعلومات التي أعطيها في أبحاث مستقبلية.
6. أوافق على المشاركة في البحث أعلاه.

اسم المشارك التاريخ التوقيع

اسم الباحث الرئيسي التاريخ التوقيع

(توقع وتؤرخ في وجود المشارك)

# APPENDIX 12- DEMOGRAPHIC INFORMATION

**الإسم – name**

**العمر – Age**

**الجنس –**

**الحالة الاجتماعية – Marital Status**

**الوظيفة ـ Job**

**منطقة السكن – Address**

**أرقام التواصل –Contacts**

# APPENDIX 13 – INTERVIEW SCHEDULE (ENGLISH VERSION)

Introduction

Check preferred name.

Ask if they’ve seen a copy of the information sheet – give another if necessary.

Sign consent form together (agree to send by post if appropriate).

Everything that we discuss today is confidential. The information that we collect from the interview will be made anonymous. With your permission I would like to record the interview. This will help me to focus on the important things that you say and I won’t have to make any notes during our discussion. However, if you would prefer for me not to record the interview then let me know and I can take notes.

The interview will take us approximately one hour to complete.

End by asking if there is anything they want to add, or any important issues they feel were left out.

Thank them for their time.

**Example of interview questions with adults over 50 years old:**

1. What does being active mean to you? (probe: can you list activities you think describe physical activity?)
2. Can you tell me some of the reasons why people like you would be active?
3. Can you tell me some of the reasons why people like you do not be active?
4. what do you think are the best things about being active?
5. What do you think are the worst things that could happen when engaging in PA?
6. if you have to think of some things you could do to incorporate physical activity in your life? And what would encourage you to do so?
7. thinking about all people around you, who has the most influence on how active you are?
8. Can you talk me through a typical day in your life (prompt: daily routines)?
9. Is there anything else about physical activity that we have not been discussed and you think is important?

**Example of interview questions with significant people in older adults’ lives:**

1. What does being active (physical activity) mean to you?
2. do you think people get less active as they get older? And why?
3. Can you tell me some of the reasons why people over 50 years old would be active?
4. Can you tell me some of the reasons why people over 50 years old do not be active?
5. what do you think are the best things about being active for person over 50 years old?
6. What do you think are the worst things that could happen to people over 50 years old when engaging in PA?
7. if you have to think of some things people over 50 years old could do to incorporate physical activity in their lives? And what would encourage them to do so?
8. How can (you) be source of encouragement and support to adults over 50 to be more active?
9. Is there anything else about physical activity that we have not discuss and you think is important?

# APPENDIX 14- INTERVIEW SCHEDULE (ARABIC VERSION)

**المقدمة**

التحقق من اللقب المفضل.

التحقق ما إذا قرأ ورقة المعلومات – أعطيه الورقة إذا استدعى الأمر.

نوقع إقرار المشاركة سوياً.

بسم الله الرحمن الرحيم- كل ما نناقشه اليوم سيبقى سرياً. المعلومات التي نجمعها أثناء المقابلة ستكون مجهولة المصدر. بعد إذنك سيتم تسجيل المقابلة، هذا سيساعدني في التركيز على النقاط المهمة التي تقولها ولن أضطر لأخذ الملاحظات أثناء النقاش. لكن إذا كنت تفضل ألا تسجل المقابلة فقط أخبرني بذلك وسأقوم بأخذ الملاحظات.

المقابلة ستستغرق حوالي ساعة.

