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Community-based initiatives and mental wellbeing: a mixed methods study of parkrun

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Community-based initiatives and mental wellbeing: a mixed methods study of parkrun.

Allison Ruth Dunne

A thesis submitted in partial fulfilment of the requirements of
Sheffield Hallam University
for the degree of Doctor of Philosophy

September 2024

Candidate Declaration

I hereby declare that:

1. I have not been enrolled for another award of the University, or other academic or professional organisation, whilst undertaking my research degree.

2. None of the material contained in the thesis has been used in any other submission for an academic award.

3. I am aware of and understand the University's policy on plagiarism and certify that this thesis is my own work. The use of all published or other sources of material consulted have been properly and fully acknowledged.

4. The work undertaken towards the thesis has been conducted in accordance with the SHU Principles of Integrity in Research and the SHU Research Ethics Policy.

5. The word count of the thesis is 53,808

Name	Allison Ruth Dunne
Date	September 2024
Award	PhD
Research Institute	Health
Director(s) of Studies	Professor Steve Haake

Thesis abstract

Community-based initiatives, combining a purposeful activity with social connection, are a health promotion intervention for people at risk of poor mental wellbeing. Evidence from the weekly community initiative parkrun has indicated that participation may have mental wellbeing benefits but the factors influencing this effect are unknown. This programme of research aimed to explore these factors using a mixed-methods approach.

Study One was a secondary data analysis of a cross-sectional survey of 4,304 parkrun participants in Ireland. The findings revealed that participants aged over 45 years reported higher-than-expected mental wellbeing scores and were more sociable than younger parkrun participants. These results, along with extant literature, suggested that middle-aged men who participate in parkrun are a population which merited further investigation.

Study Two employed a qualitative approach to explore mental wellbeing and social experiences of middle-aged men who attend parkrun in Ireland. Online, semi-structured interviews were completed with 39 men aged 45-64 years. Reflexive thematic analysis resulted in themes describing parkrun events as a supportive environment for mental wellbeing, with a choice of social connection which developed over time.

Study Three used interview data from Study Two to develop personas representing the social goals of middle-aged men who attend parkrun in Ireland. The personas, along with consultation with key stakeholders, were used to develop policy and practice recommendations.

The significant original contribution to knowledge in this thesis is that participation in parkrun can support mental wellbeing, through social experiences, for middle-aged men in Ireland. The findings showed that parkrun is a place where members of the community can make social connections. For middle-aged men in Ireland these connections can support mental wellbeing. The research provides insights which can be used to inform health promotion policy and practice for parkrun and similar community initiatives.

Acknowledgements

I would firstly like to express my deepest gratitude to my supervisors Professor Steve Haake, Dr Helen Quirk and Dr Alice Bullas. Steve, I really appreciate your belief in me and your support for remote working before it became fashionable in the COVID-19 pandemic. Helen, you were so patient and kind with my writing efforts in the early days and you showed me the true benefits of qualitative methods. Alice, your enthusiasm for research inspired me and I really value all your career advice. Thanks also to Dr Lisa Pursell at University of Galway for allowing me to develop my teaching skills close to home.

I am also grateful to my fellow PhD students at Sheffield Hallam University. You always made me feel welcome during my annual visits and the WhatsApp group was a true lifeline. A special mention must go to my fellow parkrun PhD researcher Charlotte Benkowitz; thank you for being a supportive colleague and friend throughout the whole process. Many thanks also to the administration, academic, and library staff at Sheffield Hallam university for all your support.

I would like to extend my sincere thanks to Matt Shields and Padraig Fahey from parkrun Ireland for sharing your expertise so generously.

Special thanks to all the parkrun volunteers, walkers and runners who took part in this study. It was an honour to hear your personal stories and I am grateful that you allowed me to use your experiences to help the future mental wellbeing of others through this research. Thanks also go to the public and stakeholder consultation group members who contributed to this study.

I must acknowledge the help and support from my family. Special thanks to my mum, Valerie, for showing me the value of education, my dad, Anthony (RIP), for the inspirational work ethic and my sister, Lyndsay, for sharing your love of books with me. Huge thanks also to Pauline for your willingness to help while you were busy with your own studies. Finally, I could not have completed this thesis without the endless love and patience from James, Séamus and Lorcán. Go raibh míle maith agaibh.

Outputs from this thesis

Peer reviewed journal publications

Dunne, A., Quirk, H., Bullas, A., & Haake, S. (2024). 'My parkrun friends.' A qualitative study of social experiences of men at parkrun in Ireland. Health promotion international, 39(3). https://doi.org/10.1093/heapro/daae045

Dunne, A., Haake, S., Quirk, H., & Bullas, A. (2021). Motivation to improve mental wellbeing via community physical activity initiatives and the associated impacts - A cross-sectional survey of UK parkrun participants. International journal of environmental research and public health, 18(24), 13072. doi:10.3390/ijerph182413072.

Publication under review: Dunne, A., Bullas, A., Quirk, H. & Haake, S. Social experiences during participation in a community physical activity initiative: a cross-sectional study of parkrun participants in Ireland.. Submitted to European journal for sport and society, September 2023.

Publication prepared for submission: Dunne, A., Bullas, A., Quirk, H. & Haake, S. Exploring the use of personas in health promotion practice and policy development: A qualitative study of middle-aged men at parkrun in Ireland. Prepared for submission to Health promotion practice, September 2024.

Peer-reviewed conference proceedings

Dunne, A., Quirk, H., Bullas, A., Haake, S. (2024). “I enjoyed the camaraderie, the atmosphere and the inclusiveness of parkrun.” A qualitative study to explore mental wellbeing in middle-aged men at parkrun Ireland. Oral presentation. WHO European network for health-enhancing physical activity conference, Dublin, 19th-21st August 2024.

Dunne, A., Quirk, H., Bullas, A., Haake, S. (2024). “parkrun is a place you can talk.” Strong and weak social ties between middle-aged men attending parkrun in Ireland: reflexive thematic analysis. Poster presentation, International union of health promotion and education European conference on health promotion, Łódź, Poland. 17th -18th June 2024.

Dunne, A., Quirk, H., Bullas, A., & Haake, S. (2023). “Out and about and feeling good in yourself.” Middle-aged men at parkrun describe mental wellbeing. Oral presentation. School of nursing, midwifery and health systems conference, Dublin, Ireland. 17th-18th August 2023.

Dunne, A. & Benkowitz, C. (2022). Reducing Inequity Using Community Initiatives. A Consideration of Social Prescribing of parkrun in Ireland. Oral presentation. 26th Health promotion conference, Health inequity, action for change. Galway, 16th June 2022.

Dunne A., Haake, S,. Quirk, H., Bullas, A. & Twardochleb, R. (2022). Challenge, Connect and Change: Can parkrun participation impact the mental wellbeing of middle-aged men in the UK? Oral presentation. International union for health promotion and education conference, Montreal Canada (online) May 16th 2022.

Dunne, A., Haake, S,. Quirk, H. & Bullas, A. (2020). Can access to green spaces during parkrun events contribute to the positive mental health of the participants? A literature review. Oral Presentation, 24th Annual Health Promotion Conference, Promoting health and wellbeing: creating a more equitable and sustainable environment. 18th June 2020.

Seminars

Dunne, A. (2024). A tale of 305 codes: Using NVivo as a tool for Reflexive Thematic Analysis. Health Research Institute methodology seminar. Sheffield Hallam University. 23rd January 2024.

Dunne, A. (2021). How can community based initiatives support mental wellbeing? A case study of parkrun. Sport and Physical Activity Research Centre Seminar. Sheffield Hallam University. 10th May 2021. https://youtu.be/w7ttW_ZkNPM

Journalism/Featured media

Dunne, A (2024). News feature describing “My parkrun friends” publication. BBC Radio Sheffield interview. Broadcast 14/06/2024.

Dunne, A (2024). Who are your parkrun friends? Social experiences of men at parkrun Ireland. Blog for parkrun Ireland. June 2024.

Abbreviations

COVID-19 – Coronavirus disease of 2019

GP – General Practitioner

km – kilometre

PPI – Patient and Public Involvement

SHU – Sheffield Hallam University

SWEMWBS – Short Warwick Edinburgh Mental Wellbeing Scale

UK – United Kingdom

WHO – World Health Organization

PhD candidate contribution

The PhD candidate, Allison Dunne, designed the protocols and obtained ethical approval for all the studies described in this thesis. The candidate's academic supervisors (Professor Steve Haake, Dr Helen Quirk and Dr Alice Bullas) conducted the parkrun Health and Wellbeing survey. The candidate wrote the protocol for, and conducted a secondary data analysis of, the Health and Wellbeing survey data (Study One). The candidate developed the rationale for and conducted the interview study with middle-aged men in Ireland (Study Two). The candidate also developed the protocol for persona development and conducted the stakeholder and public consultation (Study Three). The candidate conducted all data analysis, interpretation and presentation of results for the studies described here. The candidate was lead author on all published papers relating to the research presented in this thesis.

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Chapter One. Introduction

1.1 Overview of the chapter

This chapter will introduce the concepts and frameworks used throughout the thesis. It will also describe the research topics and provide an overview of the published literature relating to these. The chapter will outline the background information to support the aim of the thesis which is to explore the mental wellbeing of parkrun participants in Ireland and understand the factors influencing any changes to mental wellbeing following parkrun participation.

1.1.1 A note regarding terminology

Throughout this thesis the term "Ireland" will refer to the geographical area covered by the Republic of Ireland (26 counties). This does not include the six counties of Northern Ireland which are part of the United Kingdom but form part of the island of Ireland (Department of Foreign Affairs, 2024).

1.2 Introducing health and health promotion

This thesis is guided by the principles of health promotion. To understand health promotion, it is important to first consider what is meant by the term health. There are many definitions and discussions around what it means to be healthy (Huber et al., 2011; McCartney et al., 2019; Tkatch et al., 2017; Wills, 2023) and these can vary according to age, education, culture and religious beliefs (Huber et al., 2011; Wills, 2023). As health promotion practice is strongly associated with guidance from the World Health Organization (WHO) their definition will be used: "Health is a state of complete physical, mental and social wellbeing and not merely the absence of disease and infirmity" (WHO, 1946, p. 1). In 1986 there was an expansion of this definition such that: "Health is therefore seen as a resource for everyday life, not the objective of living; it is a positive concept emphasising social and personal resources as well as physical capacities" (WHO, 1986, p. 1).

The term health promotion was first used by Lalonde (1974) when he proposed a move away from the biomedical model for health and towards a socio-ecological model. The biomedical model is commonly used in medicine and public health and has a focus on detecting and treating disease (Wills, 2023). Socio-ecological models are used to consider health from a broader perspective, focussing on positive health and taking community, living conditions and the environment into consideration for the health of an individual (Wills, 2023). The WHO continued the work of Lalonde and health promotion was defined by the WHO in their Ottawa Charter as "the process of enabling people to increase control over and to improve their health" (WHO, 1986, p. 1). The charter uses a socio-ecological model to promote health at the individual, community and population level and has a focus on non-communicable disease prevention: cancer; mental health conditions; diabetes and cardiovascular disease (WHO, 2024). The Ottawa Charter set out three processes: enable; mediate; advocate, and five key action areas to guide health promotion practice: build healthy public policy; create supportive environments; reorient health services; strengthen community action; develop personal skills (WHO, 1986). Described as the gold standard for health promotion (Thompson et al., 2018), it is still used to inform global health promotion practice (Kickbusch, 2012; Stock, 2023; Wilberg et al., 2021).

An alternative socio-ecological framework used in health promotion is the determinants of health model (Dahlgren & Whitehead, 1991). It is commonly used to describe the "causes of the causes" (Marmot, 2005, p. 1102) of poor health and wellbeing such as the social determinants of health (Dahlgren & Whitehead, 2021; Dyar et al., 2022). The Ottawa Charter and determinants model are commonly used frameworks for health promotion practice and research (Wills, 2023). For this thesis a choice was made to use the Ottawa Charter as the determinants model was not originally based on evidence and does not acknowledge the digital or commercial determinants of health (Dyar et al., 2022; Kickbusch, 2012). An update to the determinants model has been proposed (Dyar et al., 2022) which may make it an option for future health promotion research.

In socio-ecological models, mental, physical and social health and wellbeing are equally important and are interlinked to describe the overall health of an individual (Barry et al., 2019; Wills, 2023). The research in this thesis will focus on mental wellbeing, while

acknowledging that mental wellbeing does not exist without concurrent physical and social wellbeing.

1.3 Mental wellbeing

1.3.1 Defining mental health and mental wellbeing

Mental health is defined as; “a state of mental wellbeing that enables people to cope with the stresses of life, realize their abilities, learn well and work well, and contribute to their community” (WHO, 2022c, p. 1). The WHO definition continues to include the following: “Mental health is more than the absence of mental disorders. It exists on a complex continuum, which is experienced differently from one person to the next, with varying degrees of difficulty and distress and potentially very different social and clinical outcomes” (WHO, 2022c, p. 1). The concept of a mental health continuum was described by Keyes (2002), where the mental health of an individual can be described as positive (flourishing) or negative (languishing) at any one moment in time. Positive mental health, the term used by Keyes (2005) can also be called mental wellbeing (Bache, 2019; Health Service Executive, 2022; Tennant et al., 2007; Weich et al., 2011). The term mental wellbeing will be used in this thesis as it is more commonly used by the United Nations and WHO.

Mental wellbeing can be measured from an objective or subjective perspective (Cooke et al., 2016; Trudel-Fitzgerald et al., 2019). Objective wellbeing can include economic measures such as standard of living (Trudel-Fitzgerald et al., 2019) whereas subjective wellbeing relates to psychological and social aspects of wellbeing (Trudel-Fitzgerald et al., 2019). Mental wellbeing can be further subdivided into hedonic, relating to pleasure and happiness, and eudaimonic, usefulness in society and fulfilling potential (Ryan & Deci, 2001; Tennant et al., 2007). This thesis will focus on subjective mental wellbeing, including both hedonic and eudaimonic aspects. The subdivisions of mental wellbeing are shown in Figure 1 which was created by the PhD candidate based on information in Ryan and Deci (2001), Tennant et al (2007) and Trudel-Fitzgerald et al (2019).

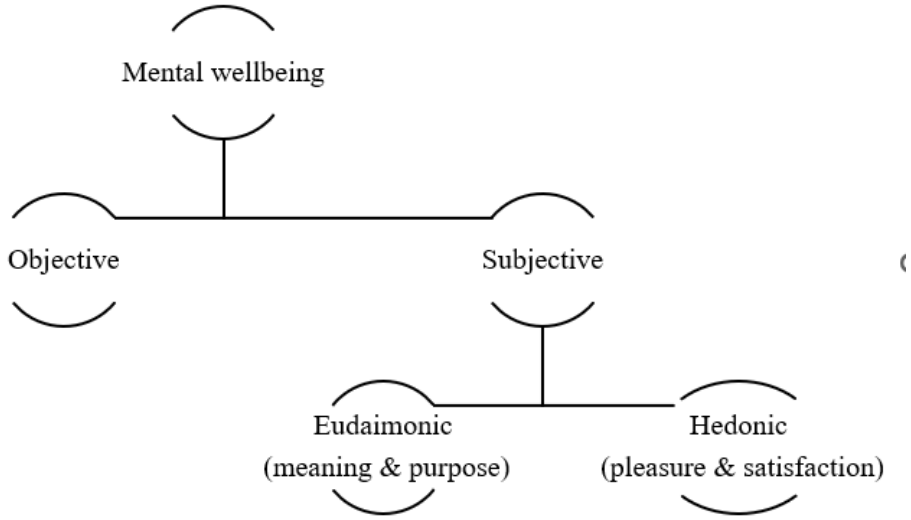


Figure 1 Overview of mental wellbeing subdivisions

Maintaining mental wellbeing is important to feeling good and functioning well (Health Service Executive, 2022). When mental wellbeing is consistently poor it can have a long term impact on the development and treatment of mental health conditions (Barry et al., 2019).

1.3.2 Mental wellbeing and mental health conditions

Mental health conditions can include, but are not limited to, depression, anxiety disorders, bipolar affective disorder and schizophrenia (WHO, 2022b). The global classification for mental health condition diagnosis is the International Classification of Diseases, 11th revision (ICD-11) (WHO, 2022a). Not everyone with a diagnosed mental health condition has poor mental wellbeing: if treated and in remission a person with a diagnosed mental health condition can have good day to day mental wellbeing (Keyes, 2002; WHO, 2022c). Maintaining good mental wellbeing is a protective factor against developing future mental health conditions (Barry et al., 2024; Keyes et al., 2010; Slade, 2010).

1.3.3 Mental health promotion and mental wellbeing

It is thought that approximately 30% of a person's mental wellbeing comes from inherited or dispositional factors (Trudel-Fitzgerald et al., 2019). The other influences on mental

wellbeing include social, cultural, economic and environmental factors; one or more of these determinants should be targeted in any mental health promotion intervention or strategy (Barry et al., 2019; WHO, 2022c).

Mental health promotion goes beyond treating mental health conditions by encouraging good mental wellbeing for individuals, communities, and populations (Barry et al., 2019; International Union for Health Promotion and Education, 2021; Purtle et al., 2020). Mental health promotion interventions can be designated as universal (open to all), selective (targeting one gender, age or sociodemographic group) or indicated (aimed at people with clinical symptoms of mental health conditions) (Herman & Jané Llopis, 2005; International Union for Health Promotion and Education, 2021). The importance of mental health promotion has been recognised by the United Nations in their Sustainable Development Goals, Goal 3.4: "Reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and wellbeing" (United Nations, 2015, p. 20). Since the coronavirus disease of 2019 (COVID-19) global pandemic, mental health promotion is considered even more crucial, as international measures to prevent the spread of COVID-19 (social distancing and lockdowns) increased the socioeconomic risks of mental health conditions in addition to increasing stress and anxiety throughout the population (WHO, 2022d). A recent extensive review of mental health promotion interventions has called for an urgent increase in funding and a scaling up of evidence-based initiatives to support individual and population mental wellbeing (Barry et al., 2024).

1.3.4 Mental wellbeing and suicide prevention

Prolonged periods of poor mental wellbeing can lead to depression, which, in itself, is associated with increased suicide risk (Ribeiro et al., 2018). The association between poor mental wellbeing and suicide risk is complex (Qian, 2019). Suicide risk is multifactorial and may include financial, sociological, and environmental influences in addition to psychological factors such as mental wellbeing (Healthcare Quality Improvement Partnership, 2021; Suh et al., 2021). Suicide prevention strategies can include psychotherapy, reduction of access to means or treatment of depression with medication in addition to health promotion interventions to support mental wellbeing (Mann et al.,

2021). When evaluating mental health promotion interventions it is difficult to demonstrate long term reduction in suicide rates (Herman & Jané Llopis, 2005). Measuring indicators such as subjective wellbeing or social connectedness are more practical and appropriate way of assessing the impact of such interventions (Herman & Jané Llopis, 2005; Hsu et al., 2019). Suicide prevention should include health promotion activities which strengthen protective factors against suicidal behaviour (Rochford et al., 2023) including initiatives which target the social and community determinants of health (Department of Health, 2015).

1.4 Mental wellbeing in Ireland

Mental wellbeing for the population of Ireland is regularly measured as part of the Healthy Ireland survey using the Energy and Vitality Index (Department of Health, 2023). Using longitudinal data there has been a decrease in Energy and Vitality Index scores since the COVID-19 pandemic with the number of people recording high scores reducing from 12% to 9% between 2021 and 2023 (Department of Health, 2023). Prevalence of mental health conditions in Ireland is higher than the European average: using data from 2019, 21 % of the population of Ireland reported having a mental health condition, higher than the EU average of 16.7% (European Observatory on Health Systems and Policies, 2023).

To address the high rates of poor mental health in Ireland the Health Service Executive (Ireland's public health service provider) launched their first mental health promotion plan, Stronger Together (Health Service Executive, 2022). The plan highlights the importance of "community empowerment programmes that enhance social capital" (Health Service Executive, 2022, p. 6) which could include volunteering, life skills and relationship supports, as described by the International Union for Health Promotion and Education (2021). Stronger Together was written for the post-pandemic population and has a theme of Belonging Well which uses the community as a setting for health promotion (Health Service Executive, 2022).

1.4.1 Health inequity and mental wellbeing in Ireland

Mental wellbeing follows the social gradient for health identified by Marmot (Marmot, 2005; Marmot, 2020). This means that people living in areas of deprivation or from minority groups are most likely to have poor health and wellbeing (Marmot, 2005). Marmot recommended that health promotion interventions should aim to reduce social inequalities (Marmot et al., 2008). Using the Ottawa Charter framework (WHO, 1986) this would include interventions at the community and environmental level. In Ireland there has been research into various aspects of social inequalities and health. For example, Irish Travellers, a minority ethnic group, have significantly poorer mental wellbeing than the general population of Ireland (Hodgins & Fox, 2014; Villani & Barry, 2021). Living in areas of deprivation (Sorin et al., 2022) or in rural communities, where isolation and loneliness are common can also lead to poor mental wellbeing, particularly for men (O'Donnell & Richardson, 2020). These factors are important to consider when planning or implementing interventions to support mental wellbeing, ensuring that interventions are appropriate and accessible for those who have the greatest need (Wills, 2023). Marmot described the practice of providing a universal intervention which is scaled to those most in need as proportional universalism (Francis-Oliviero et al., 2020). This strategy has been recommended by the WHO in their current global action plan for physical activity (WHO, 2018).

1.4.2 Suicide rates in Ireland

Suicide rates in Ireland decreased slightly in the ten years leading up to the COVID-19 pandemic as the country recovered from an economic recession (Rochford et al., 2023). However this was not the case for all population groups in Ireland and, with the complication of secondary effects of the pandemic, mental health promotion remains a priority area for policy (International Union for Health Promotion and Education, 2021; Rochford et al., 2023). A study by Cox et al (2022) reports data from deaths by probable suicide in Ireland from 2015 to 2018 (Cox et al., 2022). The highest numbers of probable suicides were from the age group 35-54 years (all genders) and 76% of probable suicides from all age groups were by men. The age group with the highest number of deaths for men was 40-44 years. Only 66% (of all ages and genders) had a history of a mental health

condition which highlights the need for suicide prevention services across all sections of the community, not just those in contact with healthcare professionals (Cox et al., 2022).

The suicide prevention strategy for Ireland, Connecting for Life, was launched in 2015 and has been extended to 2024 (Department of Health, 2015; Health Service Executive, 2023; Rochford et al., 2023). The strategy is implemented in conjunction with Sharing the Vision, the mental health services policy (Department of Health, 2020) and the Stronger Together mental health promotion plan (Health Service Executive, 2022). The Connecting for Life goal is to empower individuals and communities to support mental health and wellbeing (Department of Health, 2015). Connecting for Life strategy lists demographic groups at high risk of suicide in Ireland as young people, middle aged men and women, and the economically disadvantaged (Department of Health, 2015).

1.4.3 Gender differences in health and mental wellbeing in Ireland

In Ireland there is a gender gap in life expectancy, with men having a life expectancy at birth nearly four years lower than women (Department of Health, 2024). This can be attributed to a wide range of factors including cardiovascular disease, cancers, accidents and suicide (Health Service Executive, 2016). A recent study of probable suicides in Ireland found that three out of four suicides was by a male (Cox et al., 2022). In response to these gender differences the government of Ireland introduced the world's first men's health promotion policy in 2008 and subsequently updated in 2016 (Health Service Executive, 2016). The policy supports the use of selective, gender-specific, community initiatives for men in Ireland as part of the strategy to address these health inequalities (Health Service Executive, 2016).

1.5 Strengthening community action for mental wellbeing

One health promotion strategy to support mental wellbeing and contribute towards suicide prevention is the use of community initiatives. Community can be defined as a group of people with common goals or interests, grouped by geographical, cultural or social factors (Wills, 2023). The Ottawa Charter pillar of strengthening community action recommends community empowerment and engagement for health promotion (Saadati et al., 2022). Using a community centred approach to mental health promotion can be an

effective way of reaching socially marginalised groups (Laverack & Mohammadi, 2011) but outcomes can be difficult to quantify (Wills, 2023). A recent review named six indicators for community action: social capital, social network, social support, social cohesion, community capacity and community participation (Saadati et al., 2022). There is not one single scale or measure which combines these indicators (Saadati et al., 2022) but several of them are interlinked and will be discussed in detail below.

1.5.1 Defining social support

Definitions for social support have changed over the past decades but it is generally understood to refer to behaviour from one person which assists another person to achieve a specific goal (Van Luchene & Delens, 2021). It can relate to an interaction between two people or can include interactions between people in a wider social network (Cohen & Wills, 1985; Shumaker & Brownell, 1984). Social support is provided by non-professionals and can be formal through peer support groups or informal from friends and family (Gottlieb & Bergen, 2010).

Three levels of social support are described by Schulder *et al* (2022):

1. Individual; perception of social support,
2. Network; spending time with others,
3. Neighbourhood; social cohesion and perception of the local community.

Social support can be provided through two key types of social relationships: close family and friends and casual relationships (Gottlieb & Bergen, 2010). These were described by Granovetter (1973) as strong and weak ties, and took into consideration the time investment, emotional intensity, intimacy and reciprocity involved (Granovetter, 1973). He argued that weak ties are valuable in forming connections between people from diverse groups and strengthening communities (Granovetter, 1973). The structure of an individual's social ties and how they relate to other people's ties is called a social network (Gottlieb & Bergen, 2010).

1.5.2 Social support and mental wellbeing

Social support has been recognised as a determinant of health for over 40 years. In the 1980s Cohen and Wills (1985) proposed mechanisms for how social support can protect

mental wellbeing via a buffering effect (Cohen & Wills, 1985). Social support has also been an important factor in maintaining mental wellbeing via improvement in self-esteem and a sense of security to make that person less vulnerable to the effects of stressful situations (Shumaker & Brownell, 1984). Social support through weak ties can be beneficial for mental wellbeing; for example, a brief social interaction with a barista when buying a coffee can provide a feeling of belonging and improve wellbeing (Sandstrom & Dunn, 2014).

It should be noted that perception of social support is mentioned by Schulder et al (2022) at the individual level. Even early research in this area recognised that perceived support (the knowledge that support is available if needed in a crisis) is beneficial to mental wellbeing in addition to any enacted (received) social support (Barrera, 1986) and that the buffering hypothesis from Cohen and Wills (1985) may be an explanation for this phenomenon. Newer research in this area supports these claims (Jackman et al., 2022).

1.5.3 Defining social capital

Another indicator for community action is social capital (Saadati et al., 2022). Social capital relates to the worth of interpersonal relationships taking into account the size of network of social connections and how much value each connection has (Bourdieu, 1986; Putnam, 2000). Putnam developed this concept by proposing two forms of social capital: bonding and bridging (Helliwell & Putnam, 2004; Putnam et al., 1993). Bonding capital describes connections between individuals who are of the same social class, age or ethnicity (Helliwell & Putnam, 2004). In contrast, bridging capital explores relationships beyond this network to "bridge" to individuals or organisations outside the usual social circle to provide benefits to the people in that network (Ferlander, 2007; Helliwell & Putnam, 2004). An example of bridging capital would be a social connection between a young construction worker and a middle-aged bank employee. The concept of linking capital is an extension of bridging capital which describes relationships between people with different levels of power or authority (Szreter & Woolcock, 2004), perhaps between a young construction worker and a bank manager.

1.5.4 Social capital and mental wellbeing

The mental wellbeing benefits of social capital have been highlighted by the International Union for Health Promotion and Education, who recommend initiation of community empowerment programmes in the post COVID-19 pandemic environment (International Union for Health Promotion and Education, 2021). Community empowerment programmes include a wide range of initiatives including volunteering, life skills training and promotion of healthy relationships, all of which can enhance social connections (International Union for Health Promotion and Education, 2021). Building of social capital is mentioned in the Irish mental health promotion plan Stronger Together and described as "the invisible glue that binds communities together" (Health Service Executive, 2022, p. 29). These recommendations follow a growing body of research which indicate that social capital is strongly linked to subjective wellbeing and life satisfaction (Helliwell & Putnam, 2004). Studies show that sense of belonging and social cohesion provided through meaningful social activities benefit mental wellbeing (Forsman et al., 2013; Williams et al., 2020). High levels of social capital may be protective against the development of mental health conditions (Ehsan et al., 2021; Lecerof et al., 2016) with possible greater benefit for men (Landstedt et al., 2016).

Social capital is not always of benefit to individuals (Ferlander, 2007; Villalonga-Olives & Kawachi, 2017). For example, strong bonding within groups can sometimes lead to the formation of cliques and exclusion of others (Crothers et al., 2009), leading to poor mental wellbeing for the excluded person.

Social support and social capital are closely linked (Beausaert & Kyndt, 2023; Leal et al., 2011). An individual who has a wide network of friends and acquaintances can use that resource when emotional or practical support is needed. Conversely poor social support, low levels of social capital, loneliness and narrow social networks can be contributing factors in the development of mental health conditions (Lee et al., 2021; Pearce et al., 2023).

1.6 Community initiatives for mental wellbeing

Community-based health promotion initiatives can support mental wellbeing by addressing the social determinants of health (Ballinger et al., 2008; Baskin et al., 2021; Golding, 2011; McLeroy et al., 2003) and may contribute to the building of social support and social capital (Cohen & Wills, 1985; Linnemann et al., 2017; Tierney et al., 2024; Wiltshire & Stevinson, 2018). They are a good example of the type of universal initiative which has been recommended by the WHO in their global action plan (WHO, 2018).

The term community initiatives has been defined as "non-statutory services or programmes, locally established and manned" (Tierney et al., 2024, p. 3). Examples of community initiatives established in Ireland and the UK include arts and music activities, physical activity groups and community gardens (Cholerton et al., 2020; Lovell et al., 2014; O'Donnell et al., 2022; Tierney et al., 2024). Despite representing a wide range of activities, the initiatives all combine a purposeful activity with time for social connection. From a health promotion perspective they are a good example of empowerment, allowing communities to organise activities which they need at low cost and with easy access for local people. This fits with the strengthening community action pillar of the Ottawa Charter (WHO, 1986).

The evidence for the impact of community initiatives on mental wellbeing includes a wide range of activities and a variety of theoretical frameworks. Some research indicates that community initiatives are supportive of mental wellbeing with repeated, regular, participation being more beneficial than occasional participation (Wheatley & Bickerton, 2017). Given the high suicide rates for men in Ireland (Cox et al., 2022) and recommendations in the national men's health policy (Health Service Executive, 2016) there has been an increasing interest in provision of community initiatives aimed at men in Ireland. One such community initiative which has a growing body of research is Men's Sheds, a popular health promotion intervention which aims to improve social contact for men of any age (D. Kelly et al., 2019). One of the features of Men's Sheds is the opportunity to work on a practical project (often woodwork or craft based) which increases social opportunities via the "closeness by doing" mechanism favoured by men (Migliaccio, 2009). Men's Sheds are sometimes viewed as being for older or unemployed

men (O'Donnell & Richardson, 2020) which suggests the need for an alternative space for men of all ages and socioeconomic backgrounds to meet. A review of older men's (age 55+) social activities found that the key to successful interventions seemed to be a "purposeful voluntary social activity" which built "friendship and social support" over time (Milligan et al., 2016 p. 915).

Other popular community initiatives in Ireland are arts groups (choirs, craft making, learning musical instruments etc) where social connectedness "flourishing friendships, sense of belonging and acceptance" can occur (O'Donnell et al., 2023 p. 4). A recent study of arts groups found that having a common activity encouraged discussion and bonding, which extended outside the setting of the arts group (O'Donnell et al., 2022). Participating in arts groups can improve mental wellbeing in older adults (Davies et al., 2023) with a participation dose of two hours per week being recommended for all adults to support mental wellbeing (Davies et al., 2016).

It is well established in the literature that physical activity can be a useful tool in mental health promotion (Fox, 2000) and it is often a feature of community initiatives. Early studies in this area proposed social support and social interaction as possible factors for how mental wellbeing can be improved by physical activity (Fox, 2000). Mixed gender walking groups have shown some increase in positive mood (Baker et al., 2008) while walking football, a slower version of soccer, allows an opportunity for physical activity and social connection (Cholerton et al., 2020). Those with mental health conditions reported improved social connections and improved mental wellbeing after taking part in walking football (Lamont et al., 2017; Taylor & Pringle, 2022). These studies support the proposal in this thesis that social connections may be one factor which influences improvements to mental wellbeing from participation in community initiatives.

Community initiatives for wellbeing should be available on a continuous basis throughout the year, as suggested following a study of Men on the Move, a physical activity intervention for inactive men in Ireland (L. Kelly et al., 2019). Researchers found that improvements in mental wellbeing were not maintained when the meetings stopped for a summer break (L. Kelly et al., 2019). Many evaluations of community initiatives focus

on short term projects (Taylor et al., 2021) so more research on long term or continuous activities is warranted.

1.6.2 Volunteering at community initiatives and impact on mental wellbeing

Marmot proposed that community participation is one strategy to support health from a social determinants perspective (Marmot et al., 2008). Some community initiatives offer opportunities for participation through volunteering, with a growing body of evidence suggesting that volunteering can support mental wellbeing (Jenkinson et al., 2013; McGarvey et al., 2019; Whelan et al., 2023) and some studies proposing social connections as the causal mechanism. For example, a small study into volunteers with mental health conditions working in a woodland setting found that social support contributed to improvements in mental wellbeing (Christie & Cole, 2017). Similar mechanisms were proposed by Vannier et al (2021), who highlighted the links between volunteering and social capital for mental wellbeing improvements. Recently a UK study proposed that social connectedness and sense of belonging were strongly linked to improvements in mental wellbeing for volunteers at a city-wide cultural event (Whelan et al., 2023). These studies show that volunteering at community initiatives could add value for the participants and may contribute to the mental wellbeing effects. This is something to consider when selecting or designing a community initiative to improve mental wellbeing.

1.6.3 Social prescribing and community initiatives

Community initiatives are open to anyone in the community, without any formal referral. However, some people with physical, mental or social needs may be introduced to the initiative by a healthcare worker. This is called social prescribing or community referral (Cunningham et al., 2023). The concept of social prescribing developed from exercise on prescription schemes (Rowley et al., 2018) and has now been expanded to include signposting to all types of community initiatives targeting physical, mental or social wellbeing (Cunningham et al., 2021; Dayson et al., 2022; Morse et al., 2022; Scarpetti et al., 2024). Social prescribing can be undertaken by General Practitioners (GPs), and other members of the primary care team, or by specialist social prescribing link workers employed by the public health service (Cunningham et al., 2023; Husk et al., 2020).

Social prescribing schemes are an example of reorienting the health services as described in the Ottawa Charter (WHO, 1986) and target the social and community determinants of health (Morse et al., 2022). In Ireland social prescribing initiatives are gradually being introduced, with pilot projects following UK models (Pennisi et al., 2022). Social prescribing is now included as part of the Sláintecare primary care strategy to promote health and wellbeing in the community (Government of Ireland, 2023). Sharing the Vision, the national mental health policy for Ireland, also promotes social prescribing to protect mental wellbeing for people at risk of mental health conditions (Department of Health, 2020). Ireland's Department of Health launched a social prescribing framework in 2021 to guide national practice in this area (Health Service Executive, 2021).