**مثال للأسئلة التي توجه لمن بلغ ال٥٠ سنة أو أكثر:**

1. ماذا يعني لك أن تكون نشيطا (حركياً)؟ (هل يمكنك أن تذكر بعض الأنشطة التي تعتقد أنها تصف النشاط البدني)
2. هل من الممكن أن تخبرني ببعض الأسباب التي من الممكن أن تجعل شخصاً مثلك نشيطاً (حركياً)؟
3. هل من الممكن أن تخبرني ببعض الأسباب التي من الممكن أن تجعل شخصاً مثلك غير نشيطاً (حركياً)؟
4. باعتقادك ماهي الأشياء الجيدة التي من الممكن أن تنتج إذا كنت نشيطاً؟
5. باعتقادك ماهي الأشياء السيئة التي من الممكن أن تحدث إذا تبنيت النشاط البدني؟
6. هل يمكنك أن تفكر ببعض الأشياء التي من الممكن أن تفعلها لدمج النشاط البدني في حياتك؟ ما الذي من الممكن أن يشجعك لفعل ذلك؟
7. عندما تفكر في الناس من حولك، من لديه أكبر تأثير على مدى نشاطك (البدني)؟
8. هل من الممكن أن تصف يوما في حياتك؟ (روتينك اليومي)
9. هل يوجد شيء آخر عن النشاط البدني لم نناقشه وتعتقد أنه مهم؟

شكراً على وقتك.

**مثال للأسئلة التي توجه للأشخاص المهمين في حياة كبار السن:**

1. ماذا يعني لك أن تكون نشيطا (النشاط الحركي)؟
2. هل تعتقد أن النشاط البدني يقل عندما يتقدم الناس بالعمر؟ ولماذا؟
3. هل من الممكن أن تخبرني ببعض الأسباب التي من الممكن أن تجعل من بلغ ال٥٠ من العمر نشيطاً (حركياً)؟
4. هل من الممكن أن تخبرني ببعض الأسباب التي من الممكن أن تجعل من بلغ ال٥٠ من العمر غير نشيط (حركياً)؟
5. باعتقادك ماهي الأشياء الجيدة التي من الممكن أن تنتج إذا كان من بلغ ال٥٠ نشيطاً؟
6. باعتقادك ماهي الأشياء السيئة التي من الممكن أن تحدث إذا تبنى من بلغ ال٥٠ النشاط البدني؟
7. هل يمكنك أن تفكر ببعض الأشياء التي من الممكن أن يفعلها من بلغ ال٥٠ لدمج النشاط البدني في حياتهم؟ ما الذي من الممكن أن يشجعهم لفعل ذلك؟
8. كيف يمكنك أن تكون مصدر تشجيع ودعم لمن بلغ ال٥٠ ليكون أكثر نشاطاً؟
9. هل يوجد شيء آخر عن النشاط البدني لم نناقشه وتعتقد أنه مهم؟

شكراً على وقتك.

# APPENDIX 15- POSTERS AND LEAFLETS (ENGLISH VERSION)

**Are you:**

**Kuwaiti male or female?**

**Interested to talk about your lifestyle?**

**Over 50 years old?**

**I want to Talk to you!**

**I am a PhD student doing a study about the promotion of physical activity among people over 50 years old in Kuwait. I want to interview you and listen to your thoughts about physical activity and how it can be promoted in Kuwait.**

**If you are interested, please email me on** [**ealkhezi1@sheffield.ac.uk**](mailto:ealkhezi1@sheffield.ac.uk) **or text me (watsApp) on +447745948286**

# APPENDIX 16- POSTERS AND LEAFLETS (ARABIC VERSION)

هل أنت:

**تود التحدث عن نمط حياتك؟**

**كويتي (ذكر أو أنثى)؟**

**تبلغ من العمر ٥٠ سنة أو أكثر؟**

**أود التحدث إليك!**

**أنا طالبة دكتوراه أقوم بإجراء دراسة عن تحفيز النشاط البدني عند الأشخاص الذين بلغ عمرهم ٥٠ سنة أو أكثر في الكويت. أود إجراء مقابلة معك للاستماع لأفكارك حول النشاط البدني وكيفية تحفيزه في الكويت.**

**إذا كنت تود المشاركة، الرجاء إرسال إيميل على:**

[**ealkhezi1@sheffield.ac.uk**](mailto:ealkhezi1@sheffield.ac.uk)