There is a growing body of evidence for the benefits of social prescribing for mental wellbeing (Chatterjee et al., 2018) with social connectedness proposed as one factor for mental wellbeing improvement (Leavell et al., 2019). Increased social support has also been noted as a benefit of social prescribing for mental wellbeing (Lynch & Jones, 2019). However the factors for the impacts of social prescribing are still an area for further exploration (Cunningham et al., 2023).

From the published literature it appears that initiatives that may be suitable for social prescribers to recommend for mental wellbeing support should include:

- A purposeful activity or sport-related activity.
- Continuous availability to maintain wellbeing and allow repeated participation.
- Universal access to promote mental wellbeing to all in the community.
- Optional volunteering to enhance mental wellbeing benefits.

One community initiative which has been recommended by social prescribers in Ireland is parkrun (parkrun Ireland, 2024c). Centred around a 5 km run and walk, with opportunities to volunteer, parkrun can be defined as a community initiative because it has operational elements which expand the experience beyond the physical activity. It embodies the concept of community empowerment as volunteers can start their own local events and includes optional social interaction (Grunseit et al., 2020; parkrun Global, 2023b; Stevinson et al., 2015). The following sections will detail the operation of parkrun

and consider how parkrun participation could be used to support mental wellbeing in the community setting.

1.7 Introducing the community initiative parkrun.

The registered charity parkrun (branded with a small 'p') operates free, weekly, community events in the UK and 22 other countries worldwide (parkrun, 2024c). Participants run or walk a 5 km route in an outdoor setting on Saturday mornings (parkrun Ireland, 2024b).

Volunteers from the local community organise the events with support and equipment provided by the parkrun charity headquarters (parkrun global, 2024). The first parkrun (initially called Bushy Park Time Trial) was organised for 13 runners and 5 volunteers by injured runner Paul Sinton-Hewitt and took place on 2nd October 2004 at Bushy Park near London, UK (parkrun, 2024a). The event gradually expanded to include other locations around the UK and beyond. In Ireland parkrun was launched in 2012 in Malahide, Dublin and by 2024 parkrun was available at over 100 locations across Ireland (parkrun Ireland, 2024b). parkrun is free at the point of access for walkers, runners and volunteers of all abilities (Reece et al., 2019). The parkrun charity also offer a 2 km junior parkrun (for children aged 4-14 years) on Sunday mornings in some locations (parkrun Ireland, 2024b); these are not included in this study as the focus of the thesis is mental wellbeing in adults. The location for parkrun is commonly a publicly accessible open space (parkrun Ireland, 2024b) and sometimes includes a natural feature such as a woodland or river (Rogerson et al., 2016). A small number of parkruns, for example 31 in England and Wales, take place in a custodial setting and can only be accessed by prisoners, staff and invited guests (Campana et al., 2023). In Ireland there is currently only one parkrun in a custodial setting, in Mountjoy prison, Dublin (parkrun Ireland, 2018).

In this thesis the term parkrun participant will refer to an adult or child over 16 years of age who runs, walks or volunteers at parkrun 5 km events on Saturday mornings. Participants are usually, but not always, registered on the parkrun website and have a unique identifying registration number. For the purposes of this thesis, anyone who intentionally takes part in a parkrun event, with or without being registered, is classed as

a participant. Note that some early published research did not include volunteers as parkrun participants, and this will be highlighted where appropriate.

Participants are sometimes introduced to parkrun through beginner jogging and running groups (Relph et al., 2023). In Ireland and the UK running and jogging initiatives such as Fit4Life (Athletics Ireland, 2024), jog**scotland** (Carstairs et al., 2020; Ozakinci et al., 2018) and RunSmart (Johnson et al., 2022) are based on the structured Couch to 5K programme. They support inactive people to gradually build fitness to complete a 5 km jog or run. This type of initiative is different to parkrun because it involves a slow build up to the 5 km distance with support from a trained leader and requires regular attendance to complete the structured programme. In contrast, parkrun allows the participant to start at any time of the year and attend as little or often as they wish. There is no run leader at parkrun, the participants can take part at their own speed. In some locations run leaders will bring their Couch to 5K group to parkrun to introduce them to their local event (Relph et al., 2023) allowing a gradual transition to parkrun for people who were previously inactive.

1.7.1 Overview of parkrun research

As parkrun events became more popular across the UK and, later, globally, there has been a growing interest in research about parkrun. This research can be split broadly into two categories. The first category explores the experience and impact of parkrun participation and includes topics such as barriers to participation, social prescribing of parkrun and diversity of parkrun participants. It also includes research with physical and mental wellbeing outcomes of parkrun participation. The second category involves a smaller body of research which uses the pool of parkrun registrants as subjects for projects which are not specifically related to parkrun participation, such as testing nutritional supplements for athletes (Hurst et al., 2020). The focus of this overview of parkrun research will focus on the first category of research which explores parkrun participation. The range of parkrun research will be discussed, looking at the themes and outcomes of the research and the theoretical perspectives used.

1.7.2 Physical health at parkrun

Initial research about parkrun focussed on the physical health impact of participation (Sharman et al., 2019; Stevinson & Hickson, 2014, 2019). This research viewed parkrun primarily as a physical activity, rather than a community initiative, and did not include volunteers as participants. This perhaps reflected the marketing of parkrun at the time of the research; the focus of the parkrun charity has since shifted to view volunteers as equal participants in parkrun events (parkrun Ireland, 2024b). The results highlighted the physical fitness benefits following parkrun participation as a runner or walker at parkrun in the UK and Australia (Sharman et al., 2019; Stevinson & Hickson, 2014). Physical health outcomes such as decrease in body weight were reported (Stevinson & Hickson, 2019). Even these early studies recognised that parkrun participation can bring benefits beyond physical health and began to explore topics such as mental health outcomes (Stevinson & Hickson, 2014), social benefits (Sharman et al., 2019) and the accessibility of parkrun to people who were not regular runners before commencing parkrun (Stevinson & Hickson, 2014).

1.7.3 Facilitators and barriers to parkrun participation

A substantial body of research has explored the facilitators and barriers to parkrun participation, using public health, health promotion, health psychology and sociology theories and frameworks.

Several studies have described how new parkrun participants are introduced to parkrun by someone in their existing social circle, using social capital as a facilitator for parkrun participation (Wiltshire & Stevinson, 2018) with perceived social benefits a motivator for many parkrun participants (Cleland et al., 2019). Social networks can also be important for maintaining parkrun participation (Sharman et al., 2019). The perceived inclusive atmosphere at parkrun and convenient, free access have been described as facilitators to participation (Stevinson et al., 2015). These operational characteristics of parkrun appear to be welcoming to people who are often excluded from sports, such as women, people with low education levels, those who are overweight and non-runners (Cleland et al., 2019; Gilburn, 2023). A unique feature of parkrun is the option to visit any parkrun event in the world, once registered. Some parkrun tourists take on unofficial challenges to

complete all events in a certain location (such as the London area) or visit parkrun events in different countries (McKendrick et al., 2020). This is an under-researched area, but which may offer interesting insights into continued participation in parkrun events.

1.7.4 Equality, diversity and inclusion at parkrun.

The first parkrun research originated in the UK and Australia but parkrun research has now been published from South Africa (Chivunze et al., 2021; de Vries et al., 2022) Canada and the USA (Robertson-Wilson et al., 2023), Poland (Malchrowicz-Mooko et al., 2020) and Ireland (McNamara et al., 2020). The parkrun operational model is fundamentally the same worldwide, with some minor changes to meet the needs of the local population, such as an early start time in some areas of Australia to avoid running in daytime heat (parkrun Australia, 2024) or a later start time to allow for ferry crossings to events on small islands in Ireland (parkrun Ireland, 2024a).

Data from parkrun registrants in the UK showed that 51.3% of participants were female (Quirk et al., 2021), suggesting equal participation between genders. A number of studies have discussed sex and gender at parkrun. parkrun appears to be attractive to women (Cleland et al., 2019; Fullagar et al., 2019; Gilburn, 2023) and there may be differences in wellbeing benefits between genders with women noting an improvement in wellbeing through better mental health (Grunseit et al., 2017). In a discussion of social identity at parkrun Bowness et al (2020) described women as being more likely to transition from non-runner to parkrunner than men. Many larger studies have not reported a breakdown of results by sex or gender, a possible missed opportunity for insight into any differences in outcomes or barriers to participation.

The study by Fullagar et al (2019) voiced concern about the lack of ethnic diversity at parkrun. This is echoed in data from a large UK survey which noted that 96.4% of parkrun participants who took part in the study were White (Quirk et al., 2021). For comparison, census data from England and Wales for 2021 reported 81.7% of the population as White (Office for National Statistics, 2022). The relative lack of ethnic diversity at parkrun in England is independent of socioeconomic area of deprivation (Smith et al., 2020) although both are populations for further exploration. Despite parkrun events taking place

in a variety of socioeconomic areas, including areas of deprivation, participation rates in deprived areas remain low (Haake et al., 2021; Smith et al., 2021). Recommendations by Fullagar et al (2019) include working with local communities and inter-ethnic forums to reduce barriers to participation and promote inclusion. parkrun have recently addressed this issue by introducing a network of outreach ambassadors (volunteers) to work in disadvantaged communities (Quirk, 2024). The outreach scheme is similar in style to the parkrun PROVE ambassador project to promote inclusion and accessibility for people with long term health conditions (Quirk & Haake, 2019; Quirk & Haake, 2021). The parkrun five year global strategy also emphasises inclusion and aims to focus on removing barriers to participation to increase diversity among parkrun participants (parkrun Global, 2023b).

1.7.5 Mental wellbeing at parkrun

There is a growing body of research which explores the mental wellbeing of parkrun participants. As this subject is the main focus of the thesis a full literature review will be conducted and reported in Chapter Two which will explore the mental wellbeing outcomes of parkrun participation and possible factors which influence these outcomes. Briefly, research has shown that parkrun participation may have a positive impact on mental wellbeing (Grunseit et al., 2017; Stevinson & Hickson, 2014). Improvements to mental wellbeing outcomes can be recorded on the day of parkrun participation (Rogerson et al., 2016) and may also occur in the long term (Stevinson & Hickson, 2019). Although the factors which influence these changes are not fully understood (Grunseit et al., 2020) various factors including social capital (Wiltshire & Stevinson, 2018), natural settings (McNamara et al., 2020; Rogerson et al., 2016) and achievement of personal goals (Mulvenna et al., 2023) have been explored in research. Each of these is a possible area for investigation but for this thesis the influence of social connections at parkrun will be explored in depth because this appears to be a factor which is linked to gender (Grunseit et al., 2017) and may further our understanding of how to support men's mental wellbeing.

1.7.6 Volunteering at parkrun

The public perception of what it means to be a volunteer can be wide ranging. Cnaan, Handy and Wadsworth (Cnaan et al., 1996) identified eleven different commonly used definitions of the term volunteer then proposed a definition of volunteering which includes four dimensions; free will, no remuneration, formal structure and the intention to benefit or help strangers (Cnaan et al., 1996). Volunteering at parkrun fits neatly into this definition.

Every week at parkrun in Ireland over 1,000 adults and children (over 4 years old) are involved in volunteering at 5 km events (parkrun Ireland, 2024d). Volunteer roles range from managing the event as a run director to being involved in timekeeping or marshalling. Some volunteer roles, such as pacer and tail walker, require the participant to complete the parkrun distance at the same time as volunteering (therefore counting as a runner/walker and volunteer on the same day). Other volunteer roles, including pre-event set up or volunteer co-ordinator, can be completed before or after the parkrun event, allowing the volunteer to run or walk the event if they wish (*parkrun* support, 2021). Importantly, parkrun defines participants as volunteers, walkers, joggers or runners (parkrun Ireland, 2024b). This puts volunteering on an equal standing to the other forms of parkrun participation. Some parkrun participants volunteer without ever running or walking the route, but many mix volunteering with running and walking in a flexible manner (Haake et al., 2022; Mitchell, 2023). Gender differences in volunteering have been noted with some women lacking confidence and volunteering for less challenging roles such as marshalling (Stride et al., 2020). Gender differences in motivation to volunteer were noted by Renfree and West (2024) with women being more motivated by egoistic (self-beneficial) reasons than men.

The current literature on volunteering at parkrun is beginning to identify individual physical and wellbeing benefits, even for those who do not complete the 5 km course (Haake et al., 2022). A recent qualitative study of people with mental health conditions found that volunteering at parkrun in addition to running or walking was more beneficial for social inclusion factors such as feeling part of a community and meeting new people (Ashdown-Franks, Sabiston, Stubbs, Atkinson, Quirk, et al., 2023). The impact of

volunteering at parkrun on mental wellbeing is clearly an area for further examination and will be included in this thesis.

1.7.7 Social prescribing of parkrun

In addition to universal access, a healthcare professional can refer people to parkrun. In some countries more formal social prescribing programmes have been introduced for parkrun referral. In the UK a parkrun social prescribing scheme for General Practitioners (GPs), called parkrun practice, sees General Practices being linked with their local parkrun event and pledging to promote the event amongst staff and patients. The scheme has been in operation since 2018 with early evaluations showing positive results from a surgery staff perspective (Fleming et al., 2020). Engagement with the scheme varied between practices and ranged from displaying promotional material about parkrun to attending parkrun events with patients (Fleming et al., 2020). A similar scheme for Irish GPs was launched in 2020 (parkrun Ireland, 2020) with 38 GP practices registered for the programme as of April 2024 (Irish College of General Practitioners, 2024). To date there has been no published evaluation of the parkrun practice scheme in Ireland.

1.7.8 Why is research of parkrun in an Irish population needed?

Ireland is a country which has close physical and historical links with the UK. Despite this, there are several differences which suggest that research results from the UK cannot be extrapolated to include Ireland.

There is a significant difference in population density between the UK and Ireland. In 2022 population density for the UK was 279 people/km^2 (Office for National Statistics, 2024); at the same time in Ireland population density was 73 people/km^2 (Central Statistics Office, 2023b) with just below 30% of people living in rural areas (outside of cities, suburbs or towns). This will have implications when considering social contact and in-person social networks.

From a parkrun perspective, there had been very little parkrun research undertaken in Ireland until the UK and Ireland Health and Wellbeing survey was completed. The results of the Ireland study will be analysed and described in detail in Study One (Chapter Four) but initial analysis of the results (Haake et al., 2019a, 2019b) showed that:

- Ireland has a higher percentage of female parkrun participants (56.6% female in Ireland, 50.5% in UK).
- Ireland has 7.6% of parkrun participants who were inactive at registration (UK 6.9% inactive).
- 85% of parkrun participants who took part in the survey reported improvements to happiness (79% for UK participants).

These descriptive statistics are from initial reports from the Health and Wellbeing survey and have not been compared directly in a rigorous statistical analysis. However, they do indicate possible differences in the two populations which could be explored further. They also suggest that the UK and Ireland parkrun populations are different and should be researched in isolation rather than as a homogenous group. These considerations have been combined to develop the research question and related aims and objective for this thesis.

1.7.9 Aim, research question, and objectives for the thesis

This thesis aims to explore the mental wellbeing of parkrun participants in Ireland and consider possible factors which may influence changes to mental wellbeing following parkrun participation.

The research question for this thesis is, therefore: Does parkrun participation influence mental wellbeing for participants in Ireland and what are the possible factors which may influence changes to mental wellbeing following parkrun participation?

The research in this thesis has the following objectives:

1. Complete a literature review to understand what is already known on the subject of mental wellbeing at parkrun.
2. Use data from a survey of parkrun participants in Ireland to learn about the mental wellbeing of parkrun participants in Ireland and explore how the social experiences of parkrun participants in Ireland differ by gender, age and parkrun participation type.

3. From the results of (1) and (2), focus on a parkrun cohort to understand more about their social experiences and mental wellbeing at parkrun in Ireland using qualitative methodology.
4. Develop personas for a cohort of parkrun participants and consider how the knowledge gained can be applied to develop policy and practice recommendations.

1.8 Conclusion

Using the socio-ecological framework of the Ottawa Charter includes consideration of the community determinants of mental wellbeing. These can be targeted using community initiatives, with parkrun being one example widely available in Ireland. A growing body of research exploring parkrun participation suggests that parkrun may support mental wellbeing with social factors being one possible influence. The literature review in the next chapter will detail the body of research which explores the mental wellbeing of parkrun participants.

Chapter Two. Mental wellbeing and social outcomes from parkrun participation: a literature review.

2.1 Introduction to literature review

2.1.1 Purpose

Chapter One of this thesis introduced the Ottawa Charter as a socio-ecological framework for health promotion. Mental wellbeing and community initiatives were defined. The chapter also provided an overview of published literature about participants of community initiatives including parkrun. It showed that there is an emerging body of research into parkrun participation and mental wellbeing outcomes. This chapter will explore the literature in more detail to describe the mental wellbeing outcomes from parkrun participation, understand factors which influence changes in mental wellbeing and identify gaps in knowledge.

2.1.2 Background

Chapter One described the literature relating to a range of community initiatives which may support mental wellbeing, such as Men's Sheds, walking football and arts activities. The chapter also gave an overview of the body of research published about parkrun participation and related outcomes. In this chapter the parkrun research will be explored in more depth, particularly the studies relating to mental wellbeing and social outcomes.

As discussed in Chapter One, there are typically two categories of research on the parkrun population:

1. Research which explores the experience of being at parkrun events and measures outcomes of parkrun participation, including physical, mental and social outcomes. Examples include changes in body mass index following a year of parkrun participation (Stevinson & Hickson, 2019) and a qualitative study of motivations of parkrun volunteers (Hallett et al., 2020).
2. Research which uses the pool of parkrun registrants as subjects for projects which are not directly related to parkrun participation. Examples include research about

running in pregnancy (Kuhrt et al., 2018) and the effect of beetroot juice on running performance (Hurst et al., 2020).

This literature review will focus on the first category of parkrun research.

In addition to the Saturday morning parkrun 5 km events there are also 2 km junior parkruns on Sundays in the UK, Ireland and Australia (Mathieu et al., 2023; parkrun Global, 2024). The current study will focus on the 5 km events and research mental wellbeing in adults, aged 16 years and over, so any research relating to junior parkrun participation is excluded from this literature review.

A scoping review and systematic review of parkrun research have been previously published (Grunseit et al., 2020; Peterson et al., 2022). The scoping review from Grunseit et al (2020) included 15 published studies with both quantitative and qualitative methodology, published between 2004, when parkrun commenced, and December 2019. One conclusion was a need for more research into the mechanism for the influence of parkrun participation on mental wellbeing (Grunseit et al., 2020). The systematic review by Peterson et al (2022) synthesised data from 11 quantitative studies published before the end of March 2021. They advocated for more rigorous research about parkrun, particularly using objective measures and including participants which fully represent the parkrun population including Black and minority ethnic groups (Peterson et al., 2022). The literature review in this thesis avoids duplication by focussing on mental wellbeing and social outcomes of parkrun participation, and includes research using mixed methods, quantitative and qualitative methodology.

Throughout this programme of doctoral studies, the PhD candidate compiled and maintained a list of published parkrun research on behalf of the parkrun research board, as part of their wider academic activities. This list was updated monthly using automated email alerts from Google Scholar (Boolean search terms “parkrun” OR “park run.”), Scopus (“parkrun”) and Sheffield Hallam University library database (“parkrun” OR “park run.”). The list included peer reviewed research involving parkrun participants in addition to editorials, book chapters and relevant Master’s and PhD theses. Other grey literature including newspaper articles, parkrun marketing reports and blog posts were not included in the list as the goal of the list was to track research outputs. Although this

list had been updated regularly a new literature search was completed for this thesis to ensure there were no missing publications. The process for this new search, along with inclusion and exclusion criteria, is described in the following section.

The aim of this literature review is therefore to describe, critique and synthesise the current body of peer reviewed literature relating to mental wellbeing and social outcomes of parkrun participation as a runner, walker or volunteer. This information will be used to identify gaps in the evidence base which can inform future research.

2.2 Method for literature review

The method for this review followed the style of a traditional literature review using a critical approach (Matheson et al., 2011; Ridley, 2012), applying rigour where appropriate to ensure the full range of published literature was included. Taking a socio-ecological approach, social factors such as social connections and social capital can be considered as a possible factor for how parkrun can influence mental wellbeing. Therefore, studies which reported mental wellbeing outcomes or social outcomes from parkrun participation were included for review. The inclusion and exclusion criteria for the search are shown in Table 1.

Table 1 Inclusion and exclusion criteria for literature review

Inclusion criteria	Exclusion criteria
Peer reviewed publications	Reviews, pre-prints, theses, editorials, grey literature
Studies involving adults aged 16 and older who participate in parkrun 5 km events as runners, walkers or volunteers.	Studies involving children aged under 16 years. Studies involving junior parkrun 2 km events. Studies recruiting parkrun attendees as subjects for studies unrelated to parkrun participation.
Studies which have mental wellbeing outcomes and/or social outcomes from parkrun participation.	Studies which solely report physical health outcomes.
Global research, including publications in all languages and from any date since the first parkrun event on 2nd October 2004.	Studies which focus on elements of the socio-ecological model and Ottawa Charter framework other than social connections and community networks. (For example. the influence of nature or socioeconomic factors on mental wellbeing are excluded from this review).

Before the review was conducted advice on which databases to search was sought from a Sheffield Hallam University academic librarian.

On 04/04/2024 the following online databases were searched using the Boolean search term "parkrun" OR "park run." No language or date limits were set. Database-appropriate limits were set and are included in brackets in the list below:

- Sport Discus (all text, limit to academic journals).
- Scopus (search by title, abstract and keywords)

- ProQuest (search for “peer reviewed only” and “anywhere except full text”)
- Web of Science (search all text).

As an additional check the Sheffield Hallam University library database was also searched for “parkrun” OR “park run” including, but not limited to, articles, journals, magazines, books, and theses. Reference lists of the selected papers were scanned but no additional papers were found. Grey literature, defined as reports not published through normal academic channels (Wood, 1984), was not included in the final selection because the goal was to explore which peer reviewed academic studies were available on this subject. Publications which did not describe the results of parkrun studies, such as editorials, were also excluded for the purposes of this literature review.

After academic database searching on 04/04/2024 a total of 834 records were identified:

- SCOPUS (n=105)
- Sport Discus (n=23)
- ProQuest (n=76)
- Web of Science (n=105)
- Sheffield Hallam Library database (n=367)
- Database collated for parkrun research board record (n=158)

Duplicates (n=676) and publications which did not meet the inclusion criteria (n=12) were removed before full text screening.
Of the remaining 146 records, 123 were removed as there were no mental wellbeing or social outcomes. A further 2 records were removed as they were review papers.
The final literature review contained 21 studies. The results were arranged thematically as part of the evidence synthesis.

2.3 Results of literature review

Following the database searches and screening process 21 publications were selected for this literature review. Each of these 21 publications were read and the key information was extracted, including the research design, country of study, parkrun population included (runner, walker or volunteer). The outcomes described in the studies were also

noted, with some studies reporting mental wellbeing outcomes (n=15), some noting social outcomes (n=18); three of those papers linking mental and social outcomes. A summary of the publications is given in Table 2, presented in order of publication date. All studies involved participants aged 18 years and over unless otherwise stated.

Table 2 Summary of publications included in literature review

Authors (Year)	Research design and sample size	Country	parkrun population	Mental outcome	Social outcome	Mental & social outcomes linked?
Stevinson et al (2014)	Quantitative cross-sectional N=7,308	UK	Runner/walker	✓	✓	X
Stevinson et al (2015)	Qualitative, framework analysis N=48	UK	Runner/walker	X	✓	X
Rogerson et al (2016)	Quantitative pre/post run N=331	UK	Runner/walker	✓	X	X
Grunseit et al (2017)	Quantitative cross-sectional N=865	Australia	Runner/walker	✓	✓	✓
Reeves et al (2017)	Quantitative cross-sectional N=1,053	UK	Runner/walker	✓	X	X
Stevinson et al (2018)	Quantitative, longitudinal N=354	UK	Runner/walker	✓	X	X
Wiltshire et al (2018)	Qualitative, thematic analysis N=19	UK	Runner/walker inactive prior to parkrun	X	✓	X
Wiltshire et al (2018)	Qualitative, thematic analysis N=20	UK	Runner/walker inactive prior to parkrun	X	✓	X
Morris et al (2019)	Qualitative, thematic analysis N=20	UK	Mental health condition. Runner/walker and/or volunteer	✓	✓	X
Cleland et al (2019)	Quantiative cross-sectional N=371	Australia	Runner/walker	X	✓	X
Sharman et al (2019)	Qualitative, thematic analysis N=10	Australia	Runner/walker	X	✓	X
Hindley, D. (2020)	Mixed methods N=231	UK	Runner/walker and/or volunteer	✓	✓	X
McNamara et al (2020)	Qualitative N=99 (n=12 from parkrun site)	Ireland	Runner/walker	✓	✓	✓
Chivunze et al (2021)	Quantitative, cross-sectional N=1,787	South Africa	Runner/walker	✓	✓	X
Bowness et al (2021)	Qualitative, thematic analysis of responses to online survey N=22	UK	Strava users, runner/walker and/or volunteer	X	✓	X
Quirk et al (2021)	Quantitative, cross-sectional N=60,000	UK	Runner/walker aged 16+ years	✓	✓	X
Davis et al (2021)	Quantitative, longitudinal N=143	UK	Runner/walker	✓	✓	✓
Haake et al (2022)	Quantitative, cross-sectional N=60,680	UK	Runner/walker and/or volunteer aged 16+ years	✓	✓	X
Ashdown-Franks et al (2023)	Qualitative. Data from healthcare records N=175	UK	Mental health condition. Runner/walker and/or volunteer	✓	✓	X
Ashdown-Franks et al (2023)	Quantitative, cross sectional N=1,661	UK	Mental health condition. Runner/walker and/or volunteer	✓	✓	X
Campana et al (2023)	Qualitative, thematic analysis N=24	UK	Males in custody. Runner/walker and/or volunteer	✓	✓	X

The summary of literature in Table 2 shows that the majority of parkrun research with mental or social outcomes is from the UK, with only three studies from Australia and one each from Ireland and South Africa. Initial studies included just runners and walkers at parkrun, but research has evolved to include volunteers as equal participants rather than just facilitators. Studies used a mixture of quantitative (11 studies) and qualitative (9 studies) methodology, with one study using mixed methods. The quantitative studies mainly used cross-sectional surveys (8 studies), while the majority of qualitative studies used thematic analysis to describe the data (5 studies). Mental wellbeing outcomes were reported by 15 studies, with social outcomes reported by 18 studies. However, only three studies attempted any comparison of mental and social outcomes to assess any possible relationship. The following sections contain description, critique and thematic synthesis of the 21 studies. Methodological quality was assessed using the guidelines by Greenhalgh for quantitative (Greenhalgh, 2019a) and qualitative (Greenhalgh, 2019b) research.

2.3.1 Mental wellbeing outcomes of parkrun participation.

Early research into parkrun attempted to assess the mental wellbeing impacts of parkrun participation and this is a research theme which has been continued until the present day. Several different scales have been used to quantify mental wellbeing, with a mix of validated and in-house scales used by researchers. The first published research describing mental wellbeing at parkrun was a cross-sectional survey of 7,308 runners and walkers in the UK by Stevinson and Hickson (2014). As part of a study of physical and mental outcomes they asked parkrun registrants to rate their subjective mental wellbeing using a self-designed five point scale going from strongly positive to strongly negative (Stevinson & Hickson, 2014). People who participated in regular parkruns had significantly higher scores than people who attended less regularly, giving a dose-response relationship between parkrun attendance and mental wellbeing (Stevinson & Hickson, 2014). People who described themselves as “occasional” or “non-runners” prior to parkrun registration reported significantly higher scores for mental wellbeing, when compared with people who were already regular runners at the time of registration (Stevinson & Hickson, 2014). The results were not segmented by age or gender and there is no mention of volunteering status. This large-scale study gave an early indication that parkrun participation may

positively influence mental wellbeing in runners and walkers, but the lack of validated scales and cross-sectional design meant further exploration was needed. Hindley later used the same scale to measure mental health outcomes at one parkrun in the UK as part of a mixed-methods study (Hindley, 2020) but a dose-response relationship was not demonstrated in this study, with both low (< 1 parkrun per month) and high (> 3 parkruns per month) participation frequency showing higher mental wellbeing scores than those who attended 1-2 parkruns per month. It is unclear from the publication whether mental wellbeing scores were statistically significantly different when comparing the frequency of parkrun participation (Hindley, 2020) and the author does not comment on this finding.

Rogerson et al (2016) measured various aspects of mental wellbeing of UK runners and walkers before and immediately after parkrun participation. Three widely used, validated, scales were used: the Rosenburg Self Esteem Scale (Rosenburg, 1965), Perceived Stress Scale (Cohen et al., 1983) and the Profile of Mood States (McNair et al., 1992). Self-esteem scores improved immediately after parkrun participation, while stress and mood disturbance decreased (Rogerson et al., 2016). The results were not reported by age or gender. The study authors suggest that the mechanism for this improvement in mental wellbeing is linked to parkrun being based in nature but the authors admit that a control study in an inside setting was not used for comparison (Rogerson et al., 2016). The study did not consider the other operational features of parkrun such as the social element of participation in addition to the physical activity. There was also no measure of the long-term impact of parkrun participation as measures were only taken on the same day as parkrun. If considering parkrun as a health promotion intervention it would be more meaningful to know if mental wellbeing improvements were maintained beyond the day of parkrun participation.

In an online survey of 865 Australian parkrun runners and walkers Grunseit, Richards and Merom (2017) used the validated Personal Wellbeing Index (International Wellbeing Group, 2013) to measure subjective wellbeing and additional survey questions to assess the perceived benefits of parkrun. Only the 55-64 age group had a higher global Personal Wellbeing Index score than the general Australian population, scoring higher on half the individual scores. Male and female parkrunners (all age groups combined) did not have Personal Wellbeing Index scores that differed from the general population (age groups

were not segmented by gender). Females scored higher than males on the perceived mental health benefit of parkrun, with no difference in community connection. When Personal Wellbeing Index scores were compared with mental wellbeing and community connection researchers found that females reported improved personal wellbeing by having improved mental health whereas males tended to experience wellbeing related to community connectedness (Grunseit et al., 2017). This suggests that women and men may have different factors which influence any changes in wellbeing experienced by parkrun participation as a runner or walker.

A study in the UK by Reeves et al (2017) measured the wellbeing of 1,053 parkrun participants (runners/walkers) using the World Health Organization's WHO-5 wellbeing index (Bech et al., 2003) and compared results against a UK sample (Reeves et al., 2013). The parkrun participants had higher scores on the WHO-5 index than the general population, with 86% of parkrun achieving scores for good psychological wellbeing, compared to 63% of the general population (Reeves et al., 2013). The comparator scores for the UK population were from a relatively small sample (r=1,078) and providing a set of validated results for the WHO-5 scale was not the focus of that study (Reeves et al., 2013). However, it does give an indication that parkrun participants may have higher wellbeing scores than the general population in the UK.

Stevinson and Hickson (2019) completed a 12 month longitudinal study of newly registered UK parkrun participants (runners and walkers). The Short Depression-Happiness Scale (Joseph et al., 2004) was used to measure happiness, and the Perceived Stress Scale (Cohen et al., 1983) to measure stress. The study noted that the survey subjects showed significant changes in both scores during their first year as parkrun participants (Stevinson & Hickson, 2019), suggesting an increase in happiness, decrease in depression and decrease in stress. The changes were noted at six months after registering at parkrun and maintained at the 12 month point. Results were not reported by age group or gender (Stevinson & Hickson, 2019). This study adds useful information to the body of research into parkrun as the majority of other studies on parkrun described aspects of mental wellbeing as a cross-sectional measurement, rather than longitudinal, and this study suggests a prolonged impact on mental wellbeing using validated scales.

A qualitative study by McNamara et al (2020) uses the discipline of geography to describe the impact of blue space on mental wellbeing for users of a parkrun route which takes place on a canal towpath in Ireland. The study compares walking or running on the parkrun route with use of an indoor swimming pool, canal and beach. During semi-structured interviews and diaries the 12 parkrun-route users described the mental health benefits of being outside in fresh air and having time to themselves to think and relax, describing "getting away from it all," "relaxed" and "quiet" (McNamara et al., 2020 p. 13). The participants also report some social outcomes such as "socialisation" and "conversation space." A critique of this paper is that it is unclear how many of the interviewees participate in the Saturday morning parkrun events, and how many use the parkrun route at other times. The study was designed to compare indoor and outdoor activities, rather than focus in depth on the experiences of parkrun route users. However, it does give an indication that there could be a link between mental wellbeing and social outcomes among parkrun site users in Ireland, an area which will be explored further in this thesis.

A large online survey of parkrun participants in the UK was undertaken in 2018 (Quirk et al., 2021). The results, from 60,000 runners/walkers (some of whom also volunteer), suggest that 90.7% reported subjective improvements to their sense of personal achievement from running/walking at parkrun, 69.7% reported improvements to how they felt part of their community and 69.3% stated improvements to their mental health (Quirk et al., 2021). The greatest benefits to mental health were reported by previously inactive respondents from areas of deprivation (Quirk et al., 2021). These results have the benefit of coming from a large sample across the UK, but the cross-sectional nature of the study with no baseline or longitudinal results means further exploration is required. This study survey (Haake et al., 2019b) did collect data about mental wellbeing using the Short Warwick Edinburgh Mental Wellbeing Scale (Stewart-Brown et al., 2009), but the results had not been published at the commencement of the PhD candidature.

The peer reviewed research on the mental wellbeing outcomes of parkrun is very UK-focussed, with mainly cross-sectional studies. The only study of parkrun in Ireland was small and was not designed to assess the impact of parkrun event participation (McNamara et al., 2020). None of the studies were designed purely to assess mental

wellbeing outcomes, the questions were included as a suite of physical and mental health measures. The majority of the studies used quantitative measures with only one study using mixed methods at a single parkrun site (Hindley, 2020) and one small qualitative study from a different single site (McNamara et al., 2020). Only one study took baseline (pre-parkrun) measurements of mental wellbeing and the results of this longitudinal study (Stevinson & Hickson, 2019) did indicate improvements to mental wellbeing which are maintained through one year of parkrun participation as a runner/walker. None of the studies fully explored the factors which influence changes to mental wellbeing.

2.3.2 Participation in parkrun by people with mental health conditions

In addition to those representing the whole population of parkrun participants there have been a small number of studies of parkrun participation by people with mental health conditions. Maintenance of good mental wellbeing in this sub-population can prevent relapse and improve quality of life (Barry et al., 2019). The first research with this group was from Morris and Scott (2019) who completed a qualitative study with male and female parkrun participants with mental health conditions (n=20), some of whom volunteer at parkrun in addition to running/walking. The results of thematic analysis gave three themes which all had elements of determinants of mental wellbeing. The theme *Sense of achievement* described flexible and individual goals and a feeling of accomplishment. The second theme *It's for everyone* notes a warm welcome and inclusive environment. This theme also included familiarity, highlighting the predictable and repetitive nature of events. Their final theme *Connecting with others* described a welcoming atmosphere, depicting parkrun as being like a family, with an opportunity to make friends and reduce isolation. Self-esteem was improved by the community feeling. The results also noted a sense of identity and purpose, which reduced stigma around the mental health condition (Morris & Scott, 2019). A limitation of this study is that study participants self-reported that they had "experienced mental health difficulties, for which they had received support" through "private, voluntary or statutory services" (Morris & Scott, 2019, pp. 112-113). The nature of the mental health condition was not recorded and no indication of the severity of the condition was given. Therefore, the results may not be transferrable to patients with all mental health conditions, including severe mental disorders, as it is unknown how many participants in this study were formally diagnosed.

A more recent study involved people with formal mental health condition diagnoses (Ashdown-Franks, Sabiston, Stubbs, Atkinson, & Stewart, 2023). Their research collected data from mental health trust service-user records written by healthcare professionals. They completed a thematic analysis of any mentions of parkrun in the records. The 175 service users in the study were formally diagnosed with a range of severe (for example schizophrenia) and common (depression or anxiety) mental health conditions (Ashdown-Franks, Sabiston, Stubbs, Atkinson, & Stewart, 2023) . The results showed that the service users benefitted from parkrun participation through the social connections made at the event. Several service-users described how parkrun participation improved their mental state directly, or as part of their recovery process involving a source of achievement or pride (Ashdown-Franks, Sabiston, Stubbs, Atkinson, & Stewart, 2023) Some service users attended parkrun as part of their treatment for anxiety disorders and eating disorders (with some modifications such as not recording finish times). The research found that parkrun might not be suitable or safe for every person with a mental health condition, depending on their mental state. For some the noise of other runners and large crowds triggered symptoms. This study also noted that some service users felt socially excluded at parkrun due to stigma around mental health conditions with some inpatients feeling awkward during social interactions. This is contrary to the findings of Morris and Scott (2019) who state that parkrun is welcoming and accessible to people with mental health conditions. The participants in the Morris and Scott (2019) study may have been less acutely unwell, or had less severe mental health conditions than the study by Ashdown Franks et al (2023) although this cannot be confirmed from the published reports.

A second study by Ashdown-Franks et al (2023) considered the impact of volunteering at parkrun for people with mental health conditions. A secondary data analysis of the parkrun Health and Wellbeing survey data from the UK was completed, extracting data for respondents who described themselves as having a mental health condition which limited day-to-day activities and which had lasted, or was expected to last, at least 12 months (Haake et al., 2019b). Volunteering at parkrun in addition to running or walking was more beneficial for self-reported mental health impact and social inclusion factors such as feeling part of a community and meeting new people (Ashdown-Franks, Sabiston,

Stubbs, Atkinson, Quirk, et al., 2023). As with the original study using the complete data set by Quirk et al (Quirk et al., 2021) the lack of validated scale along with a cross-sectional study invite further exploration to confirm the impact of social interaction at parkrun in this population.

Another sub-population of parkrun participants is those who take part in parkrun in custodial settings. The results are included here due to the high percentage of prisoners who experience mental health conditions, often with a history of substance misuse (Tyler et al., 2019). The UK study by Campana et al (2023) interviewed 24 men who participated in parkrun within the custodial setting. One of the themes identified in the thematic analysis was that parkrun participation allowed prisoners to connect with others. This included other prisoners, staff members and the wider community (including families) (Campana et al., 2023). The men noted that they interacted with people through parkrun participation that they would not normally speak to, and that camaraderie developed over time. In addition to the social benefits, they also described improvements to mental wellbeing in the short term (providing a distraction from worries or stress) and the long term (developing self-worth related to achievements at parkrun). Participation in parkrun also had an impact on substance misuse, with one participant describing a move away from substance use and towards a healthier lifestyle. Another participant described how parkrun helped to manage his mental health condition involving auditory hallucinations (Campana et al., 2023). The research gives some detail around the social experiences of the parkrun participants but as the study was with adult male prisoners from three prisons in England the results are not generalisable beyond that context.

2.3.3 Social outcomes of parkrun participation

So far, the literature reviewed here has focussed mainly on mental wellbeing outcomes. As discussed in Chapter One, using a socio-ecological approach means that social factors, such as social connections and social capital, could be considered as a possible explanation for how parkrun can influence mental wellbeing. A number of peer reviewed papers have explored social aspects of parkrun participation. The first was by Stevinson et al (2015). In semi-structured interviews with 48 UK parkrun participants (runners/walkers) the topic of the physical and social environment at parkrun was

discussed. Interview data were analysed using the rigorous Framework approach (Ritchie & Lewis, 2003) and resulted in themes of *Freedom* and *Reciprocity* (Stevinson et al., 2015). The focus of the study was facilitating initial and ongoing parkrun participation. The *gaining* subtheme (under *Reciprocity* theme) included reference to outcomes of "enjoying social interaction and friendship opportunities" (Stevinson et al., 2015 p. 172). The authors reported that parkrun friendships could be casual acquaintances or lasting friendships and noted that social support was discussed by all their interviewees (Stevinson et al., 2015). The study included men and women in a range of age categories from 18 to over 65 years and included participants from across the UK, including Northern Ireland (Stevinson et al., 2015). Results were reported for the full set of subjects without subdivision. This is the first time that a variety of social relationships were noted at parkrun events, but this topic was not explored in more detail and no links to mental wellbeing were made at this stage.

There is a growing body of research exploring parkrun participation and social capital, with two main concepts. Firstly, that social capital can be a supporting factor for parkrun attendance. The second, less researched, theory considers whether parkrun participation can build social capital. A study of 20 UK parkrunners who were inactive before commencing parkrun (Wiltshire & Stevinson, 2018) explores how social capital can be used to initiate and maintain parkrun participation. Many of the participants came to parkrun with, or via recommendation from, someone in their social circle. They also described opportunities to build new connections at parkrun and noted the exchange of knowledge and support of new parkrunners. They also describe the value of "loose ties with relative strangers" and that "social support can be a resource accessed through social capital in a reciprocal community context" (Wiltshire & Stevinson, 2018, p. 55). Digital networks are mentioned as a form of knowledge exchange in addition to in-person social connections (Wiltshire & Stevinson, 2018). In a second publication the same pool of participants discussed how parkrun participation is a collective health practice (Wiltshire et al., 2018). The results included descriptions of social interactions at parkrun within the results. One interviewee described being able to participate in parkrun with family and friends, including time for social interaction with other parkrunners during coffee after the event (Wiltshire et al., 2018). Social support was described by one participant in the

context of helping a subjectively unfit runner to complete the event (Wiltshire et al., 2018). The participants in these two studies were from a range of socio-economic backgrounds including the most deprived quartile and were all inactive before participating in parkrun. These are both strengths of the two studies as both groups have been highlighted as health promotion priorities (O'Donnell & Richardson, 2020; WHO, 2018).

The first study outside the UK to explore the social outcomes of parkrun was by Sharman, Nash and Cleland (2019). Semi-structured interviews with 10 parkrun participants (runners/walkers) from Australia were analysed using thematic analysis. The themes included *social connections/networks* used for both initiation and ongoing participation in parkrun events. *Social support -giving and receiving* during parkrun was reported as a strong theme. The participants also described the process of building social capital during events. Social networks rather than a desire to improve physical activity levels were important for initiating and maintaining parkrun participation. The authors also note that parkrun is a supportive environment for shy people to build social capital as many other participants are friendly (Sharman et al., 2019). Although this study took place on the island of Tasmania there are some themes relating to initiation of parkrun participation through social connection which support UK research by Wiltshire and Stevinson (2018) suggesting some generalisability of the results. Neither of these studies collected data from volunteers at parkrun that do not run or walk at the events.

A cross-sectional quantitative study in Australia (N=371) was the first to use a socio-ecological model in parkrun research (Cleland et al., 2019). Self-designed survey questions were used to assess the level of social support from family and friends at parkrun and compare these to levels of parkrun participation (Cleland et al., 2019). Both types of social support were linked to higher levels of participation, in addition to a separate measure of perceived social benefits. These results suggest that social support is important for continued parkrun participation, but the results do not differentiate whether parkrun can help people to form social bonds with friends, or whether these friendships pre-date parkrun participation.

Bowness et al (2021) conducted a thematic analysis of open-ended question responses to an online survey of Strava users in the UK (Bowness et al., 2021). Responses from 22 runners/walkers, some of whom who also volunteer at parkrun, were analysed. The resulting themes described parkrun as a "sacred space" for supporting communities and strengthening social bonds within and beyond families (Bowness et al., 2021, p. 60). They describe the community feeling as a "buzz" and considered how the buzz may reinforce bonding between some participants but may lead to a feeling of exclusion for others (Bowness et al., 2021). The survey population for this study was taken from parkrun participants who use the running app Strava. This may not allow for a sample fully representing the parkrun population as Strava users are regular runners or walkers who have a running watch or app on a smartphone to collect real-time data about the run (Franken et al., 2023). This could exclude newer runners/walkers or those who do not have access to the required equipment. Indeed the authors acknowledge that their sample over-represented men and the 30-50 age group (of all genders) (Bowness et al., 2021).

An online and in-person survey of 1,787 parkrun participants in South Africa from Chivunze et al (2021) used the same survey questions as the Australian study by Cleland et al (2019). The results from South Africa found that over half (52.9%) the runners/walkers reported social connectivity as a reason for continuing parkrun participation (Chivunze et al., 2021). The same study reported stress reduction as another factor for continued participation (with 55.2% of participants selecting this option) but there was no comparison of the two results to explore correlation and no segmentation by age or gender (Chivunze et al., 2021)

In Hindley's (2020) mixed method's study thematic analysis of interviews with 19 parkrun participants from one UK parkrun site resulted in a theme of *casual sociability*. The social connections made at parkrun were described as often brief, yet meaningful, and interactions between friends and strangers contributed to a friendly atmosphere (Hindley, 2020). Other themes from this study include *accessibility and inclusion, sense of belonging and community, exercising and competing with others.* Hindley describes parkrun events as a "temporary public space that is conducive for incidental and casual social interactions. " (Hindley, 2020, p. 94). Hindley also notes the feeling of belonging and community, like being part of a family (Hindley, 2020).

Davis et al (2021) propose that perceived social support and social reward (positive reinforcement from others) can enhance enjoyment of group physical activity. Their UK study of 143 runners/walkers at parkrun used a self-designed survey which asked (among other questions) about the feeling of community and being supported at parkrun, along with enjoyment of the event (Davis et al., 2021). The majority of participants in their study arrived with someone or met up with someone before the parkrun but 67.71% ran on their own (Davis et al., 2021). Perceived community inclusion and community support (combined), pre-run social contact and coming with, or meeting, friends and family all had a positive impact on subjective enjoyment of parkrun. Enjoyment of leisure activities (not parkrun specifically) has been positively associated with mental wellbeing (Pressman et al., 2009) so there is a possible link between social contact and mental wellbeing in this study, via enjoyment of the activity. However, the lack of validated scale and lack of direct link between social support at parkrun and mental wellbeing invites further study in this area. This study took place in one geographical area of the UK (Oxford) so may not be fully representative of the wider parkrun population.

2.3.4 Negative mental wellbeing and social impacts of parkrun participation

The social aspect of parkrun participation did not always bring positive mental wellbeing. One study described cliques among regular parkrunners which can lead to a slower participants feeling of excluded (Bowness et al., 2021). Wiltshire and Stevinson (Wiltshire & Stevinson, 2018) also explored the concept of cliques at parkrun but there was little evidence for this in practice (Wiltshire & Stevinson, 2018). Their interviewees noted that there is the potential for cliques to form at parkrun events but that regular attendees made an effort to look out for new participants and welcome them to the event (Wiltshire & Stevinson, 2018). Given the contrasting reports this is a subject which could be explored further to examine the influence of cliques at parkrun on mental wellbeing and social connections.

2.3.5 Mental wellbeing and social outcomes of volunteering at parkrun

In the first years of parkrun the research focus was on the running and walking element of parkrun participation. More recently, research has explored the volunteering aspects of parkrun, including an exploration of the influence of volunteering at parkrun on mental

wellbeing. Haake et al (2022) extracted data from the parkrun Health and Wellbeing survey dataset for UK parkrun participants who volunteer at parkrun. The most common impacts of volunteering at parkrun, with or without also running/walking, were *feeling part of a community* (84.3% said this was better or much better), improving the *number of new people met* (79.25) and a *sense of personal achievement* (72.5%). The same group noted the impact on mental health to be better or much better for 51.1% of volunteers. Overall, wellbeing benefits and opportunities for social connections were enhanced when participants volunteered at parkrun alongside running or walking (Haake et al., 2022). As with Quirk et al (2021) this study did not measure baseline results or use a validated scale. A more recent quantitative study of people in the UK with mental health conditions found that volunteering at parkrun in addition to running or walking was more beneficial for social inclusion factors such as feeling part of a community and meeting new people (Ashdown-Franks, Sabiston, Stubbs, Atkinson, Quirk, et al., 2023).

2.3.6 Link between mental wellbeing and social outcomes following parkrun participation

In this review the literature describing the mental and social outcomes of parkrun have been discussed separately. Taking a socio-ecological approach, as in the Ottawa Charter (WHO, 1986), suggests that social outcomes may influence mental wellbeing. Only three of the peer reviewed studies of parkrun participants have explicitly linked mental wellbeing and social outcomes (Davis et al., 2021; Grunseit et al., 2017; McNamara et al., 2020). These studies have been described in detail in sections 2.33 and 2.35 so will now be summarised and the methodological quality of the studies discussed following guidance from Greenhalgh (2019a, 2019b). The study by Grunseit et al (2017) linked wellbeing of male parkrunners with community connectedness suggesting different mechanisms for mental health outcomes across genders. In this study social connections were not measured with a validated scale or explored further with an interview study (Grunseit et al., 2017). The survey for this study was distributed online by a parkrun sponsor to parkrun participants who received a weekly email newsletter. It is not clear if parkrun participants had to opt in to this newsletter; if they did it could indicate that the sample was from highly engaged parkrun participants rather than the full parkrun population. The scale used to measure wellbeing was a validated, widely used scale.

However, the perceived benefits, including community connection and mental health, were measured using an in-house Likert scale which was not validated. Use of a validated scale for both comparators would have given a more robust study design. Weightings were used to balance the survey data before comparing with reference values for the general population, which gives confidence in the resulting comparisons. The second study to compare mental wellbeing with social connection is by Davis et al (2021). In their study of six parkrun sites in the Oxford area, UK, Davis et al (2021) linked mental wellbeing outcomes with enjoyment of parkrun. All their questions were unique to this study, with no validated scales used. Another critique of this study is that 734 surveys were completed after parkrun events by 143 participants, with 34 participants completing 50% of all surveys (Davis et al., 2021). The small number of participants for a quantitative study along with the small geographical area, reduces the generalisability of the results. The third study to link mental wellbeing with social connection was the geography research in Ireland by McNamara (2020). The results included themes relating to social and mental wellbeing outcomes, but this study did not clarify how many of the 12 study participants were using the parkrun route outside of the usual parkrun event. Volunteers at parkrun were not included in this study. The method of recruitment of participants and the interview guide are not described in the publication. Also, there is no mention of the type of data analysis used to develop themes from the interview data. The results from the parkrun group are reported along with people who swim in a swimming pool or visit a canal or beach, but the methods for each group are different meaning no direct comparison is appropriate. The focus of the mixed methods study was the influence of the blue space environment on wellbeing, although the social aspect of parkrun events was mentioned in one qualitative study quote. Overall this study by McNamara et al (2020) has a very unclear methodology and results should be interpreted with caution.

The next section will summarise and discuss the results of the literature review and consider the wider implications of the synthesised information. Finally, a list of gaps in the literature will be detailed with suggestions for future studies.

2.4 Discussion of the literature review

2.4.1 Summary of the literature on mental wellbeing and social outcomes of parkrun participation

The published, peer reviewed, literature describing research with parkrun participants contained a body of evidence about mental wellbeing at parkrun. Participants at parkrun appear to have high mental wellbeing, with a possible dose-response relationship and prolonged impact, but causation or the direction of the relationship have not been proved in the literature. There may be gender differences in the mechanism for the impact of parkrun participation and mental wellbeing. People who were previously inactive from areas of deprivation, prisoners and those with mental health conditions note benefits to mental wellbeing from parkrun. Literature exploring social factors at parkrun showed that participation at parkrun can be facilitated and maintained through social connections. Reports included descriptions of social capital and social support experienced by participants. Volunteering appears to enhance the social experience at parkrun, but the majority of research did not include volunteers. Only three studies linked social factors at parkrun to mental wellbeing, with one suggesting a possible gender difference. The majority of studies were from the UK and Australia, with only one study from Ireland which had several limitations. The studies were from a range of academic disciplines including public health, sociology, geography and health psychology. None of the parkrun studies used the Ottawa Charter for health promotion as a framework for research.

The broader implications of this body of research are that this evidence from parkrun aligns with a community-centred approach for health promotion which includes social capital and social support (Saadati et al., 2022). This approach to mental health promotion, called strengthening community action (WHO, 1986), can be particularly beneficial for mental wellbeing in marginalised groups such as young people and migrants (Laverack & Mohammadi, 2011). Other community initiatives which use the parkrun operating model may therefore be beneficial for mental wellbeing through the same factors.

2.4.2 Limitations of the existing literature

The body of peer reviewed research about mental wellbeing and social outcomes at parkrun had several limitations. The majority of studies were UK focussed, despite parkrun events being held in 22 countries globally (parkrun, 2024c). Very few of the studies reported the results segmented by gender, age category or parkrun participation type (runner/walker/volunteer) despite evidence in the wider literature that mental wellbeing and social outcomes can vary between these groups. Some of the quantitative studies uses validated scales, but very little comparison was made with the population of the country where the research was based. Cross-sectional studies gave a snapshot of parkrun participant's social outcomes and mental wellbeing but without randomised trials, longitudinal studies or qualitative studies the results cannot be used to fully evaluate the wellbeing outcomes of parkrun (Wills, 2023). The systematic review by Peterson et al (2022) proposes the use of a randomised controlled trial to overcome this issue, but this may be challenging to undertake in practice as a real-world setting has many confounding variables. The use of qualitative methodology in some publications allowed for an in-depth understanding of the experiences of parkrun participants and set the scene for future research in this area. The three studies which combined mental wellbeing and social outcomes were of varying quality, with narrow geographical spread, lack of validated scales and, in the case of McNamara (2020), lack of detail on methodology.

One overarching consideration which may explain some of these limitations is the way that access to parkrun research is strictly controlled. Access to parkrun participants for research purposes must be approved by the chair of the parkrun research board, based at Sheffield Hallam University, with close links to the parkrun global charity (parkrun research board, 2023). Since 2023 the research board has paused activity which approves new research projects while the parkrun charity plan the next phase of development (parkrun research board, 2023). While it may be necessary to control access to parkrun participant data and reduce the risk of survey fatigue, having this gatekeeper could potentially slow down the progression of research into parkrun participation. Also, having the research board closely linked with the parkrun charity means that only research projects which clearly align with parkrun's strategic goals are approved, an admission which is clearly stated on the research board webpage (Advanced Wellbeing Research

Centre, 2020). This restriction on research activity could impact the variety and scope of research into parkrun participation. Finally, the official language of the parkrun research board is English, another potential reason for the small number of research papers from outside the English-speaking community.

The limitations of the studies included in this review mean there are several research gaps which could be explored in future research. These will be described in the following section.

2.4.3 Evidence gaps which have been identified from this literature review.

The literature review completed in this chapter highlighted several gaps in the evidence base on mental wellbeing and social outcomes of parkrun participation:

- There is a need for studies which use validated scales to measure the mental wellbeing of parkrun participants, including either baseline measurements or accurate comparisons with reference data from the general population.
- Research should explore the potential bi-directional relationship between parkrun participation and mental wellbeing to determine how each influences the other.
- The connection between social outcomes and mental wellbeing as a result of parkrun participation remains underexplored.
- There is a gap in understanding the long-term effects of parkrun participation on both mental and social outcomes.
- Further research is needed to consider gender differences in mental wellbeing and social outcomes associated with parkrun participation.
- Current research is largely focused on the UK, Australia, and South Africa, highlighting a need to expand studies to include a broader range of parkrun host countries.
- More research is required to understand the formation of cliques at parkrun events and how these may impact the mental wellbeing of participants who are excluded from the cliques.

Several of these evidence gaps will be used as the basis for the research described in the following chapters.

2.5 Conclusion to the literature review

This literature review has taken a structured approach to retrieve peer reviewed literature exploring the mental wellbeing and social outcomes of parkrun. The review included 21 peer-reviewed studies from the UK, Australia, South Africa and Ireland and described the features, results and methodological considerations for each study. Research came from a range of disciplines including public health, health promotion, sociology and geography. There was a mix of quantitative and qualitative research, with some large-scale studies. Not all studies were fully representative of the parkrun population and only two used longitudinal approaches to determine the long-term impact of parkrun participation on mental wellbeing and social outcomes. Gaps in the literature were described and will be used to design and implement novel research which will be reported in the following chapters.

Chapter Three. PhD methodology

3.1 Introduction to the chapter

This chapter will describe the methodology used to answer the research question for this thesis. It will consider the research paradigm chosen and outline the method deployed which fits this paradigm. A consideration of the role of public involvement in the research described in this thesis is included.

3.2 Research paradigm for this thesis

When undertaking scientific inquiry, it is important to consider the paradigm that will be used as a theoretical framework by the researcher (Allemang et al., 2022; Kaushik & Walsh, 2019). The various paradigms used are underpinned by a philosophical stance which inform the ontology, epistemology and axiology for the research (Plano Clark & Ivankova, 2016). Ontology considers how we view the social world (Clark et al., 2021), epistemology considers how we should study the world (Clark et al., 2021) and axiology is the role of values in research (Plano Clark & Ivankova, 2016). The research paradigm will therefore inform the methodology for a study (Creswell, 2018; Tubey et al., 2015). When selecting a paradigm for the research detailed in this thesis three paradigms commonly used in health and social research were considered: post-positivism, constructivism and pragmatism.

Post-positivism has evolved from positivism (Braun & Clarke, 2022) which assumes a single reality where there is a truth to be found outside of the researcher (Plano Clark & Ivankova, 2016). Post-positivism is a refinement of this paradigm, acknowledging that scientific observations are not completely pure and the researcher will view results from a certain position despite aiming to be objective (Braun & Clarke, 2022). In post-positivism the values of the researcher should be controlled and not part of the research (Plano Clark & Ivankova, 2016). The methods used in post-positivism are often quantitative and aim to be reproduceable and generalisable (Kaushik & Walsh, 2019; Yardley & Bishop, 2017). This paradigm is often used in the natural sciences (Clark et al., 2021) and is the basis for the scientific method which commonly uses measurable data

to test a hypothesis (Creswell & Creswell, 2023). One disadvantage of using this paradigm in health promotion research is that the results of studies give us general results about large populations but lack detail of the individual experiences (Creswell & Creswell, 2023).

Constructivism recognises that truth is subjective and knowledge can be created from the bottom up (Kaushik & Walsh, 2019). The values of the researcher are an integral part of the research and reflexivity can be used to highlight this (Plano Clark & Ivankova, 2016). Methods following constructivism are usually qualitative and results are related to the researcher perspective and are not generalisable (Kaushik & Walsh, 2019; Yardley & Bishop, 2017). Post-positivism and constructivism can be illustrated as two ends of a spectrum since they are opposite in ontology, epistemology and axiology, with different methods used by researchers (Giacobbi et al., 2005).

The paradigm of pragmatism was chosen for this thesis. This paradigm falls in the middle of the spectrum between post-positivism and constructivism (Yardley & Bishop, 2017). Pragmatist philosophy is based on the ideas of John Dewey who described how human thoughts are linked to actions, and that learning from those actions will inform future actions (Allemang et al., 2022; Kaushik & Walsh, 2019). The ontology of pragmatism acknowledges different viewpoints on reality (Plano Clark & Ivankova, 2016). The epistemology describes knowledge as being based on experience, where each person's knowledge is unique but sometimes shared due to similar social experiences (Kaushik & Walsh, 2019). In pragmatism the values of a researcher are relevant when stating research questions and interpreting results to draw conclusions (Plano Clark & Ivankova, 2016). Additionally, pragmatism encourages a problem solving mindset, using whichever research method suits the various elements of the study (Allemang et al., 2022; Morgan, 2014). This means that the research paradigm of pragmatism is useful for solving real world problems (Kaushik & Walsh, 2019). As pragmatists are interested in social justice (Kaushik & Walsh, 2019), a concept which underpins health promotion practice and the social determinants of health, (Marmot et al., 2008) pragmatism has been used as a paradigm in public health research (Allemang et al., 2022; Barnish & Turner, 2017), health psychology studies (Cornish & Gillespie, 2009) and recently in health promotion research exploring parkrun participation for

people with mental health conditions (Ashdown-Franks, Sabiston, Stubbs, Atkinson, & Stewart, 2023). These factors combine to make the paradigm of pragmatism a suitable choice for the health promotion research described in this thesis.

3.3 Mixed methods research design

As pragmatism is not strongly linked to a particular methodology it is often used to inform research involving mixed methods (Shan, 2022), as used in this thesis. Mixed methods research uses a combination of quantitative and qualitative approaches to answer a research question (Creswell, 2018; Plano Clark & Ivankova, 2016; Yardley & Bishop, 2017), integrating the results in a logical manner (Creswell, 2018). Mixed methods can have two designs: (1) fixed design, where the combination of approaches are pre-determined before the commencement of the first study; and (2) emergent design where a second study is added when the original study does not fully answer the research question (Creswell, 2018). In practice many studies contain elements of both of these designs, where the fixed element may include an intention to conduct a second phase but the details of that phase emerge based on the results of the first study (Creswell, 2018). Within these overarching designs Creswell (2018) outlines three core designs which are illustrated in Figure 2. Convergent design is where the researcher studies the same population using two different approaches in parallel, then combines the results. Explanatory sequential design has two phases with quantitative data collected first followed by qualitative data which is used to expand or explain the results from the first phase. Exploratory sequential also has two phases but this time the qualitative data is collected first, followed by designing quantitative data collection informed by the first phase (Creswell, 2018; Plano Clark & Ivankova, 2016). The balance of quantitative and qualitative methods can be equal or can have an emphasis on one of the approaches (Clark et al., 2021; Creswell, 2018)

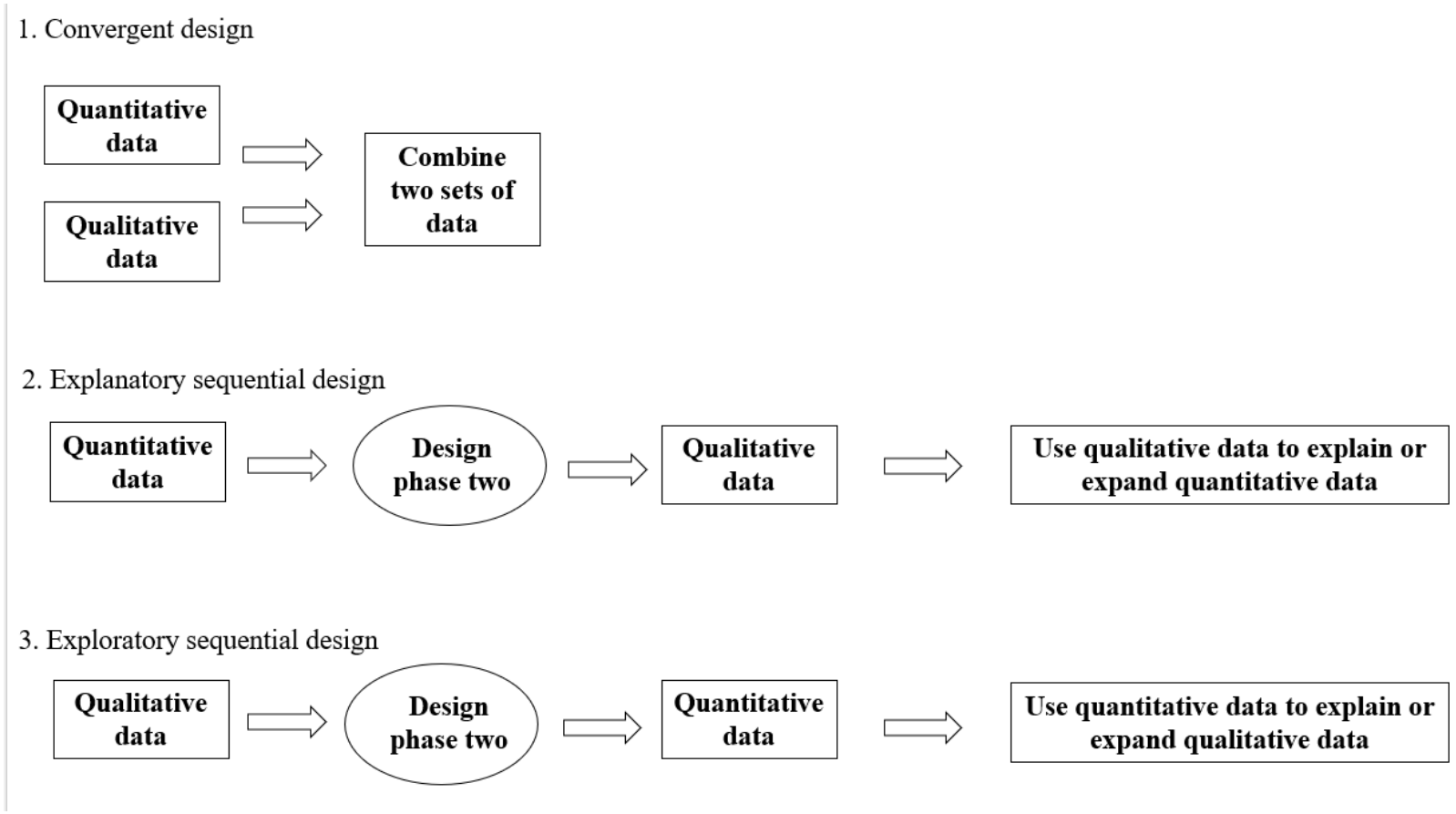


Figure 2 Core designs for mixed methods research (based on Creswell, 2018; Plano Clark & Ivankova, 2016)

3.4 Mixed methods design used in this thesis

The design for the mixed methods research described in this thesis involved using a pragmatic approach to explore mental wellbeing among parkrun participants in Ireland. Within the pragmatic paradigm the aim was to choose a design which best answered the research questions, rather than being tied to one particular method. The research in this thesis used an emergent design, as the research questions were not fully answered using only the quantitative data available from the parkrun Health and Wellbeing survey. The first study used quantitative methods (Study One, Chapter Four). The results of that study, along with an understanding of extant literature, were then used to form an explanatory sequential design. One population group were examined in detail for the second study to understand more about the factors which influence any changes to mental wellbeing using qualitative methods (Study Two, Chapter Five). Continuing to follow pragmatism by using the most appropriate method to answer the research question the outcomes from both studies were given equal weighting when interpreting results. The final research design used in this thesis is shown in Figure 3.

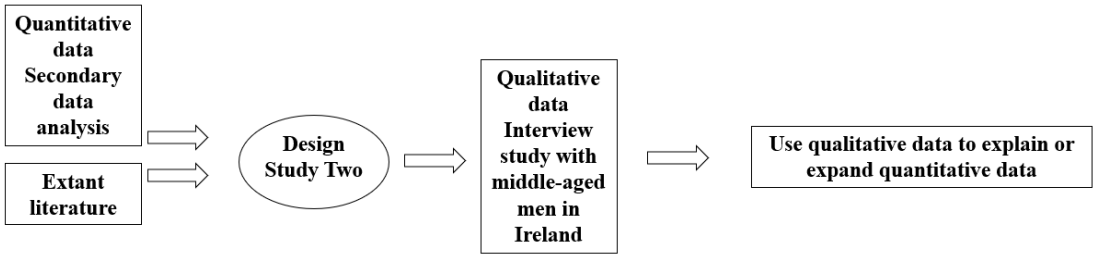


Figure 3 Research design used for this thesis

Using mixed methods added value to the research because it was not possible to fully explore the factors which influence changes to mental wellbeing using quantitative studies alone. As the process was not fully understood there was no suitable set of scales which could be used with the parkrun population, or a sub-population. Using the qualitative analysis highlighted possible factors which influence changes to mental wellbeing. Applying a pragmatic paradigm allowed the research to follow a postpositivist ontology and epistemology in the first (quantitative) study and a constructivist approach for the qualitative study which followed.

3.5 Public involvement in research in this thesis

When working in a pragmatic paradigm, the focus is on using any practical method to answer research questions. This can mean including the public and other stakeholders in research teams. Public involvement in research is defined as "research being carried out 'with' or 'by' members of the public rather than 'to', 'about' or 'for' them" (National Institute for Health and Care Research, 2024, p. 1). Sometimes called Public and Patient Involvement (PPI), it is guided by the principle "nothing about us without us" (Bagley et al., 2016, p. 2). PPI began in clinical research in response to requests from patients to be included in research that is related to their care (Gilfoyle et al., 2022). It is now increasingly used in health promotion studies (Cluley et al., 2022; Harting et al., 2022) in line with global trends in research (Skovlund et al., 2020). PPI is often a feature of doctoral research studies in the UK (Coupe & Mathieson, 2020; Dawson et al., 2020) and there are examples of PPI in PhD research based in Ireland, supported by the PPI Ignite programme (Gilfoyle et al., 2022; Pierce et al., 2023). Rationales for using PPI include democratic, transformative (promoting social justice) and instrumental (achieving a goal of good health) with some studies having overlapping or multiple rationales for PPI (Harting et al., 2022). PPI can be applied at a spectrum of levels from very basic information provision, inclusion through targeted consultation or full empowerment through co-production (Coupe & Mathieson, 2020; Department of Health, 2018).

In the current study PPI was used with the transformative and instrumental rationales at the targeted consultation level at two points in the studies. PPI was introduced early into Study Two, as recommended by Dawson et al (2020). Full details of the consultations are provided in Chapter Five. Study Three also used PPI for targeted stakeholder consultation as a key part of the research. Discussion with a public consultation group and feedback around the use of personas in health promotion were used to develop a set of policy and practice recommendations. Full details are described in Study Three (Chapter Six).

3.6 Conclusion to methodology chapter

This chapter contained a discussion of the pragmatism paradigm which was used to inform the research in this thesis. The mixed methods study design used a combination of quantitative and qualitative methods which have been described here. Each study

involved the public as part of the research design and the importance of this has been detailed. In the subsequent chapters each study will be explained in detail, with a description of the exact methods used at each stage.

Chapter Four. Study One. Mental wellbeing and social experiences related to participation in a community initiative: a cross-sectional study of parkrun participants in Ireland.

4.1 Overview of chapter four

As outlined in Chapter One this thesis aims to explore the mental wellbeing of parkrun participants in Ireland and understand the factors which influence any changes to mental wellbeing following parkrun participation.

The research in this chapter will address the thesis objective to use data from a survey of parkrun participants in Ireland to learn about the mental wellbeing of parkrun participants in Ireland and explore how the social experiences of parkrun participants in Ireland differ by gender, age and parkrun participation type.

The introduction and literature review in Chapter One and Chapter Two demonstrated a paucity of research about parkrun participation in Ireland, particularly in the areas of mental wellbeing and social experiences. Such understanding is important as Ireland has a different demographic and socio-economic profile when compared to other countries where parkrun research has been undertaken, such as the UK. Irish health polices describe a need for initiatives to promote mental wellbeing and an evidence base is required to determine which initiatives should be supported. This chapter describes a secondary data analysis which aims to add to the evidence base in these areas.