**أو إرسال رسالة نصية (واتس اب) على الرقم: +447745948286**

1. Metabolic Equivalent of Task (METs) is ‘the ratio of work metabolic rate to a standard resting metabolic rate of1.0 (4.184kJ). kg−1·h−1, 1 MET is considered a resting metabolic rate obtained during quiet sitting’. (Ainsworth et al., 2000, p. S498) [↑](#footnote-ref-1)
2. Victim-blaming can be defined as ‘an ideology which blames the individual for her or his illness and proposes that, instead of relying on costly and inefficient medical services, the individual should take more responsibility for her or his health’ (Crawford, 1977, p.663). Victim blaming is charac­terised by ‘an approach which places undue emphasis on the individual lifestyle and choice and ignores the social and political contexts in which such issues occur’ (Caraher, 1995, p.1190). [↑](#footnote-ref-2)
3. **Based on IPAQ (2004): ‘HIGH** engage in vigorous intensity activity on at least 3 days achieving a minimum total PA of at least 1500 MET minutes a week OR 7 or more days of any combination of walking, moderate intensity or vigorous intensity activities achieving a minimum total PA of at least 3000 MET minutes a week - **MODERATE** engage in 3 or more days of vigorous intensity activity and/or walking of at least 30 minutes per day OR 5 or more days of moderate intensity activity and/or walking of at least 30 minutes per day OR 5 or more days of any combination of walking, moderate intensity or vigorous intensity activities achieving a minimum total PA of at least 600 MET minutes a week - **LOW** level of PA on the IPAQ means that you are not meeting any of the criteria for either MODERATE of HIGH levels of physical activity’. [↑](#footnote-ref-3)
4. Physically active if they accumulated at least 150 minutes of moderate activity per week [↑](#footnote-ref-4)
5. Based on Stages of Change: subjects in Action or Maintenance stages considered physically **Active**, Preparation stage **Moderate**, Contemplation and Precontemplation were considered **Low.** [↑](#footnote-ref-5)
6. Physically active for 30 or more minutes, two or more days per week [↑](#footnote-ref-6)
7. Based on GPAQ: ‘**High** includes (a) vigorous-intensity activity on at least 3 days with a total of at least 1500 METs-minutes/week OR (b) ≥ 7 of any combination of walking, moderate-or-vigorous-intensity activities with a total of at least 3000 METs-minutes/week.- **Moderate** includes (a) ≥ 3 days of vigorous-intensity activity of at least 20 minutes/day OR (b) ≥ 5 days of moderate-intensity and /or walking of at least 30 minutes/day OR (c) ≥ 5 days of any combination of walking, moderate-or-vigorous-intensity activities with a total of at least 600 METs-minutes/week. - **Low**: No activity is reported or reported activities did not comply with the previous criteria’. [↑](#footnote-ref-7)
8. PA three times or more per week engaging in vigorous activity for 20 minutes or more. [↑](#footnote-ref-8)
9. Based on WHO recommendations, a minimum of 150 minutes/week of moderate-intensity physical activity is required for adults (equivalent to 600 MET minutes/week). [↑](#footnote-ref-9)
10. diwāniyyah [ديوانية], which is a secluded reception area where male guests are received to gather and discuss various issues, can be held daily (casual, for immediate family members and close friends) or weekly (more formal, for relatives and friends). In GCC countries, Diwaniya is considered a fundamental part of men’s social life, and attending diwaniya is a priority for all men. Women have their own social gatherings, such as mid-morning tea, where friends and neighbours gather to socialise in one woman’s house (KGO, 2018). [↑](#footnote-ref-10)
11. First-generation *diwāniyyah* places where older adults can gather daily, sponsored by a co-operative society in each area. It is open during the morning from 9:00 to 12:30, during which time the visitors can chat, watch TV, read newspapers, play games and generally socialise. [↑](#footnote-ref-11)