An adapted version of this chapter was submitted to the European Journal for Sport and Society and continues to be under review for publication in July 2024 as Dunne, A., Bullas, A., Quirk, H. & Haake, S. Social experiences during participation in a community physical activity initiative: a cross-sectional study of parkrun participants in Ireland.

4.2 Introduction

In the last decade there has been an increasing recognition of the importance of social relationships on mental wellbeing, with the Irish government now adopting this in their health promotion strategies (Department of Health, 2020; Health Service Executive, 2021). Previous studies have shown that sense of belonging and social cohesion provided

through meaningful social activities can benefit mental wellbeing (Nyqvist et al., 2013; Williams et al., 2020). The social interactions do not have to involve deep friendships; even brief social interactions with strangers have been shown to positively impact happiness and wellbeing (Sandstrom & Boothby, 2021; Van Lange & Columbus, 2021). The WHO Ottawa Charter for health promotion highlights the importance of strengthening community action for mental wellbeing (WHO, 1986) leading to an increase in provision of community initiatives which offer a purposeful activity along with an opportunity for social interaction with other participants (Chatterjee et al., 2018; Costello et al., 2019; Leavell et al., 2019).

Many community initiatives offer volunteering opportunities in addition to the activity (Chatterjee et al., 2018). It is well established that volunteering can contribute to mental wellbeing for people of all ages (Kenny et al., 2020; Laurence & Smyth, 2023) with social connection being a possible contributor (Whelan et al., 2023) so this adds an additional element of potential health benefits from community initiatives. As outlined in Chapter One, parkrun is one such initiative. One notable feature of parkrun is the ability to participate in regular social activity in addition to running, walking or volunteering. Some people volunteer at parkrun without ever running or walking the event, but the majority of volunteers are regular runners or walkers who participate as volunteers occasionally (Quirk et al., 2021). Previous research on the social experiences at parkrun have found that social contact can occur before, during, and after participation (Morris & Scott, 2019), with many locations offering participants the additional opportunity to socialise in a café after the event (Bowman, 2018). Bowness et al (2021, p. 59) described parkrun as a "sacred space" for communities which can strengthen social bonds within and beyond families, explaining that the feeling of social connection was what differentiated parkrun participation from running or walking alone outside the parkrun setting.

4.2.1 Social experiences at parkrun

There is little published research exploring the social experiences of parkrun participants across Ireland. The study by McNamara et al (2020) found that parkrun can be used as a space for social contact, though a very small sample size, one parkrun site with 12 participants, means the results should be interpreted with caution. Moreover, there are a limited number of studies from other countries. Studies from the UK, South Africa and Australia suggest that social factors such as recommendations from friends and family

support can be useful to initiate and maintain parkrun attendance (Chivunze et al., 2021; Sharman et al., 2019; Wiltshire & Stevinson, 2018). Social connections have also been described in parkrunners from the UK with mental health conditions (Morris & Scott, 2019) with volunteering facilitating additional opportunities for social interaction leading to improved mental health and social inclusion in this population (Ashdown-Franks, Sabiston, Stubbs, Atkinson, Quirk, et al., 2023). Thus, on account of the potential benefits of parkrun, further research into social experiences at parkrun is warranted. One social factor which has been studied at parkrun in the UK and Australia is social capital.

As described in Chapter One, social capital relates to the size and value of social networks (Bourdieu, 1986) and is commonly described as bonding or bridging (Helliwell & Putnam, 2004; Putnam et al., 1993). In the parkrun setting a UK study described how social capital can be used to commence and continue parkrun attendance, with participants being introduced to parkrun by people they know (Wiltshire & Stevinson, 2018). An Australian team suggested that parkrun can also be used to build social capital (Sharman et al., 2019). Other parkrun studies do not specifically mention social capital but there is some evidence that bonding social capital via social interaction can be a contributor to mental wellbeing, particularly for male parkrunners (Grunseit et al., 2017) with even brief interactions, described as casual sociability, contributing to a friendly atmosphere (Hindley, 2020). Bridging social capital is described in one study which suggests that parkrun participation can be an introduction to the social world of other athletics clubs and running groups, and that this can contribute to mental wellbeing (Bowness, McKendrick, et al., 2020). Negative aspects of social capital have been noted at parkrun, where the perception of cliques among regular parkrunners can lead to a feeling of exclusion among other parkrun participants such as slower runners (Bowness et al., 2021)

Social support, that is the emotional and informational support received by family, friends and acquaintances, is a well-established determinant of physical and mental health and wellbeing (Cohen & Wills, 1985). A UK study of six parkrun sites found that perceived social support from the parkrun community was associated with increased subjective enjoyment of parkrun events (Davis et al., 2021). Enjoyment was measured with a single question in Davis et al (2021) so an extension of this study with a validated scale to measure enjoyment as an element of mental wellbeing could be warranted.

4.2.2 Mental wellbeing of parkrun participants

In the published studies describing social factors of parkrun participation none of the studies fully explored the relationship between social experiences and mental wellbeing. The single small study in Ireland by McNamara et al (2020) did mention mental wellbeing benefits of parkrun such as relaxation, along with social outcomes like opportunities for conversation but this study did not make links between the two outcomes and was mainly focussed on the geography of parkrun locations. A small number of studies have measured the subjective mental wellbeing of parkrun participants in the UK and Australia. A cross-sectional study by Stevinson and Hickson (Stevinson & Hickson, 2014) used a five-point scale designed by the researchers with the same scale used later by Hindley (Hindley, 2020). Both studies showed that parkrun attendance in the UK was positively associated with high mental wellbeing scores, although these scores were not compared with scores from non-parkrunners (Hindley, 2020; Stevinson & Hickson, 2014). Grunseit, Richards and Merom (2017) explored an element of life satisfaction called personal wellbeing among parkrunners in Australia. Their results suggest gender differences where women's personal wellbeing was connected to improved mental health, whereas men tended to experience wellbeing related to social connections in the community (Grunseit et al., 2017). This is one of the first studies to suggest that social factors may be linked to mental wellbeing at parkrun; an area worthy of further investigation. In a recent study by the PhD candidate 69.3% of runners and walkers at parkrun in the UK who completed a parkrun survey said their mental health was better or much better since participating in parkrun, with 69.7% saying their feeling of being part of their community was better or much better (Dunne et al., 2021).

As a consequence of the importance of understanding mental wellbeing and social experiences related to parkrun participation, but a paucity of research in this field, the aim of this chapter is to study the mental wellbeing and social experiences of parkrun participants in Ireland using a secondary data analysis of parkrun Health and Wellbeing survey results for Ireland.

The research questions for this chapter are:

1: What is the mental wellbeing status of parkrun participants in Ireland ?

2: What social interactions and social opportunities does parkrun provide to participants in Ireland?

3: What is the relationship between social interactions and social opportunities and mental wellbeing of parkrun participants in Ireland?

4.3 Method

To answer the research questions for this study, access to an existing dataset from the parkrun Health and Wellbeing survey was requested. Completing a secondary analysis of existing data was part of the pragmatic approach to this research. Using existing data saved costs and time for the researcher (Clark et al., 2021; Moore et al., 2021) and avoided duplication of the survey, therefore reducing the risk of survey fatigue among parkrun participants (Brown et al., 2024). From an ethical perspective it was appropriate to use an existing dataset rather than repeat data collection (Clark et al., 2021). The parkrun research board oversee all research involving parkrun participants: approval from the board was given for access to the Health and Wellbeing survey dataset used in this study (approval reference RSR202004).

This study is the first element of the mixed methods process, as highlighted in Figure 4.

Figure 4 Mixed methods process highlighting the position of the secondary data analysis.

4.3.1 Data familiarisation

The parkrun Health and Wellbeing survey included data collected from parkrun in the UK and Ireland (Haake et al., 2019a, 2019b). To ensure familiarisation with the dataset the candidate undertook a preliminary study using the UK dataset in addition to reading the survey instruments, data management plan and related documentation (Cheng &

Phillips, 2014). The study explored mental wellbeing of UK parkrun participants (runners and walkers) along with their motivations for participating in parkrun. The results of this study are published (Dunne et al., 2021) and the exercise was successful in that the candidate was fully familiar with the dataset before commencing data analysis for the study reported in this chapter.

4.3.2 The parkrun Health and Wellbeing survey in Ireland

The Health and Wellbeing survey was provided as an online Qualtrics link emailed to all parkrun registrants in Ireland. Power calculations before survey distribution determined that the full parkrun population would be emailed the survey, to allow segmentation of the results into subgroups such as gender and age groups and give satisfactory statistical power (Haake et al., 2019a). The survey contained 47 questions and had the broad aim to assess health, wellbeing and the perceived impact of parkrun participation. Where possible, validated scales were used in the questionnaire, including the Short Warwick Edinburgh Mental Wellbeing Scale (SWEMWBS) to assess mental wellbeing at the time of the study (Haake et al., 2019a).

4.3.3 Ethical approval

Ethical approval was granted by Sheffield Hallam University Research Ethics Committee on 24/7/2018 for the original parkrun Health and Wellbeing survey (ER7034346). Further ethical approval was granted for this secondary data analysis on 23/6/2020 (ER23166109). A copy of the ethics approval certificate can be found in Appendix 4.1.

4.3.4 Primary data set: parkrun Health and Wellbeing Survey 2018

The parkrun Health and Wellbeing study dataset was chosen for this study because it contained recently collected data from parkrun participants across the whole of Ireland (Haake et al., 2019a). It included volunteers in addition to runners and walkers, something that was missing from many previous parkrun studies. The dataset contained responses to a wide range of questions about physical and mental health and wellbeing alongside participant demographics (Haake et al., 2019a).

A comprehensive outline of the Health and Wellbeing survey design, content and methods are contained within reports from Haake et al. (2019a) and Quirk et al. (2021) and a full copy of the survey tool is published by Haake et al (2019a). Briefly - the parkrun Ireland Health and Wellbeing Survey was hosted on Qualtrics (www.qualtrics.com) and

distributed in English by email between 29th October 2018 and 3rd December 2018 to 189,550 adults in the Republic of Ireland aged 16 and over who were registered with parkrun (Haake et al., 2019a). The survey was not available in the Irish language. Of 8,612 returned surveys (4.5% response rate), 4,304 respondents who had participated in at least one parkrun as a runner, walker, or volunteer completed the questions (2.3% completion rate). The remaining 4,308 either opened the online survey and did not consent to participate (153), opened the survey and consented to participate but did not answer any questions (3,725), were duplicates (189) or completed the survey and self-identified as *registered but not yet participated (*241). Those *registered but not yet participated* fell out of the remit of this thesis and are not included in the analysis.

The survey asked 47 questions relating to various aspects of mental and physical health and wellbeing, alongside self-reported parkrun participation type: volunteers, runners/walkers who volunteer, runners/walkers (who do not volunteer). Where respondents recorded their parkrun identification number, parkrun participation data and additional demographics held by the parkrun charity were matched to survey responses. At the time of the survey in 2018, the only options for gender identity at parkrun registration were *male*, *female* or *prefer not to say*. Since 2020 this has been updated to include a fourth option of *another gender identity* (parkrun UK, 2022).

The SWEMWBS was an appropriate choice for the parkrun Health and Wellbeing survey because it is commonly used to assess the impact of health promotion interventions (Blodgett et al., 2022; Peitz et al., 2024). Tennant and colleagues developed this scale as an attempt to measure mental wellbeing and positive mental health, to allow comparison of interventions and measurement in individuals and populations (Tennant et al., 2007). The scale focusses only on the positive aspects of mental wellbeing and includes hedonistic (pleasure) and eudaimonic (purpose) measures (Tennant et al., 2007; Weich et al., 2011). The scale has been validated in clinical and non-clinical populations (Shah et al., 2018) and countries including England (Ng Fat et al., 2017), Denmark (Koushede et al., 2019) and Germany (Peitz et al., 2024).

4.3.5 Secondary data analysis

For this secondary analysis, data was extracted from the Health and Wellbeing Survey dataset for Ireland. To answer the research questions responses to questions on mental

wellbeing, social interaction, and social opportunities, along with demographic information and parkrun participation type were retrieved.

4.3.6 Assessment of social experiences

Social experiences were measured with questions written by the survey design team. The parkrun Health and Wellbeing survey used two questions to assess the social interactions and social opportunities at parkrun (Haake et al., 2019a). As the questions were specific to social interactions at parkrun they were written by the team of researchers who designed the study and peer reviewed before use (Haake et al., 2019a). The advantage is that the replies are specific to experiences at parkrun, but the disadvantage is that the results cannot be compared to social experiences in other community initiatives. The questions were presented as follows:

Social interactions: "Who do you usually interact with at parkrun? i.e. those you attend and communicate with at parkrun." A choice of 10 options was provided (*family, friends, parkrun participants, strangers, spouse/partner, member of a sports club, member of a non-sports club, neighbours, work colleagues and did not interact),* with survey respondents free to select any number of options that applied without restriction. A chance to describe other using free text was included (Haake et al., 2019a).

Social opportunities: "In terms of relationships, what opportunities has parkrun opened up for you?" A choice of 8 options was provided (*I have met new people of a similar background, I have met new people of a different background, I feel closer to my existing friends or family, I have joined a sports club, I have joined a non-sports club, I feel part of my community, it's made me feel isolated, it has allowed me to spend time on my own*) with the survey respondents free to select any number of options that applied without restriction. A chance to describe *other* using free text was included (Haake et al., 2019a).

Data validation and preparation for statistical analysis were completed using Excel for PC (V16, Microsoft Corporation). The initial handling and validation of raw data from the survey are described in a previous publication (Quirk et al., 2021) and were completed before this secondary analysis commenced. As some survey respondents did not answer all questions, data tables include the relevant sample size (n).

Statistical analysis was conducted using IBM SPSS Statistics for PC (v26). Mental wellbeing and social experience results for the three demographic groups (gender, age,

and parkrun participation type) were compared. At the time of data collection only two genders were offered as an option during parkrun registration, so gender was grouped into male and female. Where appropriate, respondents were segmented into age categories chosen to allow comparison with previous research such as Grunseit et al (2017) and in line with target age groups for suicide prevention and mental health promotion (Cox et al., 2022; O'Donnell & Richardson, 2020). Age categories were segmented into ten year categories of 25-34 years, 35-44 years and so on to match the Grunseit study (Grunseit et al., 2017) where possible. The only exceptions were the 16-24 years group, differing from Grunseit with the addition of 16 and 17 year olds, and the over 75 age group, where Grunseit group all over 65 together (Grunseit et al., 2017). The extra age group was added to include detail for the older age categories as at this stage the PhD candidate was unsure which demographic future studies would focus on.

Three parkrun participation categories were used. This was self-reported participation type and was segmented into runner/walker who volunteers, runner/walker only and volunteer only.

The chi-square test of independence (χ^2) statistic was used to evaluate the differences between social and mental outcomes for these groups because two of the three groups, gender and parkrun participation type, had categorical data. The age groups are ordinal data, so more detail could be obtained by using a different statistical test, such as Mann-Whitney U test, but to allow for a consistent set of results it was decided to use χ^2 for all three groups of data.

Mental wellbeing scores were calculated by creating a raw score from the seven questions which make up the scale. Raw scores were then converted to final scores using a conversion table provided by the scale designers (Warwick Medical School, 2021). This conversion is necessary due to the condensing of the short version of the scale from the original 14 item Warwick Edinburgh Mental Wellbeing Scale (Warwick Medical School, 2021).

Social interactions and social opportunities were recorded as a set of simple yes/no responses in the survey. These could not be combined into a single social score as the questions were designed specifically for the parkrun Health and Wellbeing survey and further manipulation of the responses had not been validated.

For all analyses *p* values were calculated with statistical significance α level set as $p<0.01$. chosen due to the large sample size (Dahiru, 2008).

Normality of data was evaluated by creating a histogram, applying a normal curve and calculating skew and kurtosis in SPSS. As the sample size is over 300 the values for skewness and kurtosis were assessed without regard for standard error (Kim, 2013). Thus, skew less than 2 and kurtosis is less than 4 were regarded to meet the conditions for a normal distribution as advised by Kim (2013).

Effect size is a useful addition to calculating a statistical significance as it allows an objective assessment of the size of the effect which can be compared across different studies (Field & Hole, 2003). Effect size can range between 0 (no effect) and 1 (perfect effect) (Field & Hole, 2003). In this study Cramer's V was calculated to assess the effect size when comparing two variables using the $\chi 2$ statistic (Tomczak & Tomczak, 2014). Following Cohen's (1988) guidance the effect size thresholds vary according to the degrees of freedom, with the following categories used for a 2 x 2 table: small r <0.1, medium $0.1 \leq r < 0.5$ and large $r \geq 0.5$ (Cohen, 1988).

4.4 Results

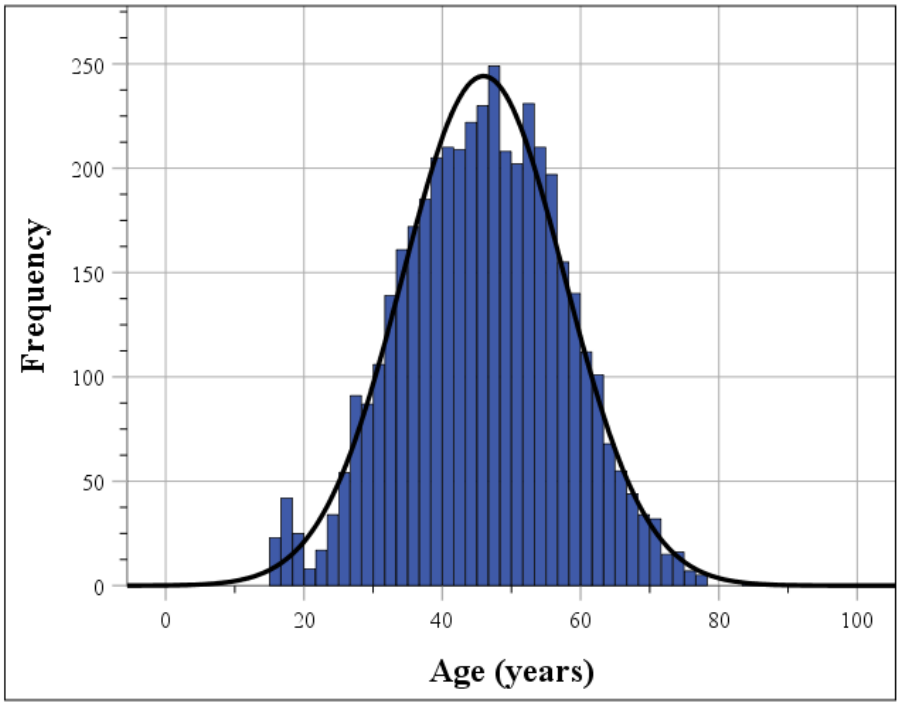
4.4.1 Survey respondent characteristics

Data were analysed from 4,304 respondents to the parkrun Health and Wellbeing survey Ireland (Haake et al., 2019a). The demographics in Table 3 show that there were more female, than male, respondents (54.4%, n= 1,855) and respondents were predominantly White (n=4,203, 98.5%). Self-reported parkrun participation type was split between runners/walkers (n=2,283, 53%) and runners/walkers who volunteer (n=1,967, 45.7%) with only 1.3% (n=54) describing themselves as volunteers who do not run or walk at parkrun.

Table 3 Characteristics of parkrun Health and Wellbeing survey respondents

	n	%
All respondents	4,304	
Gender (n=3,413)		
Male	1,558	45.6
Female	1,855	54.4
Age category in years (n=4,303)		
16-44	1,990	46.2
45-64	2,103	48.9
65+	210	4.9
parkrun participant type (n=4,304)		
Runner/walker and volunteer	1,967	45.7
Runner/walker only	2,283	53.0
Volunteer only	54	1.3
Ethnicity (n=4,270)		
White Irish	3,794	88.9
White Irish Traveller	3	0.1
White - other	406	9.5
Black, Asian, other minority	50	1.2
Rather not say	17	0.4

The age distribution of survey respondents is shown in Figure 5. The distribution is classed as normal because skewness is less than 2 and excess kurtosis is less than 4, as suggested by (Kim, 2013).



n=4,303. Mean age 45.95 (range 16.02 to 85.19 years). SD 11.72, skewness -0.060 (standard error 0.037), excess kurtosis -0.259 (standard error 0.075).

Figure 5 Age distribution for respondents to parkrun Health and Wellbeing survey.

4.4.2 Mental wellbeing of survey respondents

This section describes the results for the first research question:

1: What is the mental wellbeing status of parkrun participants in Ireland?

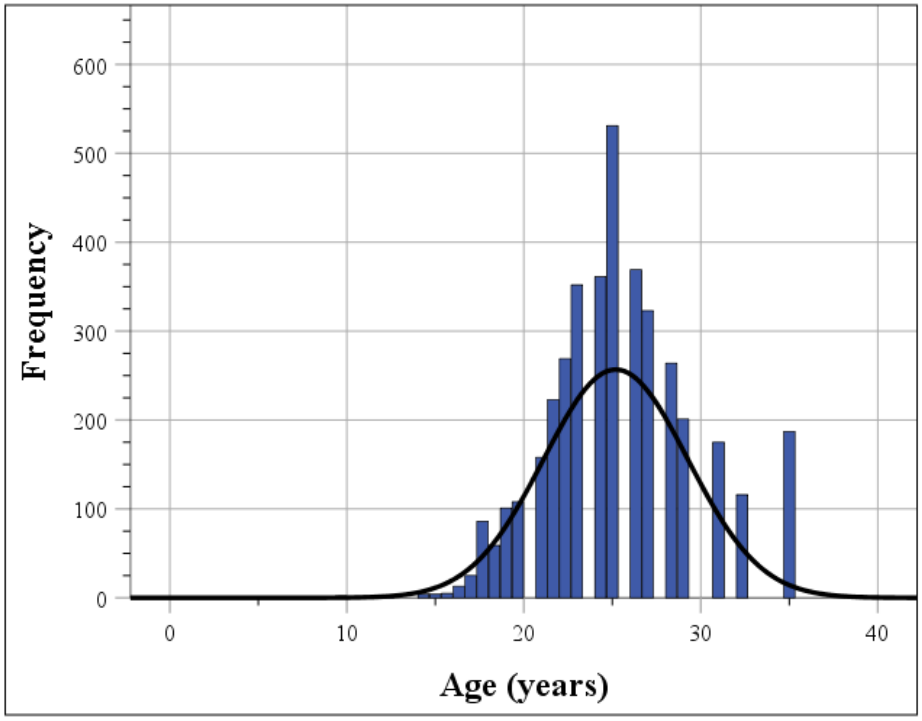
In the Health and Wellbeing survey, mental wellbeing was assessed using the Short Warwick Edinburgh Mental Wellbeing Scale (SWEMWBS) which gives a score range 7 to 35. The scale designers suggest that a SWEMWBS score less than 18 indicates probable clinical depression and scores over 27.4 indicate high levels of mental wellbeing (Warwick Medical School, 2021).

Table 4 shows the mean SWEMWBS scores for the parkrun survey respondents segmented by gender, age category and parkrun participation type.

Table 4 Short Warwick Edinburgh Mental Wellbeing Scale (SWEMWBS) scores for respondents to the parkrun Health and Wellbeing survey in Ireland

		Short Warwick Edinburgh Mental Wellbeing Scale score				
	n	Mean	SD±	Min	Max	IQR
All respondents	4,304	25.19	4.08	7.00	35.00	22.35-27.03
Gender						
Male	1,558	25.29	4.13	9.51	35.00	22.35-27.03
Female	1,855	25.24	4.08	12.40	35.00	22.35-28.13
Age category in years						
16-24	149	23.33	4.30	12.40	35.00	20.36-25.03
25-34	638	24.15	3.75	14.75	35.00	21.54-26.02
35-44	1,203	24.79	3.89	9.51	35.00	22.35-27.03
45-54	1,330	25.41	3.93	15.84	35.00	23.21-28.13
55-64	773	26.15	4.28	7.00	35.00	23.21-28.13
65-74	196	27.37	4.45	17.98	35.00	24.11-30.70
75+	14	27.74	3.88	23.21	35.00	25.03-30.70
parkrun participation type						
Runner/walker and volunteer	1,967	25.46	4.04	14.08	35.00	23.21-27.03
Runner/walker only	2,283	24.98	4.06	9.51	35.00	22.35-27.03
Volunteer only	54	24.09	5.46	7.00	35.00	23.21-27.03

The mean SWEMWBS score for all subgroups in this study (Table 4) were within the range for normal mental wellbeing, although individual respondents did achieve scores across the full spectrum of the scale. The distribution of SWEMWBS scores, as shown in Figure 6, was normal with skewness less than 2 and excess kurtosis less than 4 (Kim, 2013).



n=3,938. Mean SWEMWBS 25.19 (range 7 to 35). SD 4.08, skewness 0.376 (standard error 0.039), excess kurtosis 0.311 (standard error 0.078).

Figure 6 SWEMWBS score frequency distribution

When using a validated scale such as SWEMWBS it is possible to compare results with national reference data to measure the impact of a particular intervention (Peitz et al., 2024). At the time of writing there are no published adult population scores for SWEMWBS for Ireland, thus mean SWEMWBS scores from adults age 16 years and older in England, published by Ng Fat et al (2017), were used as a comparison to explore trends in the data and consider the possible impact of parkrun participation.

Figure 7 shows the mean SWEMWBS scores for male and female respondents to the parkrun Health and Wellbeing survey alongside published mean SWEMWBS scores for the general adult population of England. As the full dataset from Ng Fat et al (2017) is not available it was not possible to complete a full statistical comparison. However, one trend was noted by comparing the results graphically: mean SWEMWBS scores increased with age for both male and female parkrun survey respondents. This contrasts with more stable score distribution across the age ranges for the England population reported by Ng Fat et al (2017). Therefore, the mental wellbeing scores for older parkrun participants

appear to be higher than expected, particularly from age 45 and older, although this cannot be confirmed statistically without a full set of reference data.

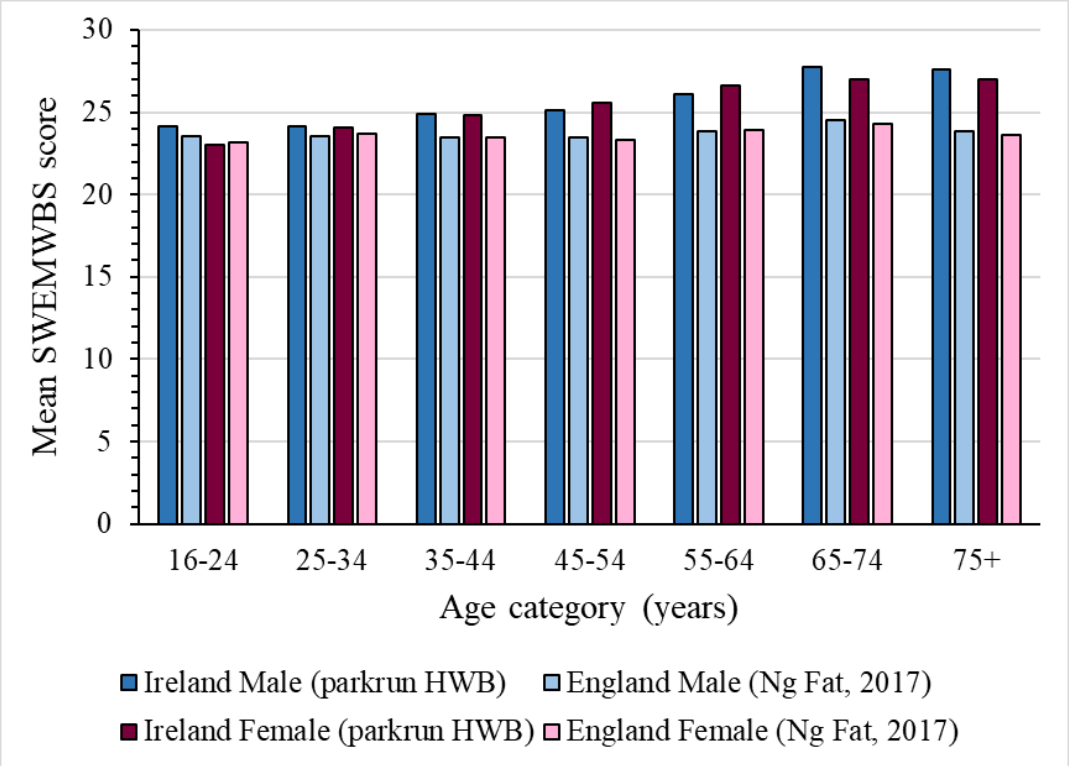


Figure 7 Mean SWEMWBS scores for health and wellbeing survey respondents from Ireland compared to published mean SWEMWBS scores for population of England.

From the graphical representation of age and SWEMWBS scores in Figure 7 it appeared that there was an increase in mental wellbeing which correlated with age. To examine whether this relationship was statistically significant, and to assess the effect size of this relationship, Pearson's correlation coefficient (r) was calculated. Pearson's coefficient was chosen to assess the correlation because the SWEMWBS scores followed a normal distribution so parametric tests could be applied (Field, 2018). The Pearson correlation coefficient demonstrated a positive correlation between age and SWEMWBS score for the parkrun Health and Wellbeing survey respondents, $r(3,935) = 0.214$, $p < 0.01$. This means that as age increased, SWEMWBS score increased.

When the correlations were repeated by gender the results were as follows, again showing a positive correlation: for males $r(1448) = 0.207$, $p<0.01$ and for females $r(1706) = 0.243$, $p<0.01$. This means that there is a statistically significant increase in SWEMWBS scores for both genders as age increases.

4.4.3 Social experiences at parkrun in Ireland

This section describes the results which answer the second research question:

2: What social interactions and social opportunities does parkrun provide to participants in Ireland?

The Health and Wellbeing survey contained two questions about social experiences at parkrun (the full questions are listed in section 4.3.6). Results are tabulated at the end of this section, with responses segmented by gender (Table 5), age (Table 6) and participation type (Table 7). As these social questions were designed for the survey there is no population reference data to compare with the survey data.

4.4.4 Social interactions at parkrun in Ireland

The parkrun Health and Wellbeing survey asked, "Who do you usually interact with at parkrun?" The most selected response for social interaction was other *parkrun participants*: 2,740 respondents (69.4%). Interactions with *friends* and *strangers* showed similar levels of response (45.9% and 44.1% respectively), while 231 respondents (5.9%) noted that they *did not interact* with anyone at parkrun. There were no significant differences ($p<0.01$) in responses between males and females for any response to this question (Table 5).

Table 6 shows that younger participants (age 16-44 years) were less likely to note social interactions, when compared to participants over 45 years old. When considering the responses for each type of interaction the youngest age group were less likely (than 45-64 years and over 65 years) to interact with other *parkrun participants* and *strangers* (both $p<0.001$). Participants over 65 years old were the least likely to report interacting with *work colleagues* ($p=0.004$). There were no age differences for interacting with *friends, family, spouse, or member of a sports club*.

Responses segmented by parkrun participation type are shown in Table 7. Overall volunteering at parkrun appears to increase the likelihood of social interactions, whether

done with or without running/walking. For example, respondents who volunteered at parkrun, both with or without running/walking, were significantly more likely to interact with *other parkrun participants* (p<0.001). For other choices, runners/walkers who volunteer were often the most likely to note a social interaction; for example, with *friends*, *strangers*, *spouse/partner*, member of a club (*sports* and *non-sports club*) and *work colleagues* (all p<0.001). Respondents who volunteered without running/walking were most likely to note an interaction with *family* (p<0.001). Runners/walkers (who did not volunteer) were most likely to say that they *did not interact* with anyone at parkrun, with 203 respondents (9.7%) noting this lack of interaction (p<0.001).

4.4.5 Social opportunities at parkrun in Ireland

Social opportunities at parkrun were explored in the Health and Wellbeing survey with the question "In terms of relationships, what opportunities has parkrun opened up for you?" Reponses are shown in Table 5 (segmented by gender), Table 6 (age category) and Table 7 (parkrun participation type). The most common responses (Table 5) were *I feel part of my community* (48.2%), *I have met new people of a different background* (33.7%), and *I have met new people of a similar background* (32.4%). The response *It has made me feel isolated* was chosen by 717 respondents (18.5%). Two response types showed a significant gender difference for social opportunities (Table 5): females were more likely to select *It's made me feel isolated* (p<0.001) but less likely than males to select *It's made no difference to me* (p=0.004).

There were some age group differences in the responses to the social opportunities question (Table 6): 45-64 year olds were most likely, when compared to the other two age groups, to say they *felt part of the community* (p=0.002). Over 65 year olds were most likely to select *I have met new people*, from both *similar* or *different backgrounds* (p<0.001) while the youngest respondents (16-44 years) were most likely to say that parkrun participation *made me feel isolated* (p=<0.001) with 402 respondents aged 16-44 years selecting this option (22.8%).

There were several differences in responses to social opportunities between the parkrun participation types with respondents who volunteer, with or without running/walking, more likely to note social opportunities (Table 7). Respondents who volunteer without running or walking were most likely to say they *felt part of my community* (p<0.001). Runners/walkers who volunteer were most likely to have *met new people*, both from a

similar or *different background* ($p<0.001$). Runners/walkers (who don't volunteer) were most likely to state *It's made no difference to me*, and *It's made me feel isolated* ($p<0.001$).

The results of the two social experience questions include a calculation of effect size using Cramer's V. The results which had the largest effect size were all for comparison of parkrun participation type (Table 7) for runner/walker and volunteer vs runner/walker only and volunteer only vs runner/walker only. The three highest effect scores from the table are:

Social opportunity: I have met new people of a different background. Effect size= 0.381 (d.f.=2, $p<0.001$)

Social interaction; parkrun participants. Effect size=0.347 (d.f. 2, $p<0.001$).

Social opportunity: I have met new people of a similar background. Effect size=0.322 (d.f. 2, $p<0.001$).

Using effect sizes as a guide, it is possible to say that volunteering at parkrun had the strongest association with social experiences, when compared to comparisons by gender or age. However, this interpretation should be made with caution, as people who are naturally more sociable might be more likely to volunteer at parkrun.

Table 5 Proportion of respondents to the parkrun Health and Wellbeing survey, by gender, who selected each response to social questions

p<0.01 in bold male vs female.

	n			%			Comparison male vs female		
	Total	Male	Female	Total	Male	Female	χ^2 (df=1)	*p*	Cramer's V
Social interactions									
All respondents to this question	3,946	1,453	1,713	100	45.9	54.1			
parkrun participants	2,740	1,061	1,218	69.4	73.0	71.1	1.43	0.231	0.021
friends	1,812	682	810	45.9	46.9	47.3	0.04	0.845	0.003
strangers	1,740	703	754	44.1	48.4	44.0	6.03	0.014	0.044
family	1,171	415	552	29.7	28.6	32.2	4.97	0.026	0.040
spouse/partner	989	374	423	25.1	25.7	24.7	0.46	0.499	0.012
member sports club	829	310	372	21.0	21.3	21.7	0.07	0.795	0.005
neighbours	699	293	301	17.7	20.2	17.6	3.47	0.062	0.033
work colleagues	398	167	159	10.1	11.5	9.3	4.16	0.041	0.036
members non-sports club	357	145	152	9.0	10.0	8.9	1.13	0.287	0.019
did not interact	231	89	88	5.9	6.1	5.1	1.45	0.228	0.021
other	85	26	43	2.2	1.8	2.5	1.92	0.166	0.025
Social opportunities									
All respondents to this question	3,867	1,428	1,683	100	45.9	54.1			
I feel part of my community	1,862	704	863	48.2	49.3	51.3	1.21	0.272	0.020
I have met new people of a different background	1,302	537	596	33.7	37.6	35.4	1.60	0.205	0.023
I have met new people of a similar background	1,253	500	566	32.4	35.0	33.6	0.66	0.418	0.015
I feel closer to my existing friends or family	871	304	396	22.5	21.3	23.5	2.23	0.136	0.027
It's made no difference to me	787	304	289	20.4	21.3	17.2	8.49	**0.004**	0.052
It's made me feel isolated	717	220	351	18.5	15.4	20.9	15.31	**<0.001**	0.070
I have joined a sports club	460	158	230	11.9	11.1	13.7	4.79	0.029	0.039
I have joined a non-sports club	97	28	55	2.5	2.0	3.3	5.08	0.024	0.040
other	97	34	50	2.5	2.4	3.0	1.02	0.312	0.018
It has allowed me to spend time on my own	0	0	0	0.0	n/a	n/a	n/a	n/a	n/a

Table 6 Proportion of respondents to the parkrun Health and Wellbeing survey, by age category, who selected each response to social questions

a = p<0.01 16-44 vs 45-64 b = p<0.01 16-44 vs 45-64 and 16-44 vs 65+ c = p<0.01 16-44 vs 65+ and 45-64 vs 65+

	n			%			Comparison age categories		
	16-44 years	45-64 years	65+years	16-44 years	45-64 years	65+years	χ^2(df=2)	*p*	Cramer's V
All	1,808	1,943	195	45.8	49.2	4.9			
Social interactions									
parkrun participants	1,115	1,464	161	61.7	75.3	82.6	99.21	**<0.001**[b]	0.159
friends	825	903	84	45.6	46.5	43.1	0.94	0.626	0.015
strangers	681	950	109	37.7	48.9	55.9	59.48	**<0.001**[b]	0.123
family	530	583	58	29.3	30.0	29.7	0.22	0.898	0.007
spouse/partner	459	497	33	25.4	25.6	16.9	7.26	0.027	0.043
member sports club	350	441	38	19.4	22.7	19.5	6.58	0.037	0.041
neighbours	257	404	38	14.2	20.8	19.5	28.24	**<0.001**[a]	0.085
work colleagues	186	206	6	10.3	10.6	3.1	11.22	**0.004**[c]	0.053
members non-sports club	137	204	16	7.6	10.5	8.2	9.89	**0.007**[a]	0.050
did not interact	134	88	9	7.4	4.5	4.6	14.69	**0.001**[a]	0.061
other	44	34	7	2.4	1.7	3.6	4.08	0.130	0.032
Social opportunities									
I feel part of my community	804	975	83	45.7	50.9	43.2	12.02	**0.002**[a]	0.056
I have met new people of a different background	458	753	91	26.0	39.3	47.4	89.67	**<0.001**[b]	0.152
I have met new people of a similar background	462	707	84	26.3	36.9	43.8	59.54	**<0.001**[b]	0.124
I feel closer to my existing friends or family	418	412	41	23.8	21.5	21.4	2.79	0.248	0.027
It's made no difference to me	375	367	45	21.3	19.2	23.4	3.78	0.151	0.031
It's made me feel isolated	402	300	15	22.8	15.7	7.8	46.66	**<0.001**[b]	0.110
I have joined a sports club	208	234	18	11.8	12.2	9.4	1.37	0.505	0.019
I have joined a non-sports club	42	48	7	2.4	2.5	3.6	1.12	0.570	0.017
other	37	53	7	2.1	2.8	3.6	2.73	0.256	0.027
It has allowed me to spend time on my own	0	0	0	0.0	0.0	0.0	n/a	n/a	n/a

Table 7 Proportion of respondents to the parkrun Health and Wellbeing survey, by parkrun participation type, who selected each response to social questions

a = p<0.01 runner/walker and volunteer vs runner/walker only

b = p<0.01 runner/walker and volunteer vs runner/walker only and volunteer only vs runner/walker only

	n			%			Comparison participation types		
	Runner/ walker and volunteer	Runner/ walker only	Volunteer only	Runner/ walker and volunteer	Runner/ walker only	Volunteer only	χ^2 *(df=2)*	*p*	Cramer's V
All	1,805	2,095	46	45.7	53.1	1.2			
Social interactions									
parkrun participants	1,563	1,140	37	86.6	54.4	80.4	475.72	**<0.001**[b]	0.347
friends	999	792	21	55.3	37.8	45.7	120.15	**<0.001**[a]	0.174
strangers	1,063	654	23	58.9	31.2	50.0	301.91	**<0.001**[a]	0.277
family	602	550	19	33.4	26.3	41.3	26.43	**<0.001**[a]	0.082
spouse/partner	535	441	13	29.6	21.1	28.3	38.35	**<0.001**[a]	0.099
member sports club	534	289	6	29.6	13.8	13.0	147.45	**<0.001**[a]	0.193
neighbours	456	234	9	25.3	11.2	19.6	132.24	**<0.001**[a]	0.183
work colleagues	220	176	2	12.2	8.4	4.3	17.03	**<0.001**[a]	0.066
members non-sports club	250	101	6	13.9	4.8	13.0	96.97	**<0.001**[a]	0.157
did not interact	28	203	0	1.6	9.7	0.0	119.42	**<0.001**[a]	0.174
other	31	51	3	1.7	2.4	6.5	6.58	0.037	0.041
Social opportunities									
I feel part of my community	1,137	692	33	63.4	34.1	68.8	337.00	**<0.001**[b]	0.295
I have met new people of a different background	944	335	23	52.7	16.5	47.9	561.95	**<0.001**[b]	0.381
I have met new people of a similar background	868	367	18	48.4	18.1	37.5	400.60	**<0.001**[b]	0.322
I feel closer to my existing friends or family	421	443	7	23.5	21.8	14.6	3.07	0.215	0.028
It's made no difference to me	184	600	3	10.3	29.6	6.3	224.75	**<0.001**[b]	0.241
It's made me feel isolated	281	432	4	15.7	21.3	8.3	23.07	**<0.001**[a]	0.077
I have joined a sports club	305	151	4	17.0	7.4	8.3	83.73	**<0.001**[a]	0.147
I have joined a non-sports club	57	37	3	3.2	1.8	6.3	10.08	**0.006**[b]	0.051
other	40	57	0	2.2	2.8	0.0	2.526	0.283	0.026
It has allowed me to spend time on my own	0	0	0	0.0	0.0	0.0	n/a	n/a	n/a

4.4.6 Relationship between mental wellbeing and social experiences at parkrun.

The third research question for this study was.

3: What is the relationship between social interactions and social opportunities and mental wellbeing of parkrun participants in Ireland?

The parkrun Health and Wellbeing survey results contained data on mental wellbeing, social interactions and social opportunities at parkrun in Ireland. To answer the third research question, a comparison of the two sets of data would be required in one of the following ways:

1. Compare mental wellbeing score with social interactions score and compare mental wellbeing score with social opportunities score.

or

2. Compare mental wellbeing score with combined social interactions and social opportunities score.

Neither of these data comparisons was possible because the social interaction or social opportunities could not be combined into a single social score to allow statistical comparison with the mental wellbeing score. As the social questions were not from a validated scale and there was no reference data available any attempt to combine the data into a single score would give meaningless results.

The results of the secondary data analysis and implications for future research will be discussed further in the following section.

4.5 Discussion

The secondary data analysis described in this chapter aimed to answer the following research questions.

1: What is the mental wellbeing status of parkrun participants in Ireland?

2: What social interactions and social opportunities does parkrun provide to participants in Ireland?

3: What is the relationship between social interactions and social opportunities and mental wellbeing of parkrun participants in Ireland?

Questions 1 and 2 have been answered by the results described in section 4.4. It was not possible to answer question 3, to compare the social interactions and social opportunities data with the mental wellbeing data. The implications of results from the secondary data analysis, including those relating to each research question, will be discussed in this section.

4.5.1 Characteristics of survey respondents

The demographics of the survey respondents can be compared to the whole parkrun population at the time of the survey to assess generalisability of the results. The survey respondents had a similar proportion of females (54.4.% compared to 56.6% of the whole parkrun population at the time of the survey) and were older, with the mean age of survey participants (over 16 years) at 46.0 years compared to 39.9 years for the full adult parkrun population (Haake et al., 2019a).

At the time of the Health and Wellbeing survey, ethnicity data was not collected during parkrun registration, so cannot be compared with the full parkrun population. However, the results can be compared to the population of Ireland. From the 2016 Census the largest ethnic group in Ireland was *White Irish* (82.2%) followed by *Any other White background* (9.5%), *non-Chinese Asian* (1.7%) and *Other including mixed background* (1.5%) (Central Statistics Office, 2017b). Therefore, the percentage of *White Irish* respondents to the Health and Wellbeing survey (88.8%) was higher than the general population at the time of the survey and the percentage *from any other White background* was the same (both 9.5%). A similar profile is seen from research in the UK which showed that the parkrun population tends to have less ethnic diversity than the local population (Fullagar et al., 2019; Goyder et al., 2018; Smith et al., 2020). Fullagar et al (2019) made recommendations for how to improve ethnic inclusivity at parkrun events in the UK, including changes to parkrun marketing and working closely with local non-governmental organisations. These recommendations could be applied to parkrun in Ireland particularly in areas with high densities of ethnic diversity in the local community. Given the growth in ethnic diversity in the population of Ireland and an increase in inward migration (Central Statistics Office, 2023a), this is an area which could be revisited in research and monitored going forward.

4.5.2 Mental wellbeing of survey respondents

To answer the first research question mental wellbeing of the survey respondents was measured using the SWEMWBS tool. There are currently no published reference scores from the SWEMWBS for the Irish population. Comparing the scores from this study with a large population study in neighbouring country England indicates that the parkrun survey respondents from Ireland had a smaller proportion with poor mental wellbeing and greater proportion with high mental wellbeing scores (Ng Fat et al., 2017). Although the mental wellbeing scores for this study were higher than we would expect in the general population, it is not possible to say from this cross-sectional study that parkrun participation has caused this increase. The possibility of a bidirectional relationship should be considered: perhaps people with higher mental wellbeing are more motivated to participate in parkrun. This is an area for further exploration, particularly as a similar phenomenon appears to be shown in Irish attendees of the Men's Shed social initiative (McGrath et al., 2022). In the current study there was a positive correlation between SWEMWBS scores and age for both men and women. This result is contrary to that observed in a study of men attending the Men's Sheds community initiative in Ireland where there was not a statistically significant association between age and SWEMWBS score in the shed members cohort (McGrath et al., 2023). The shed attendees were older on average than the parkrun males with mean age of 69.1 years (27-90) ± 9.14 and had a mean SWEMWBS of 26.90 (13.33-35.0) ± 4.77 (McGrath et al., 2023). Mental wellbeing for men who attend community initiatives in Ireland is an area for further study, to understand more about these phenomena.

4.5.3 Social interactions at parkrun

To address the second research question analysis of the social interactions results took place. Results showed clear differences across the age categories. Participants over 45 years were more likely to interact with a wide range of people at parkrun and noted more relationship opportunities than younger participants. Previous research proposed that younger parkrunners are focussed on the physical health benefits of parkrun rather than psychological wellbeing (Grunseit et al., 2017). The current study echoes these results as the younger age categories were least likely to note social interactions at parkrun.

This suggests two recommendations: (1) we could accept that younger people do not want social interactions and health promotion initiatives or marketing of parkrun should focus

on the physical benefits of parkrun; (2) we could consider that there is a cohort of younger parkrunners who would like to have social interaction at parkrun, but they are experiencing barriers to doing so. Both are possible topics for future research. The social interaction results also suggests that older people could view parkrun as a social or community initiative rather than purely a physical challenge. This makes parkrun a suitable recommendation, via social prescribing, for the over 45 age group to increase their social network.

Unsurprisingly, over 65 year olds were less likely to interact with work colleagues at parkrun given the retirement age in Ireland of 65 at the time of the survey (Dewhurst & Diliagka, 2014). However, this group were the most likely to report interactions with other parkrun participants, making parkrun a potentially suitable intervention against loneliness in older adults. This is another area for further exploration.

4.5.4 Social opportunities at parkrun

To continue addressing the second research question social opportunities results were explored. In the current study feeling *part of the community* was the most commonly cited social opportunity at parkrun for both genders, all parkrun participation types and the two younger age categories (16-44 years and 45-64 years). Similar age group results were shown by Grunseit et al. (2017) where parkrun participants age 50-64 years had the highest scores for community connection. The same Grunseit et al (2017) study also noted that men were more likely to feel community connectedness at parkrun than women, a differentiation not observed in the current study. Further exploration of the mechanism for the community connection and how it impacts people of different ages and genders would be insightful.

4.5.5 Social capital and parkrun participation

The current study was not designed to measure social capital specifically. However, some of the social opportunities listed in this study can be used to assess the potential for developing the different types of social capital (bonding, bridging and linking). The social experiences provided by parkrun give people the opportunity to spend time with their existing social contacts (for example, friends and family members). Two social opportunities in the study *I have met new people of a similar background* and *I feel closer to my existing friends and family* provide situations to develop the type of bonding social

capital described by Putnam (2000). The survey responders over 65 years were one of the most likely groups to note social opportunities relating to bonding capital. This finding is particularly relevant for older participants who are at high risk of loneliness and social isolation (Dayson et al., 2021; Lindsay Smith et al., 2017). Participation in parkrun with the aim of increasing bonding social capital to support wellbeing would be a suitable social prescribing offering for this age group. The addition of volunteering to running or walking at parkrun also increased chance of bonding capital through these two social opportunities. This is another finding which can be applied to social prescribing or parkrun marketing, to highlight that taking part in volunteering at parkrun increases the chance of forming new social bonds.

Bridging social capital could be developed through the social opportunity *I have met new people of a different background,* which was noted by over a third of survey respondents. In a similar way to the options for bonding capital, the highest scores for this option were from runners/walkers who volunteer and the over 65 age group. This is a positive sign in relation to building social capital as previous research suggested that parkrun attracts people who already know other people at parkrun (Wiltshire et al., 2018; Wiltshire & Stevinson, 2018) creating a barrier to parkrun participation for those who are socially isolated. The results of the current study show that by interacting with people from different backgrounds, parkrun provides an opportunity for the development of relationships outside of the usual social circle, a feature of bridging capital. The question did not ask any detail about the types of different background or about the power balance in the relationships, so it is impossible to differentiate from this study whether it was bridging or linking capital that was being impacted. Future studies could continue to explore the impact of parkrun participation on these types of social capital as interventions which promote both types of social capital are thought to be influential on population health (Kim et al., 2006).

4.5.6 Details of social experiences at parkrun

The current study asked the respondents who they interacted with and what social opportunities they experienced at parkrun. There was no detail requested about the length or quality of the social interaction. In future studies it would be useful to explore the social interactions in more detail. Previous research has shown that brief social encounters, described as ‘casual sociability’ at parkrun by Hindley (2020), are potentially valuable

for increasing social capital and have been shown to have positive effects on mood and sense of belonging (Sandstrom & Dunn, 2014). Social relationships can also be classified as consisting of strong or weak ties (Granovetter, 1973; Moreton et al., 2023), both of which can provide social support and be beneficial for mental wellbeing (Moreton et al., 2023; Thoits, 2011). Again, this is an area which could be explored in more depth.

4.5.7 Isolation at parkrun

One finding of note was that not all survey respondents reported increases in social connections through parkrun participation. 5.9% of respondents stated they *did not interact with others* at parkrun. Younger participants (16-44 years old) and runners/walkers who do not volunteer were the most likely to choose this option, with no gender differences. These results add to the finding discussed above and also recognised by Grunseit et al (2017), that younger people are attracted to the physical activity element of parkrun.

Another notable finding was that 18.5% of survey respondents said parkrun had made them feel isolated. Females, younger participants and runners/walkers who did not volunteer were the most likely to report feeling isolated. Isolation is the opposite to social connectedness, is linked to loneliness, and could be a contributor to poor mental wellbeing (Dayson et al., 2021). One concept which could be linked to the reports of isolation are the descriptions of perceived cliques at parkrun events which lead to a less inclusive atmosphere (Bowness, Tulle, et al., 2020; Bowness et al., 2021; Fullagar et al., 2019). Cliques are an intense form of social network where members of the clique have strong ties but people outside of that group feel excluded (Chang, 2009) and can be considered as a form of bonding capital which leads to negative outcomes in society (Bourdieu, 1986; Nicholson & Hoye, 2008). It would be worthwhile investigating the reasons for these groups feeling isolated at parkrun as it is a potential barrier to continued participation.

4.5.8 Impact of volunteering on social experiences at parkrun

It is well established that volunteering is good for mental wellbeing for people of all ages (Lam et al., 2023; Laurence & Smyth, 2023) through increased social connection (Vannier et al., 2021; Whelan et al., 2023) with one study noting that people aged 40 years and older gained particular benefit (Tabassum et al., 2016). As parkrun relies on volunteers for its weekly operation, promoting the social benefits of volunteering could

be a potential marketing strategy. Understanding the social and mental impacts of volunteering at parkrun will also increase its utility as a social prescribing offering.

The results of the current study suggest that volunteering at parkrun, either as an activity in its own right, or in addition to running or walking, increased the likelihood of social interactions and opportunities among the survey respondents and reduced the risk of feeling isolated. Possible reasons for these results could include the case that people who are naturally more confident and sociable are more likely to sign up for volunteering (Sandstrom & Boothby, 2021; Stride et al., 2020). However, the results also suggest that volunteering at parkrun plays a role in the social element of parkrun participation. Volunteering at parkrun could be linked to the concepts of reciprocity and civic engagement described by Putnam et al (1993) which has a role in building social capital and could explain why the survey respondents who volunteer at parkrun (with or without running/walking) noted a wider range of social relationships and opportunities.

Another theory is that volunteering at parkrun increases the sociability of the event by reducing the feeling of isolation, as described in research from parkrun participants with mental health conditions in the UK (Ashdown-Franks, Sabiston, Stubbs, Atkinson, Quirk, et al., 2023). Analysis of the UK results of the Health and Wellbeing study explored the motivations of people who volunteered at parkrun without running or walking (Haake et al., 2022). While the most common response was to *give something back to the community* (45.8%), some of the responses focused on social motivations such as to *meet new people* (13.4%) and to *spend time with family* (17.5%) or *spend time with friends* (7.4%) with all of the social motivations being selected more often by people who solely volunteer at parkrun, when compared with those who volunteer alongside running or walking (Haake et al., 2022). The same study showed that 85.2% of volunteers noted a positive impact on the number of new people they meet. This was much higher than the original motivation for volunteering suggesting an unexpected outcome for the participants.

The results of the UK survey support the results described in the current study, in that participating in parkrun as a volunteer increases the chance of social engagement, when compared to running or walking (with or without volunteering). The volunteering aspect of parkrun can therefore be highlighted by social prescribers when recommending activities to clients, or for members of the community looking to reduce loneliness or isolation.

4.5.9 Link between mental wellbeing and social experiences at parkrun

The third research question was: What is the relationship between social interactions and social opportunities and mental wellbeing of parkrun participants in Ireland?

Due to the type of data collected on social interactions and social experiences it was not possible to perform a data analysis to answer this question. One way to address this research question in future studies would be to use a validate method of collecting data on social interactions or experiences such as the newly developed Systematically Observing Social Interaction in Parks process (Chen et al., 2023). Another strategy to address this research question would be to use a different social measure such as social capital, which has been linked to mental wellbeing in other studies (Helliwell & Putnam, 2004). Social capital can be measured using a scale such as the Sport Event Participation Social Capital Scale (Zhou et al., 2021).

Before repeating a large scale study with a set of validated scales to measure social experiences or social capital a pragmatic approach can be applied to this problem. This third approach to this research question, and the one which is adopted in the next chapter, is to use qualitative methods to complete a detailed exploration of the link between mental wellbeing and social experiences at parkrun in a subpopulation of participants. As the link between mental and social experiences at parkrun has not been explored previously, and is not confirmed by this secondary data analysis, the next practical step is to complete a qualitative study to understand whether social experiences at parkrun are supportive of mental wellbeing. This may give answers to the research question which could then be further explored in a wider population using a repeat survey and perhaps one of the validated scales described here.

4.5.10 Future research recommendations

The results of this cross-sectional study can be used as a guide for further research in the area of community initiatives for mental wellbeing. A cross-sectional study does not give an indication of the direction of the relationship between parkrun participation and mental wellbeing. It could be that only people who have good mental wellbeing will participate in parkrun, rather than there being a causational relationship. Measurement of mental wellbeing at the time of parkrun registration and repeated after a period of regular parkrun attendance would give a clearer picture of the impact of parkrun participation.

The design of the Health and Wellbeing survey questions did not measure the length or quality of the social experiences at parkrun. A brief verbal exchange or a lengthy conversation were both counted as one experience, although they could have potentially different impacts on the parkrun participant. Further consideration to the depth or quality of the social interactions and opportunities is recommended for future studies, perhaps by using interviews with parkrun participants to ask detailed questions about the type, length and value of each interaction and opportunity at parkrun.

The response *It has made me feel isolated* to the social opportunities question was chosen by 18.5% of survey respondents. This is a significant proportion of parkrun participants and appears to be a negative experience. Future research could explore this in more detail to determine the demographics of this group and why attending parkrun made these participants feel isolated. Information on whether this group are new to parkrun, or established participants would also be insightful. This would then allow recommendations for how parkrun could address this issue to reduce potential negative experiences at parkrun, a potential barrier to continued participation.

Future research could include a formal exploration of the development of social capital between parkrun participants, using a quantitative method such as social network analysis (Shin, 2021) which could then be compared against mental wellbeing scale results. This could contribute to our understanding the mental wellbeing benefits from parkrun and their possible link to social capital.

As described in the discussion section, further exploration of the reasons behind participants feeling isolated at parkrun are warranted. This could help our understanding of the barriers to parkrun participation, from a social perspective.

4.5.11 Policy and practice recommendations

The results of this study suggest the following policy and practice recommendations:

Volunteering at parkrun increases the chance of social experiences. Current parkrun participants should be encouraged to volunteer if they wish to increase their social connections. When marketing parkrun the benefits of volunteering as a way of increasing social experiences is one strategy which could be deployed. Social prescribers who are recommending parkrun should reinforce the message that volunteering at parkrun (with or without running or walking) is the key to building social connections and social capital.

When promoting the social elements of parkrun, care should be taken to ensure people who do not want to socialise do not feel excluded from the event. The choice of socialising should be emphasised to ensure autonomy for participants.

If social prescribers are recommending parkrun to reduce loneliness, it appears that the social aspect of parkrun is particularly suited for people over 45 years. Younger participants may be more focussed on the physical aspects of parkrun participation.

Consider interventions to reduce the number of people who feel isolated at parkrun (18.5% of survey respondents chose this option). These could include a buddy scheme for new participants or training for volunteers on how to promote inclusion at parkrun.

4.5.12 Limitations and considerations

As this study uses a cross-sectional design the causal link between mental wellbeing and parkrun participation cannot be proven. A longitudinal study building on this data will give further insights into this phenomenon, particularly if baseline data was recorded.

The study participants were older and less likely to be female than the whole parkrun population at the time of the survey. This should be considered when extrapolating these results to the wider parkrun population.

The social interactions and social opportunities questions were written by the survey design team and were not part of a validated scale. The majority of the social opportunities statements related to positive experiences (*I have met new people of a similar background, I have met new people of a different background, I feel closer to my existing friends or family, I have joined a sports club, I have joined a non-sports club, I feel part of my community*) with only two options for negative or neutral social experiences (*it's made me feel isolated, it has allowed me to spend time on my own*). This could have given an unbalanced result and did not allow for a detailed exploration of negative experiences at parkrun. Future studies should address this imbalance. Free text responses were allowed, but these were not included in this study; again, this is another area which may give more insight into any negative experiences at parkrun events. The data for this study was collected before the global COVID-19 pandemic. All parkrun events were paused during the pandemic in 2020 and have returned since 2021 (parkrun Ireland, 2021). A longitudinal study of parkrun participants reported a reduction in connection with others over the pandemic period, along with impaired physical and mental health and wellbeing

(Quirk et al., 2022) but the longer term impacts have not yet been researched. There is a growing body of research exploring the value that people have on social interaction since the pandemic and the impact of this on communities and physical activity (Bian, 2020; Bowe et al., 2022; Landmann & Rohmann, 2022; Stevenson et al., 2021). Care should be taken in interpreting and applying the results of this study in a post-pandemic environment, taking these factors into account.

The parkrun Health and Wellbeing survey was only distributed in English language. The official first language of Ireland is Irish (Office of the Attorney General, 2020) with 4.2% of the population speaking Irish daily outside of the education system (Central Statistics Office, 2017a). Some parkruns in Ireland operate in the Gaeltacht (Irish speaking areas) or a bilingual city (Galway) so any future surveys should be offered in both languages to include the Irish speaking population.

4.6 Conclusion

The study described in this chapter was a secondary data analysis of the parkrun Health and Wellbeing survey data for Ireland. Results showed that mental wellbeing of the survey respondents was higher than the population, particularly for older parkrun participants but causation was not established. Survey respondents who volunteered at parkrun, with or without also running/walking, were more likely to report social interactions and opportunities than those who did not volunteer. There were very few gender differences in social interactions and opportunities at parkrun. Older participants were more likely than younger parkrunners to report social experiences at parkrun. Overall, the results suggest that parkrun participation may provide a variety of social experiences. These experiences are potentially linked to the mental wellbeing of parkrun participants, but more research is needed to explore this. Future research could explore the depth and extent of social interactions and opportunities at parkrun and seek to understand why certain people feel isolated at parkrun events and similar community initiatives. Use of qualitative research to understand the experiences of one subgroup of parkrun participants is one strategy to explore these ideas further. The next chapter will describe a study to explore the social experiences of middle-aged men at parkrun in Ireland and understand how these experiences are related to mental wellbeing.

Chapter Five. Study Two. The social experiences of middle-aged men at parkrun in Ireland and their relationship with mental wellbeing

5.1 Overview of the chapter

As described in Chapter One, this thesis aims to explore the mental wellbeing of parkrun participants in Ireland and understand the factors which influence any changes to mental wellbeing following parkrun participation.

The research in this chapter will address the thesis objective to focus on one group of parkrun participants to understand more about their social experiences and mental wellbeing at parkrun in Ireland using qualitative methodology. The choice of population will be informed by the literature review and results of the secondary data analysis.

This chapter forms part of the mixed-methods design used in the thesis. Figure 8 shows the overall design with the study in this chapter highlighted.

Figure 8 Mixed methods process highlighting qualitative study

This study builds on the results of Study One (Chapter Four) which indicated that there may be a link between high mental wellbeing and parkrun participation, particularly for those of middle-age and older and that parkrun offers a place for social interactions and opportunities. However, as the cross-sectional design of Study One was not sufficient to link these outcomes further exploration was warranted. This chapter will describe a qualitative study with one subpopulation in Ireland. Middle-aged men were chosen as they are at high risk of poor mental wellbeing and are the focus of current Irish health policy. The study considered how social connections made through parkrun participation could be used to support mental wellbeing in middle-aged men in Ireland.

A short version of this chapter was published in Health Promotion International journal in 2024 (Dunne et al., 2024).

5.2 Introduction

The study described in Chapter Four was a secondary data analysis of a cross-sectional survey of parkrun participants in Ireland. The results highlighted that mental wellbeing of the survey respondents was higher than the population, particularly for older parkrun participants aged 45 years and over. Causation was not established, and a bi-directional relationship should be considered: is parkrun attractive to older people who already have good mental wellbeing? The results also suggested that volunteering at parkrun, with or without running/walking was linked to social interactions and social opportunities, with older people more likely to report social experiences at parkrun. There were very few gender differences in the survey results. Social experiences at parkrun are potentially linked to the mental wellbeing of parkrun participants but further exploration is required. The study in this chapter aims to research this link in more detail using qualitative methods.

The cross-sectional survey results suggested age differences in mental wellbeing and social connections at parkrun. It makes sense therefore to choose a group of older parkrun participants to investigate for this qualitative study. A mixed gender study could have been completed. However, from looking at extant literature it appears that there are gender differences in the social experiences at parkrun, and in how community initiatives can be provided for different genders. These differences are discussed in the following section, with a justification for why the sub-population of middle-aged men in Ireland was chosen for this study.

5.2.1 Mental wellbeing of men in Ireland

Men's mental wellbeing is a national policy priority in Ireland due to the gender gap in life expectancy and mortality by suicide (Department of Health, 2024; Health Service Executive, 2016). In a measure to address this issue the government of Ireland introduced the world's first men's health promotion policy in 2016 (Health Service Executive, 2016). When researching health promotion in Ireland it is therefore prudent to consider the needs of men and the impact of any health promotion practice or policy on men's mental

wellbeing. These considerations should include the social and community determinants of mental wellbeing.

5.2.2 Social and community determinants of mental wellbeing

Chapter One detailed the social and community determinants of mental wellbeing. These include social support (Cohen & Wills, 1985) and social capital (Putnam, 2000). Social support is generally understood to refer to behaviour which assists a person to achieve a specific goal (Van Luchene & Delens, 2021). It can relate to an interaction between two people or can include interactions between people in a wider social network (Cohen & Wills, 1985; Shumaker & Brownell, 1984). Social capital is the worth of interpersonal relationships taking into account the size of network of social connections and how much value each connection has (Bourdieu, 1986). Social capital is a closely linked concept to social support (Beausaert & Kyndt, 2023; Leal et al., 2011). A person who has a wide network of friends and acquaintances can use that resource when emotional or practical support is needed. Conversely poor social support, low levels of social capital, loneliness and narrow social networks can be contributing factors in the development of mental health conditions (Lee et al., 2021; Pearce et al., 2023).

There are many gender differences when considering the social determinants of mental wellbeing. Comparing close friendships, men are less likely, than women, to have a best friend, and are more likely to have a wider circle of casual acquaintances (Pearce et al., 2021). Men are more likely to socialise in a group, whereas women prefer one-to-one interactions (David-Barrett et al., 2015). Men's level of social contact often reduces throughout middle age whereas women's does not (Fischer & Beresford, 2015). When discussing mental health men often talk side by side while involved in an activity, rather than talking face to face (Sharp et al., 2022). Many men do not think about mental wellbeing at all until they have clear symptoms of mental health conditions (O'Donnell & Richardson, 2020) while even those with symptoms may delay seeking help, possibly due to traditional ideas of masculinity (WHO, 2019).

5.2.3 Health promotion for mental wellbeing in men

Using an evidence-based approach to health promotion to support the mental wellbeing of men in Ireland there are several recent studies of note. Using sports-related venues to offer free activities that happen outside the typical working hours are attractive

propositions for men who are sometimes labelled as “hard to reach” (L. Kelly et al., 2019; Pringle et al., 2014) although the term “under-represented” may be more appropriate to use. O’Donnell and Richardson noted that men from marginalised groups in Ireland are shy about engaging with groups which are outside the traditional masculine areas of the workplace, pub or sports (O'Donnell & Richardson, 2020). Therefore, an activity which combines a physical activity with social opportunities could be an attractive option for middle aged men in Ireland. Physical activity groups that older men successfully engage with include tai chi, dancing (often with wives), and table tennis (Boulton et al., 2018). A qualitative study which investigated why men over 50 engage with these activities found that being enjoyable, accessible and sociable were motivators for engagement rather than the physical health benefits (Boulton et al., 2018). Flexibility in attendance and payment options were facilitators for engagement in the activities (Boulton et al., 2018).

5.2.4 parkrun participation for men’s mental wellbeing in Ireland

The community initiative parkrun combines running, walking or volunteering with social contact. The link between social connections made at parkrun and mental wellbeing of participants has not been fully established. Research exploring the social experience of parkrun participants has consistently reported positive effects for social interaction, social capital and connections (Sharman et al., 2019; Wiltshire & Stevinson, 2018) but little research has explored the mechanisms through which parkrun can influence mental wellbeing (Grunseit et al., 2020). One study did note that men at parkrun describe a change in wellbeing related to community connectedness (Grunseit et al., 2017), suggesting that parkrun may be a suitable setting for men to form social connections which could in turn improve mental wellbeing. Research in Ireland, including the results described in Study One (Chapter Four) suggests a possible link between social factors at parkrun and mental wellbeing (Dunne, Bullas, et al., 2023; Haake et al., 2019a). To date there has been no detailed exploration of these phenomena in an Irish setting, or with a focus on middle-aged men.

The study detailed in this chapter aims to explore the relationship between mental wellbeing and social experiences for middle-aged men in Ireland with this research question:

What is the social experience of parkrun participation for middle-aged men in Ireland and how is this related to mental wellbeing?

5.3 Method

The method chosen to answer the research question in this study was an interview study with data analysed using reflexive thematic analysis. The reasons for the choice of method and the processes followed are detailed in this section.

Two terms are defined for this study:

1. Participants: people who run, walk or volunteer at parkrun.
2. Interviewees: men who took part in the current study.

5.3.1 Ethical considerations

This study involved primary data collection, using site visits to parkrun events in Ireland for recruitment, online recruitment and online interviews with parkrun participants. Ethical considerations for this study included:

- Participant wellbeing. Verbal and written consent was obtained from the participants before each interview. As topics around mental wellbeing and (if the participant introduced the subject) suicide were discussed participant wellbeing was paramount. Written information regarding emergency services and mental health helplines were given to each participant immediately after the interview. The interviewer was a trained healthcare professional with 20 years' experience working in primary care and acute mental health services. She took care to approach sensitive topics in a safe manner and was prepared to stop the interview in the event of any distress from the interviewee and refer to the appropriate healthcare service.
- Lone working. The researcher followed SHU lone working guidelines and took into consideration her own concerns about meeting unknown male interviewees in unfamiliar spaces (Lefkowich, 2019). Online interviews were used to reduce this potential risk (whether objective or subjective).
- Researcher wellbeing. Provision of regular supervision for the researcher and access to SHU student wellbeing services was available.
- Data management. A data management plan was written and followed for the study. Advice from SHU ethics committee was sought regarding audio and video recording of the interviews and associated data storage, including cloud storage.

Copies of the participant debrief sheet and risk assessment for Study Two can be found in Appendix 5.1 and 5.2.

Ethical approval for this project was granted by Sheffield Hallam University on 16/09/2022 (Ethics Review ID: ER42513594, copy in Appendix 5.3). Approval for the study was also given by the parkrun research board on 05/09/2022 (certificate in Appendix 5.4).

5.3.2 Qualitative research

The term qualitative research can be thought of as an umbrella term which describes a range of research methods (Braun & Clarke, 2022) but the common feature is that qualitative research aims to describe and understand the meaning of a phenomenon such as attitude or behaviour rather than measure it (Green, 2018; Pyo et al., 2023). In qualitative research it is not always necessary to decide on a theory and write a hypothesis before collecting data (Pyo et al., 2023). In this thesis the research aims and objectives had not been fully answered using quantitative methods and the theory to explain the possible link between mental wellbeing at parkrun and social experiences was not determined. Qualitative methods were therefore chosen to understand more about this link and to discover which theories might be applied. The sampling process, participant recruitment and data collection for this study will now be described in turn.

5.3.3 Sampling

This section will describe some considerations when choosing a sample for a qualitative study, then describe how these were applied to the current study. In qualitative research purposive sampling is often used to select the study participants (Pyo et al., 2023) and sample sizes are relatively small compared to quantitative studies which require large data sets to allow statistical analysis. Historically, qualitative studies have been criticised for having weak justifications for small sample sizes (Malterud et al., 2016). The term *saturation* is often misused to justify sample size (LaDonna et al., 2021) but this term is closely linked to grounded theory methodology and should not normally be used outside that context (Vasileiou et al., 2018). Malterud et al (2016) proposed a new strategy of information power for determining sample sizes for interview studies, using pragmatic principles. This strategy has since been recommended by Braun and Clarke (2022) for studies using reflexive thematic analysis.

Information power is determined by five elements which combine to estimate the approximate sample size which is suitable for a particular study (Malterud et al., 2016). This is useful when planning a study, for example if applying for ethical approval or funding, and can be adjusted in a pragmatic manner as the study proceeds. The five elements from Malterud (2016) are listed and applied below, labelled a-e:

a. Study aim

The aim was broad, to understand the social experience of parkrun participation for middle-aged men in Ireland and how these experiences were related to mental wellbeing.

b. Sample specificity

The target population was middle-aged men aged 45-64 who attend parkrun in Ireland. As the participants were drawn from across Ireland and a mix of participant types was required (runners, walkers and volunteers, new and established participants, a mixture of ages and ethnicities). Purposive sampling using maximum variation sampling (Clark et al., 2021) was used to ensure a variety of participant demographics and experiences. These factors contributed to sample specificity being dense.

c. Established theory

Established theory was considered at the start of the study but only loosely applied to allow for concepts introduced by the interviewees.

d. Quality of dialogue

The quality of dialogue was strong. The interviewer was a mature, confident interviewer with over 20 years of working with the general public in healthcare settings. She was embedded in the parkrun community and understood terminology and operational characteristics of parkrun.

e. Analysis strategy

The analysis strategy was cross-case reflexive thematic analysis.

These five elements from Malterud (2016) were continually assessed as the study progressed and sampling continued until the PhD candidate was satisfied that information power was satisfactory, while recognising that this method does not give a precise calculation for sample size (Braun & Clarke, 2022). Throughout participant recruitment changes were made to the purposive sampling to ensure newer parkrun participants were included, and also an attempt was made to recruit participants who were seeking

international protection, although this was not successful, mainly due to the target age of the study population and limitations on time for study completion. The sample population was men aged 45-64 years who have participated as a runner, walker or volunteer in at least one parkrun in (the Republic of) Ireland. Purposive sampling was used to attract a range of participants from across Ireland, from rural and urban settings and to ensure men representing the full age range of the study were included. Advice from parkrun Ireland country manager Matt Shields was obtained to select suitable parkruns to approach for participant recruitment. Following the first 20 interviews it was noted that all the participants were well-established parkrun participants who had completed more than 10 events, the definition used by Morris and Scott (2019) for an experienced parkrunner. To ensure newer parkrun participants were included in the study the PhD candidate visited a newly established parkrun in Mountbellew and gave recruitment information at a First Timer's Briefing at an established parkrun (Knocknacarra) in early January 2023 to capture the new year beginners. An adapted recruitment poster was also designed to target new parkrunners on Facebook. It was also noted that all the participants were white Europeans. To address this the recruitment materials were posted on social media for the Sanctuary Runners, a group who run with refugees and people who are seeking international protection. Unfortunately, no men from this population volunteered to participate in the study. The full recruitment process is described in the next section.

5.3.4 Participant recruitment

Participant recruitment took place from 21/09/2022 to 09/02/2023 via parkrun event Facebook pages and in-person visits to parkrun events across Ireland shown in Table 8. At the time of the study the parkrun charity used Facebook as their main social media channel, with each parkrun site having a dedicated Facebook page, so this was used for purposive recruitment. When an in-person visit took place an announcement was also added to the Facebook page for the relevant parkrun site. During each site visit the PhD candidate gave a short verbal presentation before the event and used posters and printed flyers at the finish line to promote the study (copy in Appendix 5.5). The PhD candidate also volunteered as a barcode scanner at the finish area to allow time to speak to potential study participants and answer any questions.

Table 8 Recruitment of interviewees from parkrun in Ireland using social media and parkrun site visits

Date	parkrun site	Type of recruitment	Features of parkrun location	Location in Ireland
21/09/2022	Knocknacarra, Galway city	Facebook	City suburb	West
21/09/2022	Oranmore, Co Galway	Facebook	Village close to Galway city	West
21/09/2022	Portumna, Co Galway	Facebook	Rural town	Midlands
21/09/2022	Coole, Co Galway	Facebook	Tourist attraction, rural	West
21/09/2022	Clonbur Woods, Co Galway	Facebook	Rural, border of Co Mayo	West
21/09/2022	Oughterard, Co Galway	Facebook	Rural town	West
24/09/2022	Knocknacarra, Galway city	In person	City suburb (home parkrun)	West
08/10/2022	Oranmore, Co Galway	In person	Village close to Galway city	West
12/10/2022	Lough Key, Co Roscommon	Facebook	Rural community	North
15/10/2022	Lough Key, Co Roscommon	In person	Rural community	North
11/11/2022	Mountbellew, Co Galway	Facebook	Rural town - new parkrun	West
21/11/2022	Illaunanagh, Co Clare	Facebook	Town - new parkrun	West
06/12/2022	Poppintree, Dublin city	Facebook	Capital city	East
07/01/2023	Knocknacarra, Galway city	In person	City suburb	West
09/01/2022	Castletown, Co Kildare	Facebook	Commuter town for Dublin	East
10/01/2023	St Annes, Dublin city	Facebook	Capital city	East
16/01/2023	Ballincolling, Cork city	Facebook	Large city	South
21/01/2023	Ballincolling, Cork city	In person	Large city	South
30/01/2023	Sanctuary Runners Galway	Facebook/ Twitter	Ireland	National

When a potential participant contacted the study, using email or the QR code, a participant information sheet and consent form were supplied by email (copies in Appendix 5.6 and 5.7). If consent was given, the participant completed a short demographics questionnaire using Qualtrics survey software. Demographics included date of birth, Eircode (Irish postcode) and parkrun participation type (runner/walker, runner/walker/volunteer or volunteer only). A copy of the questionnaire can be found in Appendix 5.8. A mutually agreeable time was arranged for an online interview using Microsoft Teams.

Recruitment ceased when the lead researcher (AD) was satisfied with the information power of the interview data (Malterud et al., 2016) according to the five elements detailed in section 5.3.3.

5.3.5 Data collection using online interviews

Interviews were conducted online using Microsoft Teams video conferencing software. The advantages of using video conferencing are the ease of interviewing people across a large geographical area (Archibald et al., 2019; de Villiers et al., 2022) saving time and money and also decreasing public health risk (for example during a pandemic) (Lobe et al., 2020). In this study the participants lived across the whole of Ireland including remote rural areas which would have been impractical to reach to interview in person. Internet connection, suitable hardware and a private space is required to participate in online interviews (Lobe et al., 2020) but this did not cause any practical problems during the current study. In the early days of online communication for research there were concerns about problems with building rapport between the interviewer and interviewee, but this does not seem to be an issue in more recent times (Archibald et al., 2019; de Villiers et al., 2022) and did not appear to be a concern in the current study, possibly as both have now gained familiarity with this method of communication during the COVID-19 pandemic years (Lobe et al., 2020). Although several video conferencing platforms are available (Lobe et al., 2020) Microsoft Teams was chosen for this study following advice on data storage and security from Sheffield Hallam University ethics committee, and taking into consideration free and accessible access for interview participants in Ireland. Audio from each interview was recorded on an encrypted Dictaphone for all participants. Those who gave consent for video recording also had their Teams video recorded.

5.3.6 Semi-structured interviews for data collection

This study used semi-structured interviews as the method of data collection. This commonly used method in qualitative research (Clark et al., 2021) consists of one interviewer asking a list of questions to one interviewee at a time. The method is appropriate for answering complex social-behavioural research questions (Adeoye-Olatunde & Olenik, 2021) and is suitable for use in health research (Kallio et al., 2016; McGrath et al., 2019). The interview script was designed by the PhD candidate and contained open-ended questions and prompts to encourage detailed answers from the interviewee (Clark et al., 2021; Kallio et al., 2016). The order of questions was loosely pre-determined but the interviewer has flexibility to follow interesting topics if they arise during the interview or rearrange questions to ensure a good flow of conversation (Adeoye-Olatunde & Olenik, 2021; Clark et al., 2021). For this study the semi-structured interview questions were designed to be exploratory in nature, allowing for the interviewer to explore topics around mental wellbeing and social experiences at parkrun. Putnam's definition of social capital (Putnam et al., 1993) and Cohen's concept of social support (Cohen & Wills, 1985) were used to design the questions and prompts.

A consideration when planning interview studies is the skill of the interviewer, as this contributes to the quality of the data collected (Clark et al., 2021). Healthcare professionals. including the PhD candidate, have training and experience in interviewing patients in a clinical role, for example taking medication histories (McGrath et al., 2019). Additional training and experience in conducting research interviews is needed to successfully complete semi-structured interviews (McGrath et al., 2019) with a focus on listening to the interviewee, thinking of appropriate prompts and steering the direction of the interview (Clark et al., 2021). In the case of the PhD candidate she underwent interviewer training as part of her MA in Health Promotion and conducted a study using semi-structured interviews for her minor dissertation (Dunne, 2019). The interview questions and prompts used in the semi-structured interviews in this study can be found in Table 9.

Table 9 Interview questions and prompts for semi-structured interviews with men aged 45-64 years attending parkrun in Ireland

Opening questions, follow up questions and prompts
1. Tell me about your first time at parkrun.
1a, Was there anything that put you off from attending before your first time?
1b. Did you attend parkrun on your own?
1c. What were your first impressions?
1d. How did you feel afterwards?
2. What do you understand by the term mental wellbeing?
2a. WHO define mental wellbeing as "a state of positive mental health which is vital for quality of life?
3. Does parkrun participation have any impact on your mental wellbeing? Tell me more about that.
4. Do you think there is anything that can be changed about parkrun to support good mental wellbeing?
5. Who do you usually interact with at parkrun? This can be people you attend with, or meet at parkrun.
5a. Provide an example of an interaction.
6. In terms of relationships, what opportunities has parkrun opened up for you?
6a. Prompts "Meeting new people" or "Feeling part of the community".
7. Could you describe a time when you had a positive/good interaction with someone else at parkrun?
8. Have you ever had any negative/bad interactions with other people at parkrun?
9. Do you ever meet parkrun people outside of the event? Is it a planned meeting or accidental?
9a. Does this have any impact on how you feel about your sense of belonging?
10. Have you linked with a new parkrunner acquaintance via any types of social media?
11. Is there anything else you would like to add about parkrun participation and mental wellbeing?

Following the recruitment process detailed in section 5.3.4 the study attracted expressions of interest from 64 people. Participant information sheets were emailed to each interested person, along with an online consent form for completion before any further contact was made. The online consent form was completed by 49 men; seven of these men did not

reply to emails and text messages from the interviewer to organise the online meeting and one did not consent to any form of interview recording. A total of 41 interviews took place between 24/09/2022 and 16/02/2023 The interviews were between the PhD candidate and the interviewee only. The interviewer used Microsoft Teams on a laptop from a home office and the interviewees used their own choice of location, either their own home or workplace office. A single interview was conducted with each interviewee, with no repeat interviews. During, and immediately after, each interview the interviewer made handwritten notes and reflections on the content of the interview in a diary.

Two interviews were not included in the final data set as it became apparent during the interview that the sampling criteria were not fully met. One was with a participant who lived in Northern Ireland (part of the UK). The second was with a man who had observed parkrun events but had never participated as a runner, walker or volunteer. The sampling criteria were included in the online consent form but were seemingly overlooked by the interviewees during completion. One way of ensuring the sampling criteria are met would be for the interviewer to verbally repeat the online consent form with the participants, to ensure the participants had taken part in at least one parkrun and currently lived in Ireland. Collecting data such as parkrun barcode number and Eircode would also have ensured each interviewee met the sampling criteria. After excluding these two interviews the final data set consisted of 39 interview transcripts.

Live auto-transcription on Teams was used during each interview, with transcription manually checked by AD. Names, specific locations and any identifiers were redacted from the transcription before emailing to each participant for final approval. A debrief information sheet containing the contact details for mental health support services was sent to each participant after the interview.

As discussed in Chapter One there are many definitions of mental wellbeing and therefore potential for confusion between this term and mental health or mental illness. In the semi-structured interviews in this study mental wellbeing was a key concept for discussion so it was important to ensure the interviewees had a clear definition for this term at the start of each interview. To assess the interviewees understanding the term the interview script (Table 9) contained the question:

What do you understand by the term mental wellbeing?

For this study the definition used by the WHO was used which was paraphrased in the interview script as “a state of positive mental health which is vital for quality of life.” (WHO, 2022c)

If the men did not describe mental wellbeing in a way which matched this definition the interviewer explained the meaning of mental wellbeing in simple language before continuing with any further questioning.

As the answers to the question *What do you understand by the term mental wellbeing?* were varied and potentially interesting they were extracted and analysed using qualitative content analysis. A brief report of this study can be found in Appendix 5.9. The results were communicated as a conference presentation at the School of Nursing, Midwifery and Health Systems Conference in Dublin, Ireland, 17th to 18th August 2023 (Dunne, Quirk, et al., 2023).

5.3.7 Reflexive thematic analysis

Data from the semi-structured interviews was analysed using reflexive thematic analysis (Braun & Clarke, 2022). This method developed from the thematic analysis method described by Braun and Clarke (2017) with emphasis given to researcher reflexivity and analysis of a large (>10), diverse set of cases (Braun & Clarke, 2019, 2021). Reflexivity will be further described in section 5.3.9. This method was chosen to analyse the interview data because it is not linked to any particular theory or discipline (Braun & Clarke, 2022), making it suitable for health promotion research which can draw on theories from multiple disciplines (Wills, 2023). It is a method commonly used in sport and exercise research (Braun & Clarke, 2019) and mental health research in areas such as counselling and psychotherapy (Braun & Clarke, 2021). The method allows for inductive coding, meaning the codes are developed after engaging with the data rather than being pre-determined (Braun & Clarke, 2022). As the study design was guided by the theories of social capital and social support, but not fixed on these theories, inductive coding was used to ensure a range of theories could be used to interpret the data. Reflexive thematic analysis uses non-positivist values and embraces researcher subjectivity (Braun & Clarke, 2023). As the researcher was embedded in the parkrun community before the start of the study this choice of method embraced this as an advantage rather than a limitation which could lead to bias, as it would in a post-positivist approach (Braun & Clarke, 2021, 2023). In qualitative research there is not always one perfect method, with several approaches

often being suitable to answer the research question (Braun & Clarke, 2021). Applying a pragmatic approach, the researcher had prior experience and training in the use of reflexive thematic analysis and there is a large body of support materials, so the method of reflexive thematic analysis was chosen for this study (Braun & Clarke, 2021).

Reflexive thematic analysis has six phases (Braun & Clarke, 2022). These are described in detail in the guide by Braun and Clarke (2022) which was followed closely for this study. A brief overview of the method, as applied to the interview study used in this thesis, is given below, with additional references where appropriate. It is important to note that the six phases combine in an iterative process and movement forwards and backwards through the steps is encouraged and was undertaken during this study (Braun & Clarke, 2022).

Phase one: data familiarisation

Data familiarisation consists of both deep immersion in the data and critical engagement with the data. Deep immersion can begin during the interview process if the researcher is also the interviewer (as in this study) or can start when the researcher receives the transcripts and audio from the interviews. Active engagement is encouraged, reading the transcripts several times, listening to the audio from the interviews and making notes about the data. Critical engagement involves taking a step back from the individual interviews and thinking about patterns that might exist in the dataset as a whole. The researcher should ask themselves questions about the content of the data to understand the worldview of the interviewees and reflect on their own perspectives and how this might impact interpretation (Braun & Clarke, 2022). The PhD candidate who completed this research was familiar with the data as she had conducted the interviews herself, completed the transcriptions and had written a reflexive diary. Each script was read once before coding to ensure full familiarisation.

Phase two: coding

In reflexive thematic analysis, repeated ideas or concept from the data are given a unique code. Coding can be inductive (codes coming from the data) or deductive (partially determined in advance from a theory or framework). The research question for the current study was broad so inductive coding was used. The codes can be semantic (based on the

interviewees words, overt meaning) or latent (implicit or abstract meaning) (Braun & Clarke, 2022).

In this study The PhD candidate was the sole coder, a recommended feature of this type of analysis (Braun & Clarke, 2022). Due to the relatively large number of transcripts NVivo 12 (Lumivero) was used as a tool to manage the coding process but the automatic coding function was not used; all codes were generated by the researcher. Transcripts were initially coded in order of date of interview. Handwritten notes from the interview diary were also read at this stage and were used to inform the coding if appropriate. A second round of coding organised the transcripts in reverse order by date. The importance of changing the order is to ensure patterns in the data are not missed (Braun & Clarke, 2022).

Inductive coding was used, with no predetermined coding or framework in place. This was to ensure all possible theories for the possible association between mental wellbeing and social experiences at parkrun were considered. Although the interview script was written with theories of social capital and social support in mind, the PhD candidate wanted to be open to other theories becoming apparent during the data analysis which might oppose this hypothesis.

Phase three: developing initial themes

When at least two coding rounds have been completed the codes were grouped into central organising concepts (themes). Using mind maps to visualise patterns in the data and look for links between themes can be useful at this stage (Braun & Clarke, 2022; Whiting & Sines, 2012). Two examples of the mind maps drawn by the PhD candidate during data analysis can been seen in Figure 9 and Figure 10. The codes on NVivo were grouped into the themes proposed in the mind maps.

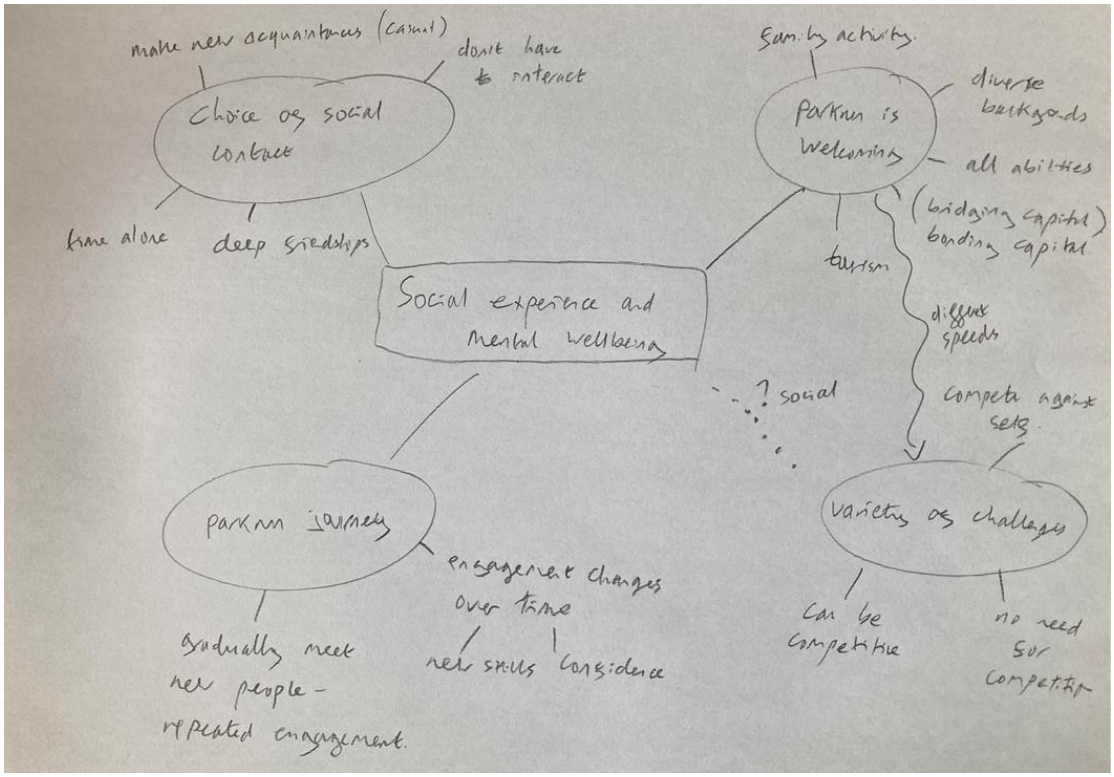


Figure 9 Mind map showing candidate themes during the early stages of data analysis process

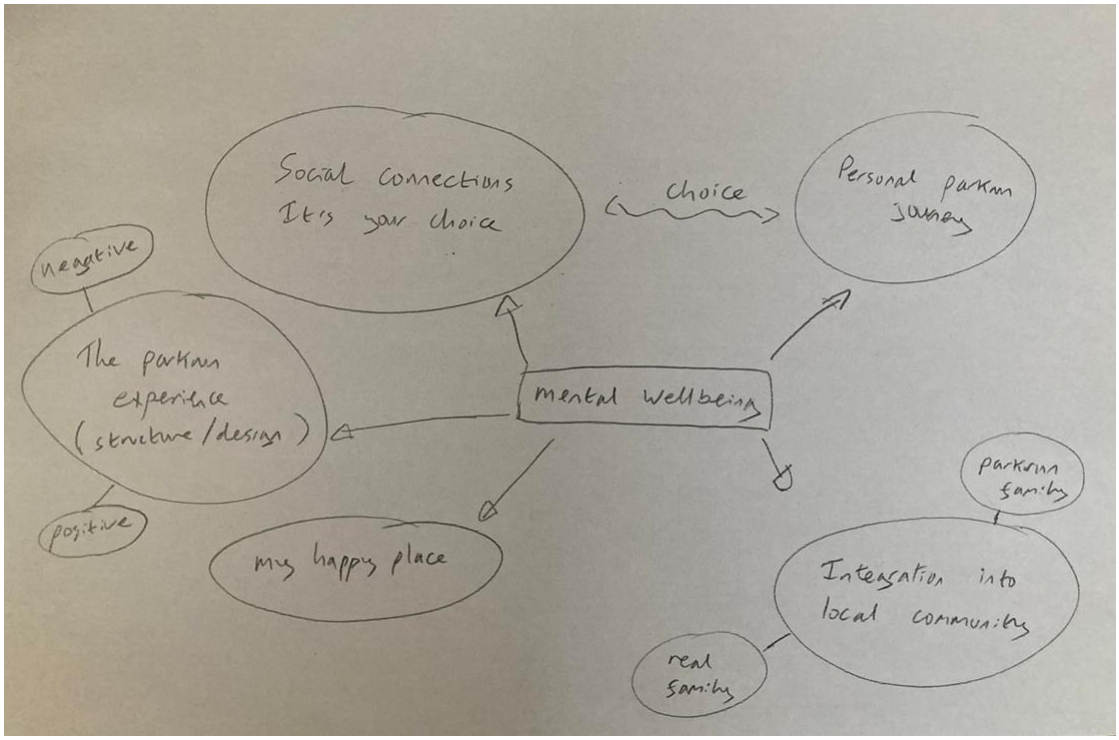


Figure 10 Mind map showed developed themes in the later stages of data analysis process

Phase four: reviewing and developing themes

After the candidate themes had been developed, the PhD candidate continued to regroup, revise and reorganise codes until they were content that the groupings answered the research question and reflected the content of the data (Braun & Clarke, 2022). It is important to avoid the use of topic summaries at this stage: the themes should reflect the story of the data, not be a simple grouping of similar topics (Braun & Clarke, 2023). The PhD candidate did begin to use topic summaries while developing initial themes but realised the error early in the process and revised the codes correctly into themes. An example is the use of the topic summary *tourism* containing all codes where visiting different parkruns was mentioned. This was later developed into a sub-theme of *engagement with parkrun changes over time* which included descriptions of the social interactions when visiting different parkrun sites.

Phase five: refining, defining and naming themes

When the final themes were decided, a name which captured the concept of each theme was chosen, a short description of the theme was written and example quotes to illustrate each theme were chosen (Braun & Clarke, 2022). The final themes are shown in the results section 5.4.

Phase six: writing the report

There are two styles of report writing for reflexive thematic analysis. The first uses the style adopted in quantitative research reports; the results are given then a separate section contains the discussion. The second style involves a combined results and discussion section, where each theme is described then discussed in relation to theory or previous research. The current study uses the first style. Report writing is an important part of the iterative process in reflexive thematic analysis. The researcher may choose to change themes or theme names at this stage as they continue to engage with the data (Braun & Clarke, 2022). Following the recent guidance of Braun and Clarke (Braun & Clarke, 2024) this chapter did not use a reporting checklist such as the Consolidated Criteria for Reporting Qualitative Studies (COREQ) (Tong et al., 2007), although these are sometimes used when reporting qualitative findings. The results and discussion can be found in sections 5.4 and 5.5.

5.3.8 Critical friends

A feature of reflexive thematic analysis is that coding can be completed by one researcher and their subjective perspective is an essential part of the method (Braun & Clarke, 2022). As the PhD candidate had completed all interviews and parkrun site visits herself, it was decided that she would complete all coding as a sole coder. However, at the time of theme development it was helpful to have researchers from outside of the project to discuss the themes with, to ensure they were correctly capturing the key concepts and to improve reflexivity. This process is called using a critical friend (Costa & Kallick, 1993; Smith & McGannon, 2018). The process has been used as part of reflexive thematic analysis in education research (Winstone & Carless, 2021) but is not a named phase in Braun and Clarke's (2022) reflexive thematic analysis. Two physical activity researchers with experience of qualitative data analysis from Sheffield Hallam University took the role of critical friends for this study. In individual sixty minute online meetings the candidate themes were described by the PhD candidate and discussed and challenged by the critical friends. This process helped to clarify thoughts and give confidence in the themes. Note that the critical friends did not view any interview transcripts or complete any coding. The final decision on themes was made by the PhD candidate. This process was useful because presenting the candidate themes to people external to the project encouraged clear thought processes and confidence in the final themes shown in the results section 5.4.

5.3.9 Reflexivity

Reflexivity is a form of self-appraisal (Berger, 2015) which acknowledges that qualitative research is influenced by the researcher who undertakes it (Braun & Clarke, 2022; Watt, 2007). The researcher is said to be the instrument of research, adding subjectivity to the data collection and analysis (Dodgson, 2019; Watt, 2007). Reflexivity involves a researcher being aware of their own gender, life experience, professional role and prejudices and reflecting on how those experiences form the lens through which the results are interpreted (Berger, 2015; Braun & Clarke, 2022; Dodgson, 2019; Watt, 2007). Interviewees may be more comfortable sharing experiences with a researcher that understands their circumstances, or who they perceive to be sympathetic (Berger, 2015). The worldview of the researcher will influence the way they filter and interpret the information being provided by the interviewee and transform this information into

findings (Berger, 2015). Taking these aspects into account during a study means that reflexivity can enhance the credibility of research findings, adding rigour to the research method (Berger, 2015).

Including a discussion of reflexivity to a qualitative study report allows the reader to understand the researcher's positionality and interpret the results in that context (Dodgson, 2019). One concept which can be considered as part of the reflection is whether the researcher is an insider or outsider in the context of the research setting (or both) (Berger, 2015; Dodgson, 2019). A reflexive diary written by the researcher during the research process is an important tool for reflexivity, capturing ideas and interpretations at the time of data collection and interpretation (Braun & Clarke, 2022; Lefkowich, 2019; Watt, 2007). A summary of the diary can be included in the final written report (Dodgson, 2019). Notes on the reflective practice relating to Study Two are included in the following section 5.3.10.

5.3.10 Reflection on Study Two

The researcher could be considered as simultaneously an insider and outsider in this study. She is the same age as the interviewees and is an experienced parkrunner. In these ways she is an insider. This allowed her to quickly build rapport with the interviewees and to understand the terminology associated with parkrun participation. Some studies have described parkrun in a similar way to a religion or cult with its own clothing (milestone t-shirts), terminology (parkrun tourism, first timer's briefing) and a feeling of being within, or excluded from, the community (Bowness et al., 2021). As the researcher was embedded in the parkrun community she was able to understand the terms used and the situations at parkrun described by the men. This is useful in qualitative research as it allowed an in-depth understanding of the subjects discussed during the interview (Berger, 2015) but caution was applied to ensure the researcher did not project her own experiences onto the interviewee's stories.

Some of the interviewees were born outside of Ireland and moved to Ireland as an adult, in a similar way to the researcher, allowing an insider perspective with this subgroup of interviewees and an understanding of the challenges of building relationships as a newcomer to the country (Berger, 2015). When talking to men who grew up in Ireland it was insightful for the researcher to reflect on their perspectives on the importance of building new relationships at parkrun.

The researcher is a different gender to the participants which may put her in the role of an outsider (Lefkowich, 2019). A female researcher who interviews men can be at an advantage as the interviewees may feel less threatened and be more likely to describe their feelings (Lefkowich, 2019) and this is particularly important in the current study which discusses the subject of mental wellbeing. However there can be disadvantages to this gender imbalance in relation to traditional roles of power and inequality (Lefkowich, 2019) which the researcher must reflect on and include in any data interpretation.

The interviews were all conducted by the PhD candidate, a female pharmacist and part time PhD student with over 20 years of patient-facing clinical experience in community and hospital settings. She also has university lecturing experience. In addition to her pharmacy degree, she holds an MSc in psychiatric pharmacy practice and an MA in health promotion. The MA by minor dissertation included an interview study with healthcare professionals which was analysed using thematic analysis (Braun & Clarke, 2006).

The interviewees were all parkrun participants. The 9 interviewees from Knocknacarra parkrun (one of the recruitment sites) had met the PhD candidate briefly at previous parkrun events but did not have a confiding relationship with her prior to study commencement. At the start of each interview, all 39 interviewees were told that the interviewer was a researcher who had an interest in mental health and wellbeing. If it felt appropriate during the interview she described her participation in parkrun events as a runner and volunteer and disclosed her background as a pharmacist.

With regards to the positionality of the PhD candidate, the following reflections were considered. The researcher is in the same age category as the men interviewed, although a different gender. She moved to Ireland as an adult so has experienced Ireland as a newcomer. English is her mother tongue, and this was the language used for the research (while acknowledging that Ireland is a bilingual country). She has run or walked over 100 parkruns and has volunteered over 70 times, visiting more than 25 parkrun sites. She feels that she is embedded in the parkrun community and has undertaken many volunteer roles including Run Director. The researcher noted that she should be mindful of her position as a keen and confident parkrunner and that this may influence her interpretation of the data. She felt that her deep understanding of how parkrun operates enabled her to establish rapport with the interviewees and understand their terminology and perspectives.

5.3.11 Public Patient Involvement and Engagement

As discussed in Chapter Three, stakeholder consultation, including members of the public, is important when undertaking health promotion research. For this study recruitment materials and a draft semi-structured interview script were reviewed by parkrun participants and members of the public. An advisory panel from Ireland was assembled by the PhD candidate to represent the population which would be sampled for the research. The five panel participants included a parkrun Ambassador, male and female parkrunners and a regular runner (but not parkrunner) with lived experience of a mental health condition. The PhD candidate hosted a one hour Zoom meeting on 09/08/2022. The advisory panel members were sent the recruitment poster, participant information sheet and semi-structured interview script in advance of the meeting. Each was discussed in turn during the meeting and feedback was given to improve the clarity of the materials. Full details of the meeting can be found in Appendix 5.10. To obtain contrasting feedback from people who were not embedded in the parkrun community, and who were familiar with research processes, the Public Involvement in Research Group from the Advanced Wellbeing Research Centre Sheffield UK were emailed the recruitment materials on 08/08/2022. The group members reviewed the materials online and no changes were recommended in the email feedback.

5.4 Results

The final data set consisted of interview transcripts from 39 interviewees self-identifying as male. The mean length of interviews was 32 minutes 12 seconds (with a range of 9 minutes 58 seconds to 53 minutes 15 seconds). Interviewee demographics can be found in Table 10.

Table 10 Demographics of men aged 45-64 years who participate in parkrun in Ireland who completed online semi-structured interviews

*If home country is not Ireland **runner/walker/volunteer (rwv) or runner/walker (rw)

Pseudonym	County	Home country*	Age (years)	Participant type**	Health condition
Andy	Dublin		62	rwv	
Bryn	Galway	Wales	60	rw	
Cormac	Galway		55	rw	
Davy	Sligo		58	rwv	
Derek	Galway		60	rwv	
Diarmuid	Meath		52	rw	Bipolar affective disorder
Don	Galway		47	rwv	
Dylan	Meath	Wales	64	rwv	
Eamon	Dublin		53	rwv	
Eddie	Galway		47	rwv	
Eoin	Kildare		51	rwv	
Eric	Kildare		64	rwv	
Finbar	Dublin		49	rwv	
Frank	Dublin		52	rwv	
Garrett	Cork		52	rwv	
Gerry	Galway		45	rwv	
Glenn	Mayo		62	rwv	
Jakub	Cork	Poland	47	rwv	
James	Roscommon		52	rw	
Jarleth	Galway		52	rwv	
Jimmy	Roscommon		56	rwv	
John	Meath	England	57	rwv	
Karl	Kildare		46	rwv	Heart failure
Ken	Galway		55	rwv	
Mattia	Galway	Italy	49	rwv	
Mike	Dublin		64	rwv	
Niall	Galway		61	rwv	
Nigel	Galway	England	63	rwv	
Ollie	Clare		46	rw	
Pat	Cork		59	rwv	
Peter	Cork		51	rwv	
Richie	Galway	Scotland	59	rwv	
Rob	Galway		57	rwv	
Seamus	Cork		62	rwv	
Sean	Galway		46	rwv	
Shay	Dublin		48	rwv	
Simon	Galway		58	rwv	
Stefan	Mayo		51	rwv	Coronary artery disease, hip replacement
Steve	Dublin		45	rw	

The interviewees had a mean age of 54 years and 3 months with a range of 45 to 64 years. As shown in Table 10, 33 men (85%) self-identified their parkrun participation type as runners or walkers who volunteer (rwv). The remainder self-identified as runners or walkers, who did not volunteer (rw). All but one of the men had done more than ten events, a threshold used to describe an 'established' parkrunner in previous studies (Morris & Scott, 2019). The men lived in nine counties across Ireland including Cork, Dublin, Galway and Sligo. Seven men had moved to Ireland from other countries across the UK and Europe (called home countries in Table 10).

Reflexive thematic analysis (Braun & Clarke, 2022) of the interview transcripts generated three themes, each with several subthemes: these, with example quotes, are shown in Table 11.

Table 11 Themes and subthemes from reflexive thematic analysis of interviews with 39 parkrun participants, all male, aged 45 to 64 years living in Ireland.

Theme One. (Table continues overleaf). rwv = runner/walker who volunteers rw = runner/walker only

Theme	Subthemes	Description	Example quote
1. parkrun offers a supportive environment for health	a. parkrun takes place in a familiar area	The location of parkrun is close to where parkrun participants live and a place they feel comfortable in.	"It's just a nice, nice area and as kids, we'd have grown up there, so like it was just nice to go back to it again." Jimmy, age 56, rwv.
	b. parkrun offers something for all the family	Participants of any age can attend parkrun as a runner, walker, volunteer or riding in a baby buggy. Families can attend together.	"...seeing grandparents, their kids and their grandchildren out running... that's great to see." Séamus, age 62, rwv.
	c. parkrun events offer a warm welcome	Participants at parkrun are friendly and make an effort to welcome new people.	"Rather than it being a running group it's a community group and it has that sense, about it that it's not just you know elite athletes [...] It's open to everybody." Jarleth, age 52, rwv.
	d. parkrunners are a diverse community	People from marginalized groups are able to participate at parkrun without judgement or stigma.	"...being a gay man and not entering sports or not entering competitions...with parkrun...there's a sense of community there and non-judgmental..." Don, age 47, rwv.
	e. parkrun events are a place to meet people	The way parkrun operates allows time and space to meet other people.	"You may get about 20 or 30 people...over there afterwards having a coffee and it's just a nice way to finish off the morning." Mike, age 64, rwv.

Table 11 continued. **Theme two.**

Theme	Subthemes	Description	Example quote
2. Men who attend parkrun can choose the level of sociability	a. Deep connections can occur between parkrun participants	Shared experiences allow parkrun participants to form strong friendships with other parkrunners, if they wish to.	“I also had prostate cancer... I’m 100% okay...I've been talking to quite a few people at parkrun.... You might know somebody who regularly comes to parkrun and then suddenly they're not coming and then one of their friends might say "oh, they're having treatment for cancer" ... parkrun is a place you can talk about that kind of stuff." Derek, age 60, rwv.
	b. Casual social bonds can be built between parkrun friends	parkrun provides a social environment where participants can have casual conversations and form bonds without any committment outside the parkrun setting.	“These are these are lads and girls you'd meet ... it's all small talk. "How did your week go?" And the usual easy stuff. And then afterwards again, "how did you get on? How’s your run, how's training going?" Jimmy, age 56, rwv.

Table 11 continued. **Theme three.**

Theme	Subthemes	Description	Example quote
3. The parkrun experience can change over time	a. Engagement with parkrun changes over time as confidence, skills and social connections develop	From being anxious at first parkrun to becoming an event director, there are a range of participation types at parkrun which allow participants to engage in different ways at different times in their lives.	"This year I could ... get 50 in a year, but I think next year then I haven't really done much volunteering. So my next idea is that I will start volunteering more... I've recently been looking into training as ...a guide for visually impaired people... I'm always looking for what's the new spin on it." John, age 57, rwv.
	b. Perception of parkrun can change after participation	As an outsider to parkrun some participants felt it was not for people like themselves. As they began to participate they found their place in the parkrun community.	"I have run maybe all my life... I heard of parkrun for a number of years and but I always felt it was ... too short for my own running. ... over a few years with injuries and that type of thing, your body changes and is no longer as easy to do longer runs. And once I started the parkruns I just, I just absolutely love them." Rob, age 57, rwv.
	c. Being a member of the parkrun community gives a sense of pride	Participants are proud of their local parkrun, particularly if they are involved in the organising team or if they often welcome visitors to the event.	"We were the first one in the county and lets maintain that tradition...There's only myself and one other guy who regularly participate in parkrun in [town] that were there on the first day and every anniversary ...we take great pride and credit and say, "Oh yeah, we were there for the first one"...We are the only two originals left around the place." Garrett, age 52, rwv.

The themes will now be described in detail, with verbatim quotes for illustration. Quantifying language such as *occasionally, many or most* is used to give an approximation of the strength or consistency associated with each theme, using proportions suggested by Terry (2010). When the term *occasionally* is used it will refer to themes or subthemes which involved a quarter or less of the interviewees (10 or less). When *some* is used it describes 11 to 25 interviewees. When the term *many* or *often* is used, it refers to two thirds or more of the interviewees (26 or more). Each interviewee was given a pseudonym to protect confidentiality. Age in years at the time of the interview is noted. The abbreviations *rwv* for runner/walker who volunteers and *rw* for runner/walker only are used to describe parkrun participation type. It is important to note which participants volunteer at parkrun, in addition to running or walking, because the results in Chapter Four indicated that volunteering is linked to increased social interactions and social opportunities at parkrun. This is an area which invites further exploration in the current study.

5.4.1 Theme 1: parkrun offers a supportive environment for health

Theme 1 encompasses the way that many men in the study positively described the operational characteristics of parkrun such as free access, weekly events, worldwide locations and gender mix.

Some of the men noted that parkrun events take place in surroundings which are familiar, making them feel comfortable and welcome (Theme 1a). The events are in parks which the men have known since childhood or that the men visit outside of the parkrun event time:

> I live nearby the park and I use that park a lot and we've used it a lot with the kids growing up as well. Playing their various sports over there, so I'm very comfortable there and I like it. (Simon, age 58, rwv).

Many of the men described attending parkrun events with members of their family such as partners or children (Theme 1b). Occasionally this had also been their route into parkrun; they had attended for the first time with a family member, or had been encouraged by them:

> Three generations of families, we're actually seeing grandparents, their kids and their grandchildren out running (Séamus, age 62, rwv).

Some men explicitly described parkrun as being welcoming (Theme 1c), especially the first time attending. This could encourage repeat participation:

> I've done probably eight different locations. Something like that. But anywhere I was ... always welcomed with the smile (Jakub, age 47, rwv, originally from Eastern Europe).

> It was very welcoming ... I think it's fair to say welcome is what is one of the big words that that's part of it. Everybody is just ... leave their stuff at home. They're just pleased to be there and they're pleased to have you there and that comes through very strongly (Finbarr, age 49, rwv).

Occasionally, the men specifically stated that inclusiveness at parkrun is one of the things that supports their mental wellbeing (Theme 1c):

> I enjoyed the, you know, the camaraderie, the atmosphere and the inclusiveness of parkrun (Eric, age 64, rwv).

The warm welcome men had experienced at parkrun contributed to a sense of community and belonging. Occasionally this was described as being a way of improving mood:

> Definitely it is an upper. Better than any drug, I think. I just feel that you get to know people in the community. They start calling you by your name. Now I've been, I live quite close to the [parkrun site] and I've spoken to the tailgater [tailwalker] a few times and then she introduced me to some of the volunteers. After a few weeks people will say I recognise your face and put a name to the face and after a while you're one of the gang. But it's that community sense, rather than the adrenaline rush of the race itself (Peter, age 51, rwv).

In relation to inclusivity, some of the men noted that parkrun is open to anyone, regardless of their age, physical ability, mental health status or sexuality and that they all feel part of the parkrun community (Theme 1d):

> Sexuality for me would have been probably a challenge for me, like being a gay man and not entering sports or not entering competitions … with parkrun there's kind of, there's a sense of community there, and non-judgmental (Don, age 47, rwv).

For men new to the country or the local area, parkrun was described as offering a place to meet people and feel part of the local community (Theme 1d). For example, Mattia moved from Southern Europe to Ireland several years ago and confirmed that parkrun helped him feel more integrated into the community.

One man described clearly how parkrun was open to anyone with physical or mental health conditions:

> Rather than it being a running group it's a community group and it has that sense, about it that it's not just you know elite athletes ... It's open to everybody ... It's just a real mix of everyday people who you know that in a group that size is always an average of whatever it is 70, 80, 90 people there that, people have their own stuff going on whether it's mental or physical things. There's it's, it's open to everybody (Jarleth, age 52, rwv).

The men often described being able to interact with different people at parkrun, which is important for building social capital. The people the men met at parkrun ranged from those within their existing networks (e.g. colleagues and neighbours) to ones that they did not know from any other setting. The way parkrun events are organised gives time for social contact with a wide range of people before, during and after the run/walk (Theme 1e):

> The buzz is the connection with all the different people. That's the key for parkrun. All the different people … all the new friends I've met (Pat, age 59, rwv).

Eamon clearly describes how visiting different parkruns has built bonding capital between himself and friends he met through parkrun connections:

> I have a few buddies, I do parkrun tourism with. Who I would know them through a friend. They work with him, so the only reason I would know him the, the two lads is through parkrun…With the lads like it's, it's always a bit of craic [fun], like we meet up beforehand and introduce ourselves to a few people and then have the run and then we'll always make a point of going for a coffee wherever the local parkrun have their coffees and then have a chat… met a few people who I would have the

> chat with only because I would see them at parkrun, yeah, so yeah, definitely met people through parkrun (Eamon, age 53, rwv).

One man said that attending parkrun is good for preventing loneliness and that his mood was improved after attending:

> I live in the middle of the countryside and because I feel quite lonely at times. It's a really nice social thing and when my friend texted me on Friday night, [to go to] parkrun in the morning, I go "oh no" and then, but I get up in the morning and I absolutely love it and I feel great afterwards (Diamuid, age 52, rw).

Some men described interacting with people outside of the parkrun setting, after originally meeting at parkrun (Theme 1e). Diarmuid describes how he learned about an adult education group at parkrun. This is an example of bridging social capital:

> I didn't know anybody there at all. At the end of the parkrun I heard a guy talking about doing Irish language classes… I'm going to go to his class tomorrow evening (Diarmuid, age 52, rw).

The men were asked about cliques at parkrun as these can sometimes lead to exclusion and have been noted in past parkrun research (Bowness et al., 2021). Only one participant said he had experienced cliques at parkrun, but was not negatively impacted (Theme 1e):

> Sometimes if there's an in-group, and you're not in it you'll just head for the car, which is also fine (Karl, age 46, rwv).

One participant said that he had not experienced cliques at parkrun but that there was potential for them to form:

> I could imagine how it could happen. ... It can happen. It can happen in anything, the GAA [Gaelic Athletics Association] club or, you know, running club, happen in any other club or any other work situation (Ken, age 55, rwv).

5.4.2 Theme 2: men who attend parkrun can choose the level of sociability

Theme 2 demonstrates that many men in the study described a range of social connections between themselves and other parkrun participants. Whilst parkrun events support socialisation, there is no expectation to socialise; it is possible to turn up, run or walk and go home without speaking to anyone. This level of autonomy was appreciated by the men:

> At parkrun you don't have to be friends with everyone…it can be at your own kind of level (Jarleth, age 52, rwv).

For men who did wish to have social contact, they described two different levels of sociability: deep connections (Theme 2a) and casual social bonds (Theme 2b).

Some men talked about deep connections with people they interacted with at parkrun (Theme 2a). Two types of deep connections were described. The first type was with people they had met for the first time at parkrun and developed a friendship with over time:

> Some of my best friends now in Ireland are people I didn't know at all in parkrun a few years ago (Dylan, age 64, rwv).

> There's relationships with probably two of them that I'd be very comfortable of saying look things aren't good or there's an issue or whatever. You know there's one or two others that I might talk about running related issues but again one of those people, we know he's suffering himself. So it's, you know, trying to meet them to make sure that they're all right rather than that you're alright, you know?... It works very well that way (Garrett, age 52, rwv).

The second type of deep connection was with people they already knew before going to parkrun, but parkrun attendance strengthened the relationship.

> The only friends that I have in [town] that I would ring on a regular basis are [name] and [name]. And live quite, fairly close, to where I lived before, and they're the ones that I go to the parkrun with (Diarmuid, age 52, rw).

These deep connections at parkrun were identified by the men as being good for mental wellbeing. After describing a parkrun participant who had been recently diagnosed with cancer, Derek notes:

> Definitely the social side of it and being able to talk about stuff and actively talking about stuff, it's a positive… in terms of mental wellbeing (Derek, age 60, rwv).

When talking about casual social bonds, sometimes called acquaintances, with people the men knew only from parkrun the men would occasionally use the phrase "parkrun friends" (Theme 2b). This is not an official term from the parkrun charity but seems to have developed organically:

> It's actually created a kind of a separate friend group or peer group for me. ... There are parkrun friends who are only parkrun friends (Finbarr, age 49, rwv).

> I'm calling them my running or parkrun friends, okay. There are some that we meet for a coffee or the cakes (Jakub, age 47, rwv).

parkrun friends (Theme 2b) were described as people that the men meet at parkrun on Saturday mornings. They chat at the start line, while volunteering or at the café afterwards. However, they would not make any effort to meet up with those people outside of the parkrun setting:

> You may say hello to lots and lots of people and that you may know over a period of time because of parkrun, but ... you don't have to develop any huge relationship (Stefan, age 51, rwv).

Many men noted that topics of conversation among parkrun friends is light-hearted, chatting about fitness and the run, with personal issues not usually discussed (Theme 2b).

Some men stated directly that the social aspects of parkrun participation, particularly related to volunteering, were good for their mental wellbeing (Theme 2b):

> It's meeting people and getting out there…you can see what it does, especially if you're crew [a volunteer]… so many stories, that gives you good feeling…You do really, really, really feel great after. You know, a real buzz (Mike, age 64, rwv).

> I found, probably, one of the most uplifting thing was volunteering. The first time I've volunteered at [parkrun] I was almost in tears standing at the marshals place you know, and seeing all the faces going by and the different abilities and the different attitudes. You know, some people were, you know, really fit. Other people were really struggling. And it's just, you know, I can't really explain it, but just encouraging people on and getting the acknowledgement from them gave me a huge lift like I couldn't believe it myself, you know, I really, really enjoyed it. So I've done volunteering quite a few times (Eric, age 64, rwv).

For some men the social aspect of parkrun extended beyond the parkrun event to strengthen social bonds with work colleagues during the working week:

> I have done [parkrun] with this woman who I knew at work… We often exchange "How was parkrun this weekend?" It became a sort of chat subject, you know, from time to time. And it's good to have someone else who was [laughs] boring on the subject (John, age 57, rwv).

> I've certainly mentioned it to lots of my colleagues and a few of them have gone to their local parkruns and it's part of their routine. We just started up a, [laughs] a little competition…for the New Year. There's maybe ten of us that do parkruns from time to time and we decided whoever has improved their time from the start of the year to the end of April the winner gets a [sports shop] voucher. It's just for a bit of fun (Frank, age 52, rwv).

In addition to in-person interactions some men described developing relationships with other parkrun participants using social media. This allowed a feeling of community connection even if the men were not attending parkrun that week or if they were sick or injured:

> It's nearly the highlight of my Saturday evening, just scrolling through the different [parkrun event] Facebook pages. I find it [a] fantastic way of just keeping in touch and being part of that community even though I may not be there, just to be part of it. I may turn around and say I saw your

> photograph or you know I saw, I saw [parkrunner] struggling in the rain or loving the sunshine (Eoin, age 51, rwv).

> I have become friends on Facebook with one or two people alright. I do look at the Facebook page every Saturday, you know, to see the photos, particularly if I'm not there. See was there many there … I would sort of go out on my way to make a nice comment if I could, if somebody had done well on a PB [personal best finish time] or you know try and just give a thumbs up and I would try to be reinforcing all the good things out of parkrun through social media with small little comments and likes and that, you know, I think that's important in a way (Simon, age 58, rwv).

5.4.3 Theme 3: the parkrun experience can change over time

All but one of the men in this study were regular parkrunners who had attended ten or more events. Theme 3 captures how they described their feelings before and during their first parkrun event and how their social experiences changed over months and years of regular attendance.

One man, Ken, described his journey from a new parkrunner to now being an Event Director (the volunteer responsible for parkrun operations at a particular location) (Theme 3a). Talking about his first time attending parkrun:

> I was pretty nervous going up because I wouldn't have ran with a group of people before… So the bit of running I would have done would have been on my own and well away from people (Ken, age 55, rwv).

Ken continues to describe how he came to take on the role of Event Director at the same parkrun several years later, albeit initially reluctantly:

> With the Event Director like, nobody was stepping up to do it. And I said I'll do it just for the sake of the run not being, you know, cancelled then (Ken, age 55, rwv).

The gradual change in engagement with parkrun can also lead to learning new skills. These skills can include learning tasks directly related to parkrun operations such as using the parkrun app to be a timekeeper or the skills can be broader like the team management skills needed by a run director. In a similar way to the experience of Event Director Ken,

Don gradually learned the different volunteering roles and was considering trying the role of Run Director, the organiser of the event on a particular Saturday:

> I have kind of considered doing maybe the run director at times, but I thought just to kind of maybe get a little bit more confidence in myself … Most of my volunteer roles have been doing the marshal [sic]. I've done timekeeping and stuff with that, so I think I'll push the boat out in the next year or so and maybe do run director (Don, age 47, rwv).

The social connections made at parkrun didn't always happen immediately. Some of the men described gradually getting to know other people at parkrun over months or years (Theme 3a):

> I met nobody the first time, you know, but you know how it is, you go and you talk to one or two people, you run with people, you complain about the hills … and you get to know people (Dylan, age 64, rwv).

Occasionally the men described how they met up with other parkrunners to do activities outside of the parkrun setting, either at running events or other social activities:

> There's a gang of us who meet at parkrun on Saturday mornings and a few of them were going to do in the marathon. I had no intention of doing another marathon. And but they said in July or something, they said Dublin's opened, they're taking entries again for Dublin and a couple of us entered it like, so I said feck it, we'll go for it (Séamus, age 62, rwv).

> Apart from my normal day job I'm doing a [university course in music] and so friends from the parkrun are coming for my recital concerts (Jakub, age 47, rwv).

One man described how he was travelling overseas for a weekend with a group of people he had met through parkrun:

> So we flew out on the Friday. I think it was about 50 odd [people] on that. So all stayed in the one hotel and did the parkrun of course. Everyone kind of scatters during the day… 90% plus would have turned up in the couple of pubs that night and sure it was great fun (Jimmy, age 56, rwv).

Occasionally the men explained how their perception of parkrun changed as they became regular participants (Theme 3b):

> I heard of parkrun for a number of years but I always felt it was ... too short for my own running. ... once I started the parkruns I just absolutely love them (Rob, age 57, rwv).

The social experience at parkrun can also change over time, with regular attendance over a period of time being needed to get to know people, as described by Don:

> I'm doing it a few years, but I'm only now kind of maybe getting to know people's first names. You know, you get to recognize a lot of people to see, I suppose, in the locality and maybe some from parkrun, but it's only maybe even this year, I think, I'm really only getting to know people's names. (Don, age 47, rwv).

The final subtheme describes the sense of pride that comes with being a member of the parkrun community (Theme 3c). Garrett describes his pride in being on the team that set up a new parkrun in a rural area of Ireland:

> We take great pride and credit and say *"*We were there for the first one" (Garrett, age 52, rwv).

When a set number of parkrun participation occasions have been completed it is possible to order milestone t-shirts and other merchandise from parkrun. These include awards for 25, 50 and 100 run/walks or volunteers. Occasionally the men described the role of milestones in encouraging pride in achievements and bonding between parkrunners. For example, Pat details the celebratory tea, cake and balloons for his 100 milestone parkrun:

> There was balloons and I brought them home, one still outside, hanging on the stairs with the 100 balloon [when] my T-shirt arrived. So that was a big milestone. So I got a great kick out of that (Pat, age 59, rwv).

5.5 Discussion

The research question for this study was:

What is the social experience of parkrun participation for middle-aged men in Ireland and how is this related to mental wellbeing?

The results for this study are summarised by three themes:

- Theme 1: parkrun offers a supportive environment for health.
- Theme 2: men who attend parkrun can choose the level of sociability.
- Theme 3: the parkrun experience can change over time.

This discussion will consider how the three themes answer the research question, reflect on the implications for men's health and describe how the learnings can be applied to other community initiatives.

The results suggest that the interviewees perceived parkrun as a place for men to make or enhance social connections while participating as runners, walkers or volunteers. These connections, if desired, can be deep friendships or casual connections. Regular participation may maximise the social element of the parkrun experience.

5.5.1 Socio-ecological model

The three themes can map onto a socio-ecological model of health, such as the WHO Ottawa Charter for health promotion (WHO, 1986) which details how health and wellbeing is influenced at multiple levels from political to personal. The themes from the current study can be organised in this structure to show the way that parkrun participation can influence mental wellbeing on three levels:

- Environmental. Theme 1: parkrun offers a supportive environment for health.
- Community. Theme 2: men who attend parkrun can choose the level of sociability.
- Personal. Theme 3: the parkrun experience can change over time.

Lifestyle drift is a common critique of health promotion policies and initiatives, referring to the way that initiatives avoid the social determinants of health and wider community or environmental factors and focus on personal responsibility for health (Carey et al., 2017). The parkrun operational model which allows alignment with a socio-ecological framework suggests that, for middle aged men in Ireland, parkrun participation is a good example of an effective mental health promotion initiative for middle-aged men in Ireland. This knowledge can be applied when designing future community initiatives for this population group, or when considering how to reduce barriers to participation in

parkrun for middle-aged men in Ireland, ensuring the initiatives address environmental, community and social determinants of mental wellbeing.

The operational characteristics of parkrun differentiate it from other activities such as athletics races or periodic physical activity initiatives, for example the 12 week Men on the Move programme (L. Kelly et al., 2019). The results suggest that these characteristics appear to be important in encouraging social interaction among the middle aged men interviewed (Theme 1). These include the following: time for social interaction before, during and after the parkrun; a welcoming atmosphere; opportunities to volunteer; and regular, year-round events. These elements combine to create a supportive environment for health, one of the five action areas for health promotion described in the Ottawa Charter (WHO, 1986). The familiar physical environment (Theme 1a) also contributed to this supportive environment.

5.5.2 Social media as part of a third place for social connection

Previous parkrun research in the UK has described parkrun as a third place for casual sociability (Hindley, 2020), defined by Oldenburg (1999), as physical spaces in the community where people can have social interaction, as an alternative to the first and second places of home and workplace. Social media is a valid contribution to a third place as discussed by Yuen and Johnson (2017). The current study supports Hindley's (2020) description and extends the information with the addition of the online space via social media connections. The men in the current study described a continuation of social interactions via social media. The parkrun charity provide a Facebook page for every event, and some men described additional online text messaging groups which have developed organically among their own parkrun community. There are also several online communities which have developed for groups such as parkrun tourists (parkrun participants who visit different parkrun events in their own country or abroad). In recent years social media has given an alternative method of maintaining social contact (Dunbar, 2016) which can be used for social support (Nam, 2021; Oshio et al., 2020; Utz & Muscanell, 2015). The influence of this on mental wellbeing has not been widely researched but one study suggests that online social networks may improve mental wellbeing through perceived social support (Oshio et al., 2020). Having a supportive online environment, in the form of Facebook groups or other social media, is a way to add to the feeling of community and access social support or social capital (Nam, 2021;

Simons et al., 2023). The importance of online social contact as part of the parkrun experience has potential for future research for greater understanding of these concepts.

5.5.3 A universal community initiative for health promotion

The results of the current study suggest that the universal nature of parkrun, with access for all genders, could be important for building social connections for middle-aged men in Ireland (Theme 1b). Many initiatives aimed at improving the wellbeing of Irish men take place in a single gender environment, for example Men's Sheds and the physical activity programme Men on the Move (L. Kelly et al., 2019; McGrath et al., 2022). While there is certainly a place for single gender activities (Health Service Executive, 2016) with the environment for health promotion feeling safe for men (Robertson et al., 2018), the study by Lefkowich noted that single-gender activities are not always desired by Irish men (Lefkowich et al., 2017). This was echoed by men from the current study who described attending parkrun with friends, partners and family members of all genders, supporting previous parkrun research about the facilitators of participation (Wiltshire & Stevinson, 2018). Social networks based around family are important for men's wellbeing through middle age (Cable et al., 2013) with social support from spouses being protective against depression in men (Santini et al., 2016). Social support is a determinant of mental wellbeing so using parkrun as a family activity could contribute towards its health benefits for men.

A related topic to the theme of gendered involvement is the consideration of diversity at parkrun, including gender identity (Theme 1d). The two openly gay men in the study found that parkrun was a welcoming environment. Gay men in Ireland are a group which are vulnerable to poor mental wellbeing (Ceatha et al., 2019) so an initiative like parkrun gives an opportunity for this population group to build social connections and support their mental wellbeing. Developing activities which are supportive of men, and that are also welcoming to women and members of the lesbian, gay, bisexual, transgender, queer and other sexual orientations and gender identities (LGBTQ+) communities will minimise the chance that groups may feel excluded from attending. The parkrun charity have recently acknowledged this opportunity for inclusivity by adding an option for gender for new registrants "prefer not to say" and (in the majority of parkrun countries) an additional option of "another gender identity": previously there had been only options

for “male” or “female” (parkrun Global, 2023a). Further research on the inclusivity of all-gender community initiatives, compared to men-only groups, is recommended.

5.5.4 Social capital at parkrun

Subtheme 1e showed evidence that parkrun participation can build bonding social capital between runners, walkers and volunteers with an example given of a group of men linked through a work colleague who have fun visiting different parkruns together. There was also one example of bridging capital where a parkrun participant described attending an Irish language class after learning about the class from a parkrun participant.

Previous parkrun research noted that social capital is one way to initiate parkrun attendance with new parkrunners being introduced to the event by friends and family (Wiltshire & Stevinson, 2018). The current study adds to this by showing that parkrunners can use connections from parkrun to build on existing social capital and that there is potential to benefit from this outside the parkrun setting.

5.5.5 Choice and autonomy at parkrun

The men from this study described having a choice of whether to interact socially with other parkrunners or avoid social contact (Theme 2). Not every interviewee was interested in making new social connections and were happy with their current friends or family for social contact. This choice may be alternatively described as autonomy, a key element in Self-Determination Theory, a commonly used framework in health psychology (Johnson et al., 2022). Self-Determination Theory outlines the influence of autonomy, competence and relatedness on motivation to undertake positive health behaviours (Ryan & Deci, 2000). The choice of social interaction offered by parkrun may therefore be a key operational element which could contribute to initial and continued participation in parkrun. The elements described in Self-Determination theory may also, in themselves, be related to wellbeing (Ryan & Deci, 2000). This is an area which has not been previously explored in parkrun research but is worthy of further consideration as the current study suggests autonomy, competence (in the form of personal skills) and relatedness (social connections) are all described by the middle-aged men in the study.

5.5.6 Weak and strong social ties at parkrun

For those that did wish to socialise, the type of social interaction can be split into two types: casual social bonds and deep connections. These types of interactions echo those

described by Granovetter (1973) as weak or strong ties, taking into consideration the time investment, emotional intensity, intimacy and reciprocity involved. Weak ties are valuable in forming connections between people from diverse groups and strengthening communities (Granovetter, 1973). The men in the current study explicitly described weak social ties as being beneficial for their mental wellbeing. This link between weak ties and mental wellbeing is similar to that described in previous research in the community setting where brief interactions with strangers were shown to positively impact happiness and wellbeing (Sandstrom & Boothby, 2021; Van Lange & Columbus, 2021).

5.5.7 Repeated attendance for maximum benefit to mental wellbeing

Another finding of this study was that the men needed repeated visits to parkrun events to see the full benefit of social connections (Theme 3). An operational feature of parkrun is that it takes place in multiple locations, every week, 52 weeks of the year, which facilitates regular attendance (Bowness, McKendrick, et al., 2020). Other initiatives for men in Ireland, such as Men on the Move, do not continue through the summer, with research by Kelly et al (2019) noting that a long summer break contributed to men permanently discontinuing the physical activity programme. The continuous nature of parkrun, together with social media engagement could minimise the risk of discontinuation among this population, although this has not been fully explored in research to date.

Repeated attendance at parkrun could increase the opportunity to build social connections. The "practice makes perfect" strategy of repeatedly attempting social contact with strangers to reduce discomfort and build weak ties was recommended by Sandstrom and Boothby (2021) and is an appropriate practice for new parkrun participants wishing to develop social interactions at parkrun events. The parkrun charity have milestone clubs which reward repeat attendance with t-shirts and other merchandise to highlight achievements such as completing 25 parkruns or volunteer occasions (parkrun, 2024b). Recent research has highlighted the significant number of parkrun participants who have only completed one parkrun and not returned (Reece et al., 2022). Additional marketing campaigns to promote milestone clubs or rewarding smaller milestones to help encourage regular attendance for beginners is an area for future consideration along with current recommendations for facilitating participation in parkrun by Reece et al (2022).

Repeated attendance described in the current study gave a chance to experience different volunteering roles. increase confidence and gain management skills. This is another area covered by the Ottawa Charter for health promotion, described as developing personal skills (WHO, 1986). Gaining skills through volunteering can lead to decreased levels of unemployment (Lam et al., 2023) and improved mental wellbeing (Jané-Llopis et al., 2005; Tabassum et al., 2016).

5.5.8 Pride and parkrun participation.

Pride was a term that was used, in relation to parkrun participation, by some of the men in the current study (Theme 3c). Pride is associated with accomplishment and motivation in a variety of settings, including relationships, academia and the workplace (Mercadante et al., 2021; Tracy & Robins, 2007). Previous research suggests that pride at parkrun is linked to achievement of self-determined goals such as improvement in finish times (Mulvenna et al., 2023) and can be a motivation to volunteer at parkrun (Renfree & West, 2024). The pride described by the men in the current study was related to achievements other than finish times, such as starting a parkrun event in a new location or working towards participation goals such as milestone t-shirts. Pride among parkrun participants and the relationship to mental wellbeing is an area for future research.

5.5.9 Policy and practice recommendations

The findings from this study have implications for the design and implementation of community initiatives to support mental wellbeing in middle-aged men in Ireland. The results suggest that within the suite of available activities to middle aged men in Ireland, activities which are gender neutral should be made available to provide the option of participating with family members and spouses.

Community initiatives should be designed to provide a supportive environment for social interaction. This could include, but is not restricted to, efforts to welcome new participants, a location for social contact after the event and optional social media participation. Organisers should be mindful that not all participants will want to engage in social activity and this choice should be respected.

The initiative should offer a continuous, year-round, service to allow for continuity in engagement and maximise the social and mental wellbeing benefits.

Newcomers to this type of initiative should be supported to attend regularly to gradually build social connections and develop personal skills. Volunteering at the initiative may enhance the social experience.

5.5.10 Methodological considerations

The findings in this study should be interpreted in the light of the methodological considerations described here. One strength of the study was the mix of rural and urban parkrun participants from a wide geographical area of Ireland with ages ranging across the full spectrum of the defined range for middle age (age 45 to 64 years) to contribute to information power (Malterud et al., 2016) for the study. All but one of the men interviewed were regular parkrunners who had participated in more than ten events so assumptions cannot be made about the application of these results to men who are new to parkrun participation. All men in the study were runners or walkers at parkrun events with, or without, volunteering. An extension of the study could include interviews with men who volunteer at parkrun without running or walking to explore their insights into the social aspects of parkrun.

During participant recruitment it was noted that all the participants were White European. Diversity was not considered from the start of participant recruitment but when it was clear there was a lack of diversity the PhD candidate changed the recruitment strategy to recruit a more ethnically diverse sample by engaging with a national refugee group. However this was unsuccessful and there was no ethnic diversity in the final study population. The ethnic mix of parkrun participants does not fully reflect the diversity in local populations (Fullagar et al., 2019; Smith et al., 2020). Future research which recruits parkrun participants from a wide range of communities may add to our understanding of the barriers to parkrun participation for these groups. Using strategies such as those recommended in the Kings model for recruiting people from a variety of racial and ethnic backgrounds could be useful in future parkrun studies (Ray Chaudhuri et al., 2023). These strategies include working with local community leaders and using people from a variety of ethnic backgrounds in participant recruitment campaigns on social media (Ray Chaudhuri et al., 2023) and could include engagement with parkrun outreach ambassadors to assist with participant recruitment (Quirk, 2024).

This study took place in 2022/23 when parkrun events had been back in operation for at least 12 months following the COVID-19 pause (since September 2021) (parkrun Ireland,

2021). Research by Quirk et al (2022) showed that happiness and life satisfaction among the parkrun population in the UK declined during the COVID-19 pandemic, with the effect felt more strongly by females and younger adults. As the long-term impact of the pandemic on men's health and wellbeing in Ireland is currently unknown caution should be applied to interpreting the results in light of the post-pandemic recovery period.

The current study explored the experiences of middle-aged men in Ireland without reference to their socioeconomic status. Previous research has shown that men living in areas of deprivation in Ireland are at high risk of poor mental wellbeing and social isolation (O'Donnell & Richardson, 2020) which suggests that parkrun participation may be particularly suitable for this under-researched group. Research in the UK noted that parkrun participation rates for those living in areas of deprivation is lower than for people from more affluent areas (Schneider et al., 2020). Data from parkrun participants in Ireland suggested a similar trend, although the numbers studied were not large enough to show this statistically (Haake et al., 2019a). More research into the barriers to participation for this population group is clearly indicated, particularly as men from areas of deprivation with the associated risk of poor mental wellbeing may have the most to gain from social connections at parkrun.

5.6 Conclusion

This chapter described a study exploring the experiences of middle-aged men who attend parkrun in Ireland. The results suggested that parkrun provides a supportive environment for mental wellbeing. The men noted that both strong and weak social ties developed through parkrun participation provided social support. Social connections developed after repeated participation in parkrun and some men reported that parkrun supported their subjective mental wellbeing. When designing new interventions for mental health promotion for middle-aged men in Ireland repeated activities with an opportunity for volunteering and social interaction should therefore be included, using a similar operational model to parkrun. The findings from this study could be applied to other community initiatives which combine a purposeful activity with social connection to provide appropriate health promotion opportunities for populations at risk of poor mental wellbeing.

The next chapter will explore how the interview data gathered for this study can be used to describe the social styles of the participants and how we could utilise this information to facilitate and maintain participation in community initiatives for middle-aged men in Ireland.

Chapter Six. Study Three. Exploring the utility of personas to write policy and practice recommendations for mental wellbeing among middle-aged men in Ireland.

6.1 Overview of the chapter

The results from Study One and Two (Chapters Four and Five) suggest that social interaction at parkrun is a possible factor which influences improved mental wellbeing among parkrunners, particularly for middle-aged men in Ireland. This chapter includes a description of the process of persona design to illustrate the social interaction styles of middle-aged men attending parkrun in Ireland. It discusses how personas can be included in stakeholder consultations and used in the development of health promotion policy and practice guidelines.

6.2 Introduction

The review of published parkrun research in Chapter One suggested that social relationships at parkrun facilitated and sustained participation for adults in the UK (Cleland et al., 2019; Sharman et al., 2019; Stevinson et al., 2015; Wiltshire & Stevinson, 2018). The results of Study One and Two of this thesis, detailed in Chapters Four and Five, suggest that having a choice of social connections could be linked to improvements in mental wellbeing among middle-aged men attending parkrun in Ireland. Combining this information leads to the following proposal: if we can facilitate participation in parkrun based on the different preferences for social connections, we could encourage more men in the community to experience mental wellbeing support through parkrun. The learnings from Study Two, which focussed on middle-aged men in Ireland, could be used to develop policy and practice recommendations to facilitate participation in parkrun for this group. One way of undertaking this process is through stakeholder consultation.

6.2.1 Stakeholder consultation for knowledge translation

Researchers that complete work which has the potential to impact society has an ethical responsibility to translate this evidence into policy and practice (Rau et al., 2018) with knowledge translation being increasingly built into health research funding requirements (Erismann et al., 2021). In the discipline of health promotion, using research to inform

policy and practice is included in its core competencies as part of evidence-based practice (Barry et al., 2012; Dempsey et al., 2011). It was therefore important to use the research results described in this thesis to develop a set of policy and practice guidelines which could be used to facilitate parkrun participation for middle-aged men in Ireland and to maximise the mental wellbeing benefits of community initiatives for this population. A recent study highlighted stakeholder engagement as a key strategy for using research to develop policy and practice recommendations (Erismann et al., 2021). Stakeholders are "an individual or group who is responsible for or affected by health- and healthcare-related decisions that can be informed by research evidence" (Concannon et al., 2012, p. 986). They can include funders, purchasers or providers of services and policy makers (Concannon et al., 2012). Additionally, patient and public involvement in research is often considered to be an integral part of stakeholder engagement in health research (Boaz et al., 2018) and was discussed in relation to the research in Chapter Three of this thesis. Three styles of stakeholder engagement can be used; dissemination, discussion and listening (Poetz et al., 2016). Dissemination can include information meetings, fact sheets or newsletters, with minimal feedback from stakeholders (Poetz et al., 2016). Discussion is a two way activity which can include formal questions, focus groups and structured group meetings (Poetz et al., 2016). Listening can also include formal questions for stakeholders and recording the answers, using an expert panel, advisory board or questionnaire (Poetz et al., 2016). For this study the method of discussion with stakeholders was chosen to enable a sharing of ideas between the researcher and participants and a collaborative approach, in line with health promotion principles. A set of personas was used to summarise the research results and describe the range of participants which would be the focus of the policy and practice recommendations. This process will be described in detail in the following sections of the chapter.

6.2.2 Use of personas in health promotion

Health promotion practitioners have traditionally used demographics to design interventions for population subgroups (Wills, 2023). Segmentation is often by age, gender and health inequity (including ethnicity and minority sexual orientation) (Oliffe et al., 2021) but this does not take into account individual differences within those groups. Novel approaches are being introduced in some areas of health promotion to include social variables along with traditional demographics (Bullough, 2012), for example

categorisation by motive or habit (Forsberg, 2014) or classification according to attitudes, interests and opinions (Janssen et al., 2020). One example is Sport England segments where quantitative methods were used to categorise the population of England by sport participation rate and interest in future participation in sport (Bullough, 2012). This information was then available for policy and practice development to attract new participants to sport and improve accessibility (Bullough, 2012). A similar method to using segments, but suitable for subpopulations, is to use the tool of personas, defined by Cooper (1999, p. 124) as "hypothetical archetypes of actual users." Personas consist of a description of a typical user of products or services and have been utilised for segmentation in user-centred software design since the 1990s (Cooper, 1999; Maguire, 2001; Miaskiewicz & Kozar, 2011). Designing a product or service to meet individual personas ensures a tailored outcome, whereas aiming to suit everyone will suit no-one (Cooper, 1999). Thus, as outlined by Miaskiewicz and Kozar (2011):

"Products that satisfy 100% of the needs of a few personas will have a great chance of success than products that serve 10% of the needs of the all-encompassing 'everyone'" (Miaskiewicz & Kozar, 2011, p. 427).

Personas are designed to look like a real person with personalities and goals (Cooper, 1999). Each persona is given a name and detailed information about their lifestyle to allow empathy and understanding of the end user of any product or service (Cooper, 1999; Miaskiewicz & Kozar, 2011). The style of personas described in published literature varies widely. They can be presented as a detailed profile covering all aspects of a person's life, goals and needs (Holden et al., 2017). Alternatively they can be a simple icon with a short list of attributes relating to a specific topic; for example a profile of a typical healthy patient (Wang et al., 2018).

In an attempt to formalise the persona development process, Guan et al (2021) reviewed the personas used for several healthcare design purposes and found that personas contained the following elements;

- Demographics
- Personality
- Activity (interaction with the product or service)
- Interests (preferences related to the product or service)

- Challenges (issue which prevent full use of the product or service)
- Environment (living conditions)
- Hobbies
- Physical health
- Mental health
- Behavioural health
- Income (list adapted from Guan et al. (2021))

It should be noted that not all personas for all purposes contain every element from the above list (Guan et al., 2021).

6.2.3 The application of personas in health promotion

Personas are created for user-experience design, market research and social media strategy, with some overlap across these applications (Guan et al., 2021). Personas are also increasingly being developed for public health and health service purposes. For example they have been included in healthcare projects such as the acceptability of medical devices for diabetic patients (Tanenbaum et al., 2018). They have been used to design digital health tools for patients with multiple morbidities (Bhattacharyya et al., 2019) or single morbidities like diabetes (LeRouge et al., 2013). They have also been useful in the design of medical equipment (Vincent & Blandford, 2014) or for medication adherence using mobile health technology (Haldane et al., 2019). Personas were used as part of a codesign project for improving physical activity promotion in the UK National Health Service (Speake, 2017). In that project, personas were developed with stakeholders to represent a range of interests and values around the topic of physical activity engagement (Speake, 2017). Another role for personas in health promotion is to communicate health messages on social media, for example the research by Massey et al (2021) who used personas to develop targeted information about the Human Papilloma Virus (HPV) vaccine. Personas have been developed to understand the complex health promotion needs of people in minority groups (Phillips et al., 2016) but, to date, personas have not been widely used in health promotion practice.

Until recently there were no good-practice guidelines for developing personas (Holden et al., 2017), although various qualitative, quantitative and mixed methods have been employed (Cooper, 2014; Haldane et al., 2019; Janssen et al., 2020; LeRouge et al., 2013;

Phillips et al., 2016). In an attempt to standardize the process Jansen et al (2022) have published a new guideline for persona development where a data driven approach is used. As evidence-based practice is recommended in health promotion (Dempsey et al., 2011) the method described by Jansen (2022) was selected for this study.

This approach of user-centred design could be used to tailor health promotion activities to population subgroups. The traditional method for health promotion interventions is to use demographics but this assumes that all people from a certain gender, age group or socioeconomic background will have the same wants and needs for health promotion. The advantage of using personas instead of target demographics is a more holistic view of the end user, taking into account their individual characteristics, which can lead to creative and original solutions when designing products or services (So & Joo, 2017). As discussed in Chapter One, some middle-aged men in Ireland are at risk of poor mental wellbeing, particularly those who live in areas of deprivation or rural settings (O'Donnell & Richardson, 2020; Samaritans, 2020). However, they are not a homogenous group and facilitating participation with community initiatives for this group should not take a "one size fits all" approach (Lefkowich et al., 2017). The findings of Study Two (Chapter Four) described the different social connections at parkrun to support mental wellbeing for middle-aged men in Ireland. One potential way to tailor health promotion activities to facilitate and maintain participation in parkrun, while taking into account the differing needs in this group, is to use personas.

6.2.4 Rationale for the use of personas

The results of Study Two (Chapter Four) have shown that middle-aged men in Ireland can form social connections at parkrun which may support mental wellbeing. At the time of writing, the parkrun operational team in Ireland undertook regular surveys of participants segmented by demographics including socioeconomic status, presence of long term health conditions and level of physical activity. The results of these surveys are used to design operational changes and marketing campaigns to maximise the impact of parkrun participation and overcome barriers to participation with the goal of continuous improvement (Shields, 2023). Although the process involves elements of user-centred design, personas are not currently used (Shields, 2023).

This study will identify a set of personas of middle-aged men who attend parkrun in Ireland, using the personas to illustrate the different social needs, and explore the utility of these personas when writing policy and practice recommendations with stakeholders.

The aim and objectives of Study Three are as follows:

Aim: To create a set of personas that represent middle-aged men at parkrun in Ireland and consider how the knowledge gained can be applied to develop policy and practice recommendations.

Objectives:

- To create a set of draft personas using interview transcripts from the target population
- To liaise with stakeholders to refine the personas
- To use the personas in the development of health promotion policy and practice recommendations to facilitate participation for middle-aged men attending parkrun in Ireland.

The methods for persona creation and stakeholder consultations are described in detail in the following section.

6.3 Method

This section will describe the method for persona development and detail their use in stakeholder consultations to develop a set of practice and policy guidelines. Ethical approval for this study was given by Sheffield Hallam University on 16/09/2022 with an amendment on 20/10/2023 to include the public and stakeholder consultations (Ethics Review ID: ER42513594). A copy of the ethics approval can be found in Appendix 6.1.

6.3.1 Persona development

The first objective was to develop a set of personas to represent middle-aged men attending parkrun in Ireland. Persona development followed the five steps described by Jansen et al (2022):

1. “Choose the purpose
2. Collect the data

3. Analyse the data
4. Identify standard users
5. Create the cast of persona profiles" Jansen et al (2022, p. 5).

Each step is described in turn.

1. The purpose of this set of personas was to illustrate the different social needs of middle-aged men who attend parkrun in Ireland. The personas would then be used to stimulate discussion in stakeholder consultation meetings for development of policy and practice recommendations.

2. The data was collected, adopting a pragmatic approach, from the existing transcripts of interviews with 39 middle-aged men aged 45-64 years, who run, walk or volunteer at parkrun in Ireland as described in Chapter Five. Detailed demographics of the interviewees can be found in Table 10 in Chapter Five. Briefly the interviewees had a mean age of 54 years and 3 months. The majority (n=33) self-identified their parkrun participation type as runners or walkers who volunteer. All but one of the men were well-established parkrun participants. The men lived in counties spread across Ireland, and seven men had moved to Ireland from other countries in the UK and mainland Europe.

3. As there is no universal method for persona development a data driven approach was used, as recommended by Jansen et al (2022). The choice of qualitative method for persona development is, again, not universally agreed, so the method used in Study Two, reflexive thematic analysis (Braun & Clarke, 2022), was continued to be used for persona development. This allowed for consistency in approach between the two studies. Data was analysed in NVivo 12 (Lumivero). Participants quotes, which described their social experiences at parkrun, were grouped into themes according to social needs using inductive reflexive thematic analysis.

4. Each theme represented a standard user, representing the social connection style for a middle-aged male participant at parkrun. The key characteristics were noted and used as the theme name (for example *The Tourist*, *The Loner*).

5. Each standard user was given a name, age, description of social needs and an illustrative quote. The quotes are taken verbatim from 6 of the original 39 participants who took part in the interviews for the study. It is sometimes recommended that personas use a photograph to illustrate each archetype (Cooper, 1999). The 39 participants in this

study were all white, middle-aged men, despite efforts to improve ethnic diversity in the sample during participant recruitment, as described in Study Two (Chapter Four). As the sample was visually homogenous it was decided to represent each persona with an icon illustrating a key feature, using the style adopted by (Wang et al., 2018). At this stage the six personas were considered to be draft personas, with openness from the researcher to adapt the set following the public and stakeholder consultations, while not deviating from the data driven approach.

The set of draft personas are shown in Figure 11

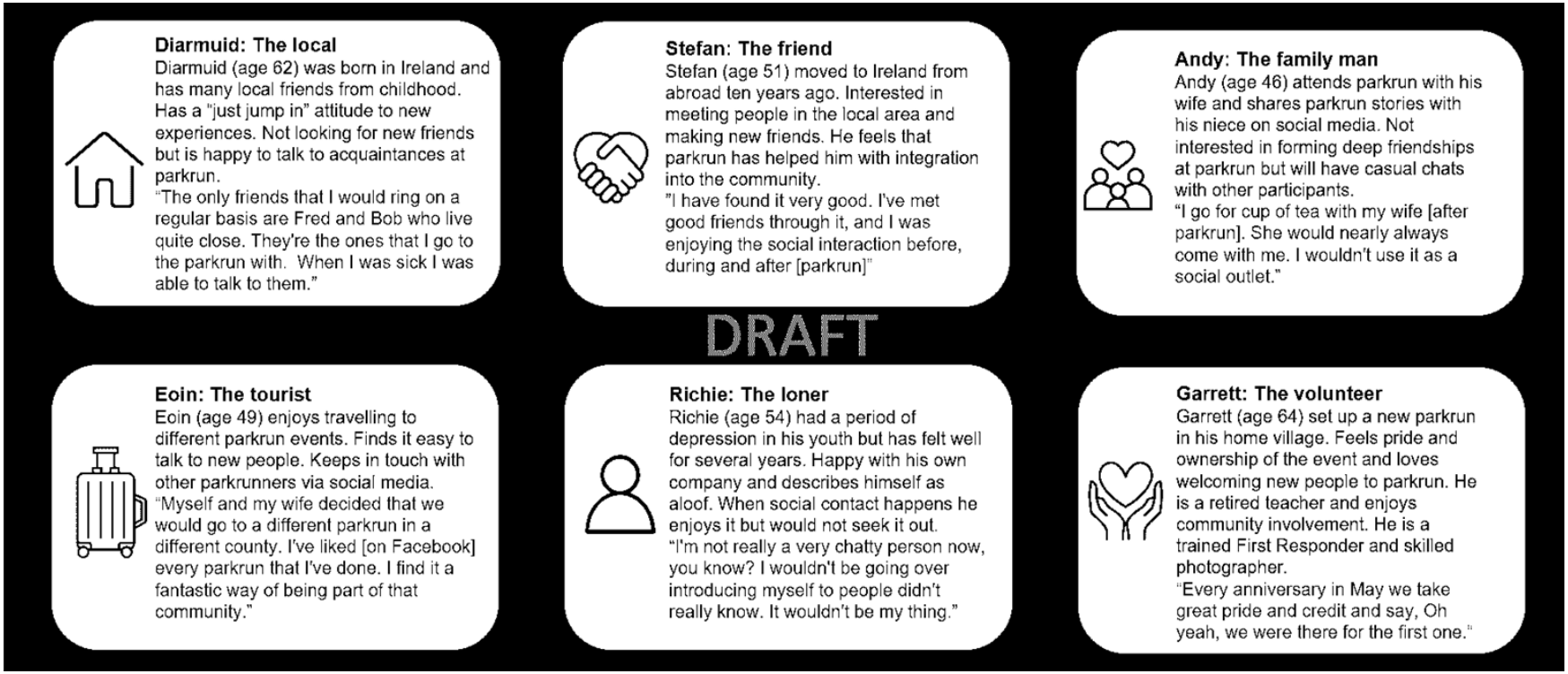


Figure 11 Draft personas of middle-aged men attending parkrun in Ireland, used for the public and stakeholder consultation meetings

6.3.2 Stakeholder consultation meetings

The second and third objectives for this study were to seek the opinions of stakeholders to validate the set of personas, then to determine if personas are a useful tool when working with stakeholders to write policy and practice recommendations from research results. Online, small group, discussion meetings were planned, which is a recognised method of stakeholder consultation (Poetz et al., 2016). Representatives from each of the stakeholder types described by Concannon (2012), including members of the public, were invited to take part, with invitees recruited from social and professional networks of the PhD candidate. A total of 17 stakeholders were invited to take part, with this number chosen to reflect previous stakeholder consultation research (Sturge et al., 2023). Two stakeholders, one each from the Men's Sheds Association and Health Service Executive Suicide Resource office, declined to take part due to their availability. The final group of 15 was divided into two subgroups to facilitate discussion (Watson, 2020), following the guideline of 6-10 people for a group interview (Patton, 2015) while still ensuring a mixture of background and experiences among the participants. Two groups were as follows:

1. General public and parkrun participants (referred to here as the public group)

2. Healthcare service employees, policy advisors and health promotion professionals (referred to as the stakeholder group).

The public group were recruited using purposive sampling of people known to the PhD candidate, selected to provide a mixture of demographics, community involvement and parkrun experience. The group contained nine adults of mixed age and gender, four of whom were regular parkrun participants and included one volunteer parkrun Ambassador who is tasked with supporting new parkrun events. The remaining five were members of other community groups such as arts, cycling and martial arts. The participants represented city and rural residents from across Ireland. The list of participant demographics is shown in Table 12.

Table 12 Demographics of public consultation group participants

Participant number	Gender	parkrun participant	Community involvement
1	m	yes	Junior parkrun volunteer, community music
2	m	yes	Junior parkrun volunteer, disability services
3	f	no	Martial arts, uses park for dog walking
4	m	yes	Workplace wellbeing
5	m	yes	parkrun ambassador, athletics
6	m	no	Gaelic Athletics Association
7	m	no	Tourism
8	m	no	Martial arts
9	f	no	Active travel

Following guidelines on stakeholder group participants from Concannon et al (2012), the second group were selected using purposive sampling of people from the PhD candidate's professional network. This group will be called the stakeholder group for this study. The group had six participants and consisted of two representatives from the Health Service Executive national office (representing Irish Travellers and family resource centres), an employee of Mental Health Ireland charity, a local area social prescribing lead, a sports partnership co-ordinator, and a representative from the local rural development office. A list of the stakeholder group participants is shown in Table 13.

Table 13 Stakeholder consultation group participants

Participant number	Stakeholder role (employer)
1	Healthy County co-ordinator (health promotion)
2	Social prescribing coordinator (health service)
3	Outdoor activity advisor (mental health charity)
4	Mental health programme manager (health service)
5	Mental health engagement lead for Irish Travellers (health service)
6	Resource officer (rural development)

The draft personas (Figure 11) and question guide (Table 14) were emailed to each group member in advance of the meeting, to allow time for reading and preparation. Each consultation was planned to last no longer than two hours to maintain engagement (Patton, 2015). Consent to record the meetings and make a transcription was obtained from each participant using an online form on Qualtrics. A copy of the consent form can be found in Appendix 6.2. Meetings were held online using Microsoft Teams, with public and stakeholder consultation meetings on 14/11/2023 and 16/11/2023 respectively. Each meeting was recorded and transcribed using the Microsoft Teams live automatic transcription facility. The transcripts were reviewed along with the audio recording and transcription was updated manually by the researcher where necessary.

The semi-structured question guide for the consultation interviews was written to address the study objectives and address the following subjects:

- Introduce the topic of parkrun and its suitability for middle-aged men.
- Discuss if the personas are reflective of the population of middle-aged men that the group members have observed at parkrun or other community initiatives.
- Consider how the information in the personas could be used to make policy and practice recommendations to facilitate parkrun participation. Note what these recommendations would be.

- Consider if the personas would be relevant for other ages or genders at parkrun, and whether they could be extended to other community initiatives.

The questions and prompts for the consultation meetings can be found in Table 14.

Table 14 Questions and prompts for public and stakeholder consultation meetings

Questions and Prompts
1. Do you think parkrun is a suitable activity for middle-aged men in Ireland?
1a. Why? Why not?
2. Do you feel the personas represent men who attend parkrun?
2a. Are there any which are more typical than others?
3. Who is not represented by the personas?
3a. Would you add an extra persona to represent this man?
4. How can we use the personas in health promotion policy or practice recommendations?
4a. What information does it add that we don't have already?
5. Would these results apply to other age or gender groups who attend parkrun?
5a. What might be different for those groups?
6. Are there any other activities you can think of which would fit these personas?
6a. Are they relevant for choirs, martial arts, Men's Sheds, arts groups etc?

6.4 Results

This section will describe the outcomes from the stakeholder consultations, present the final set of personas and list the proposed policy and practice recommendations.

6.4.1 Stakeholder and public group consultation on personas

The public and stakeholder group members were in agreement that the six personas broadly represented the types of middle-aged men that attended community initiatives such as parkrun. Two changes were suggested by the public consultation group. They did not like the name *The loner* for Richie as they felt it had negative connotations. The group

suggested *The independent man* as an alternative, to describe a man who didn't socialise at parkrun but who was happy with his own company. The other change was to highlight that some men brought their children to parkrun. This was something which had been mentioned by some of the original study participants so children were included in the final description for Andy, *The family man*.

The consultation groups identified three additional personas from their lived experience and professional practice: the man who attends parkrun purely for the fitness aspect, the man who attends once and does not return and the man who never attends parkrun. Men representing these personas were not part of the Study Two cohort so were not added to the final persona list for this study, where the focus was to understand social connections and mental wellbeing at parkrun. Exploration of these additional personas is a potential area for future research to understand the full range of men who could attend parkrun events in Ireland.

During the consultation the two groups were asked "If we were going to help one of these men to have more social interaction, who should we focus on?" Both the public and stakeholder group agreed that the primary persona (the focus of health promotion activity) should be *Stefan, The friend,* as he is interested in meeting new people through parkrun. It was also noted in the public group that parkrun participants should be mindful of *Richie, The independent man,* to make sure that he really is content with being alone.

Both groups were asked if they recognised the six personas from other community initiatives. The participants agreed that they had seen men representing the majority of personas at Men's Sheds, martial arts groups and golf clubs. The exception was *Richie, The independent man* as the stakeholders felt this persona might not be motivated to attend groups which had social interaction as their main focus. Future research could explore the personas of men attending these community initiatives to explore similarities and differences between them and parkrun participants.

6.4.2 Final set of personas

Following the public and stakeholder consultation meetings the six final personas were created (Figure 12). These will be available for the parkrun charity and any other interested stakeholders.

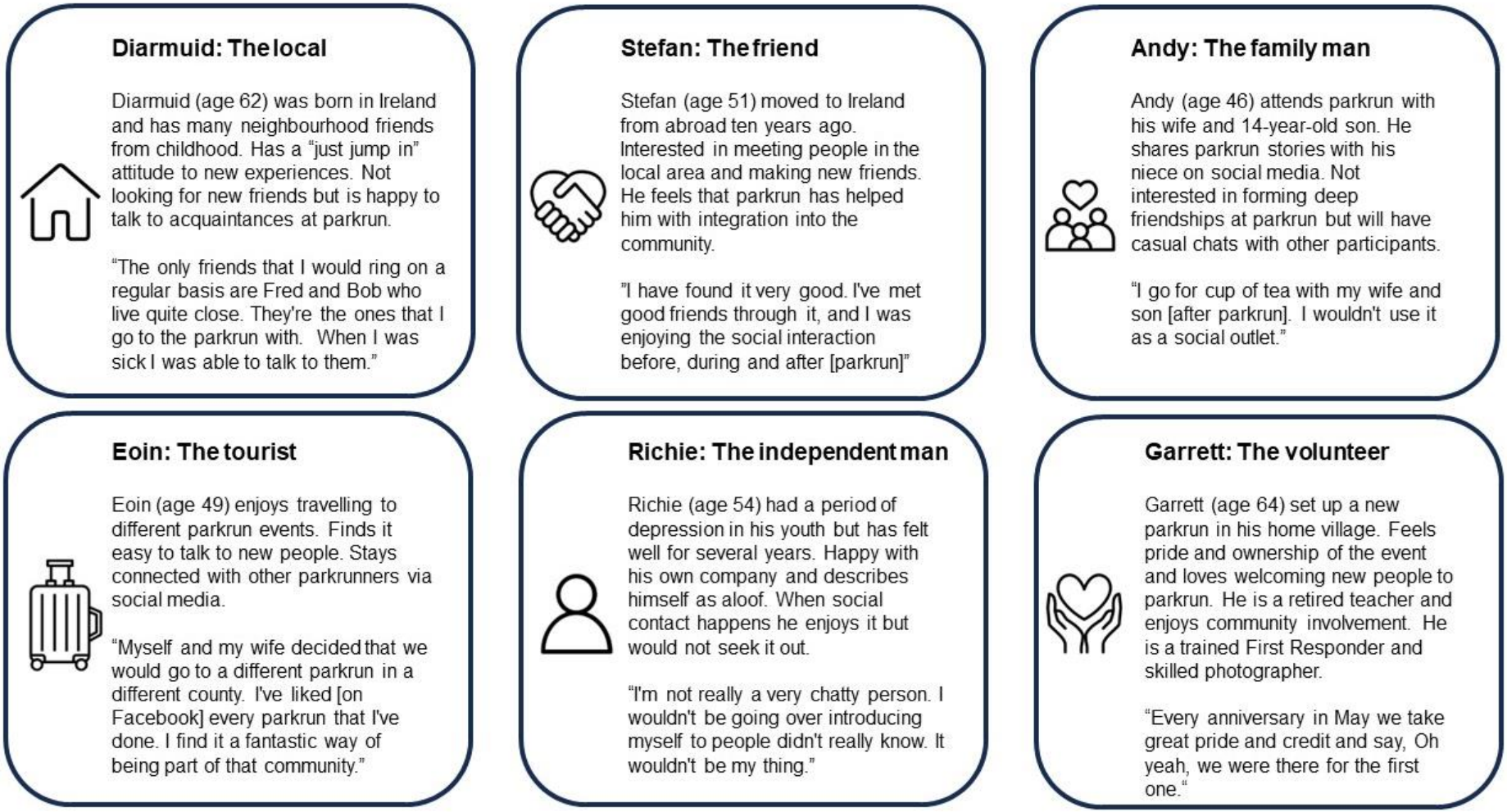


Figure 12 Final version of six personas representing the social styles of men aged 45-64 years participating in parkrun in Ireland

6.4.3 Stakeholder and public group consultation on policy and practice recommendations

To contribute to policy and practice recommendations the stakeholder group members were asked to describe the type of health promotion intervention needed to improve social interaction for the primary persona, *Stefan, The friend*. One person suggested an extension of the Mental Health Ireland "Hello, How are you?" campaign; a one day event to promote speaking to others about feelings. A small number of parkruns took part in the campaign in 2023 (Mental Health Ireland, 2023) so this idea is feasible. Another proposal was to have a social officer for parkrun, to encourage social support among parkrun participants. A virtual welcome for new participants, using social media, or an in-person buddy scheme were other ideas suggested. The stakeholders agreed that a barrier to socialising at parkrun was the weather, as Ireland often has rain or wind. A sheltered area near the parkrun finish line was highlighted as an improvement to facilities which would to support social interaction.

The public consultation group were also asked for recommendations to enhance the social experience at parkrun for the persona of *Stefan, The friend*. These ideas were then included in the policy and practice recommendations. One proposal was for all parkrun participants to make more effort to interact, without putting pressure on anyone who did not want to be involved in that aspect of parkrun. Another recommendation was to have a volunteer based at the arrival area to welcome new participants. Finally, a friends and family open day was suggested as a way to bring more men to parkrun in a supportive manner.

6.4.4 Policy and practice recommendations

The results of the stakeholder consultations using the personas were used by the PhD candidate to develop a set of policy and practice recommendations, listed below. These recommendations are based on data from a set of interviews with middle-aged men who participate in parkrun in Ireland. As the data was not collected for the explicit purpose of persona development these policy recommendations are an example of the type of recommendation which could be made using personas. Further research should be undertaken before implementation of these recommendations.

Example policy recommendations for parkrun, sporting bodies, arts and culture groups or government health promotion bodies include:

- Encourage community initiatives to have a social officer as part of the organising committee.
- Recognise that some middle-aged men will attend community initiatives with the goal of developing social connections. This will not be the case for all men, so care should be taken not to alienate the men who wish to attend activities without engaging in social contact.
- Develop schemes to encourage social contact for those who wish to engage in socialising at community initiatives, including interventions to encourage introductions to new people for those who need support with this.
- Provide funding for facilities which encourage social contact for outdoor activities. This could include shelters in parks, outdoor seating areas and suitable areas for cafés.
- Ensure that social prescribers are available to link middle-aged men to community initiatives to support their mental wellbeing.
- When marketing community initiatives include social benefits in marketing messages, while ensuring that the option not to socialise is also noted.

Example practice recommendations for parkrun developed from the stakeholder consultations are:

- Recognise that some men attend community initiatives as a social opportunity and explore ways to enhance that social experience without alienating men who wish to simply run, walk or volunteer without social interaction.
- Introduce a buddy system or welcome volunteer to support men who are nervous about attending for the first time.
- Consider holding a parkrun open day for family and friends to participate in parkrun together.
- Continue to link with national campaigns to encourage social interaction. An example is “Hello, How are you” from Mental Health Ireland (2023).

- Plan research to discover the wants and needs of men who have never attended the community initiative or who attend once and do not return. Explore the barriers to participation for these men.

6.5 Discussion

Despite a growing interest in the use of personas for health software design and public health they are rarely used in health promotion activity related to community initiatives. This study described the design of a set of six personas to represent the social needs of 39 middle-aged men who attend parkrun in Ireland and explored the utility of personas in stakeholder discussions to produce policy and practice recommendations to facilitate and participation in parkrun.

The personas were used as the focus for consultation with the general public, parkrun participants and other stakeholders. They stimulated discussion and enabled both groups to select one persona who they felt represented a group to target for health promotion activities (the primary persona). Similar to that demonstrated in traditional user-centred design (Miaskiewicz & Kozar, 2011), the personas allowed the groups to consider the issue of engagement with parkrun from the perspectives of different men, and to reflect on the wants and needs of people that were not like themselves. The personas allowed the public and stakeholder groups to quickly identify which type of man to focus on for health promotion activity. They also provided a tool for brainstorming of ideas to meet the needs of that type of man. Considering the research from Lefkowich et al (2017) who noted that men prefer a tailored approach to health promotion, the current study suggests that personas may be one way of meeting that need. Previous studies have not used personas for this specific purpose so there is no comparator research for this method.

The members of the consultation group did not suggest the use of personas to design social media campaigns but this is one potential use for the personas developed in this study. Personas have previously been used to communicate health information on social media (Massey et al., 2021). As social media is commonly used as part of parkrun's communication strategy the personas could be suitable to use to focus communication on the populations identified in the personas. This is an area which should be explored further, either by consultation with the parkrun marketing team or by an extension of this study.

Until the recent publication of a method from Jansen (2022) the process for persona design used a wide variety of methods and was not always evidence-based. There has been some debate about whether personas should include fictitious content to make them more emotive, with some designers finding it hard to avoid (Vincent & Blandford, 2014). This could lead to concern regarding their usefulness in the area of health promotion, a discipline which strongly favours an evidence-based approach (Barry et al., 2012). This study aimed to use an evidenced-based approach by only including information which had been obtained from the online interviews with men who attend parkrun in Ireland. The advantage of using this method was that it could promote confidence in the validity of the final personas as they are evidence-based. The drawback was that the personas exacerbated existing limitations in the original study as the interviewees did not include men from often-excluded groups such as those with physical disabilities or minority ethnicities. It should be noted that men from these groups are small in number among parkrun attendees in Ireland (Haake et al., 2019a) which means that they should be even more important to consider when designing health promotion interventions to facilitate participation. The stakeholders commented that there was no ethnic diversity in the personas and it was tempting to change one of the persona names and histories to reflect this (despite the lack of data from the interview study). One way to overcome this in future studies would be to use a mixed-methods approach to persona design (Holden et al., 2017; Jansen et al., 2022), combining a quantitative study to reach a wider range of users then adding a qualitative study to obtain a detailed view of their goals using the method proposed by Holden et al (2017).

In the current study there was no consideration of men who have limited participation with parkrun, or who do not attend parkrun at all as these men were not targeted as part of the original data collection. Previous studies have used a combination of data and imagined scenarios (Vincent & Blandford, 2014) to ensure a wide range of personas were presented. While this is not an evidence-based approach it could allow a more well-rounded perspective. In the current study a compromise was to introduce the concept of a seventh persona *The missing man*. Each consultation meeting commenced with a discussion to explore who that man might be, from the experience of the public and stakeholders.

The segments method used by Sport England (Bullough, 2012) and the typology construction deployed by Janssen et al in their recreational runners study (Janssen et al., 2020) both used large data sets and quantitative methods to describe their subpopulations. As with any quantitative method this may lose the nuance that might be needed to understand the needs of a particular subpopulation (Creswell & Creswell, 2023; Ringsted et al., 2011). When creating personas it is possible to use qualitative data and a small sample size to focus on the needs of a specific population, such as middle-aged men in Ireland. This has the advantage of being able to tailor any health promotion interventions to the specific subpopulation. However, one disadvantage is that the results are not directly translatable to other populations and the persona creation process would need to be repeated with different sub-populations.

In this study, the interview data which was used for persona development was not originally collected for this purpose. If a further set of personas was to be developed to represent parkrun participants the interviews should be designed with persona development in mind. Additional information which could be useful includes socioeconomic status, employment status, length of time registered with parkrun, frequency of parkrun participation and distance travelled to parkrun. This would allow for a more rounded set of personas, following the guidelines of Guan et al (2021) rather than describing purely the social needs of each persona.

6.6 Dissemination of information

The information in this chapter was presented orally by the PhD candidate to Arabella Gilby Payne, commercial partnerships manager at parkrun, on August 15th 2024. The use of personas in parkrun marketing, communications and health promotion was discussed, with the conclusion that parkrun could use a more research-driven approach to parkrun development (Payne, 2024). The contents of the chapter have been prepared for publication in 2024.

6.7 Methodological considerations

The personas developed in this study only focus on the social element of parkrun participation. This was useful when considering interventions to improve social

connections at parkrun. However, the personas should be used with caution if they are used for other health promotion purposes.

One limitation for this study is that the participants in the public and stakeholder group were chosen from the PhD candidate's social and professional network. The candidate was mindful to include a range of participants with different social and professional backgrounds, but selecting people unknown to the candidate may have provided an even broader perspective on the topics discussed.

The interview data which was used to develop the personas was originally collected for a different purpose. The PhD candidate acknowledges that the data may have differed if the interviews had taken place with the original goal of persona development. This is a limitation of this study and associated policy and practice recommendations should be viewed with this in mind. The personas did appear to be a useful tool for stakeholder discussion, so a further set of interviews should be planned with the explicit purpose of persona development.

The personas were developed from the interview data collected during Study Two (Chapter Four). The methodological considerations for Study Two should therefore also be applied to this study. Briefly these include a lack of ethnic diversity, lack of information about socioeconomic status of the interviewees and no interview data from men who volunteer at parkrun without sometimes running or walking. One way to manage this limitation would have been to include some additional details within the set of personas based on data from the parkrun Health and Wellbeing study, analysed in Study One (Chapter Four). Variations in ethnicity, socioeconomic status and parkrun participation type could have been highlighted using this data. Observational data gathered during parkrun visits by the PhD candidate could also have been used to develop the personas, while still maintaining an evidence-based approach.

6.8 Conclusion

This chapter described the process of persona design using a data-driven approach. It showed that qualitative data from 39 interviewees can be used to create six personas to represent social styles of middle-aged men at parkrun in Ireland. The personas were accepted as a useful tool when engaging in stakeholder and public consultations to write

tailored health promotion practice and policy recommendations. These recommendations aimed to facilitate and maintain parkrun participation for middle-aged men in Ireland who are at risk of poor mental wellbeing. The next step in this project would be to apply these recommendations and evaluate their impact on the mental wellbeing of the parkrun participants.

This small scale persona development can be used as a pilot study for future projects, which could consider the whole parkrun experience of physical, mental and social impacts, rather than just the social needs of parkrun participants. A set of personas for parkrun participants could then be used for marketing or intervention design.

The use of personas in health promotion is a method rarely used outside of software design. The original contribution to knowledge in this study was that personas developed from interview data have utility in health promotion practice when writing policy and practice recommendations. Using evidence-based persona design will ensure the validity of this method in health promotion practice to support mental wellbeing.

Chapter Seven. Reflections on the PhD candidature

This chapter contains a critical reflection on the PhD candidature and the process of undertaking research contained in this thesis. This reflection, combined with the research results from each element of the mixed methods study, resulted in the final thesis discussion which will be detailed in Chapter Eight.

7.1 Introduction

7.1.1 Critical reflection in health promotion

Reflection is the process of thinking about incidents or experiences that have happened in the past (Driscoll, 1994; Driscoll, 2007). Critical reflection extends this process by also taking time to consider what can be learned from past experiences and how different actions might change processes or outcomes in the future (Tretheway et al., 2017). Critical reflection is part of professional development and has been commonly used in education and healthcare professions like social work or nursing (Bulman & Schutz, 2013; Driscoll, 2007; Fleming, 2007). It appears to be under-utilised in health promotion practice with only a small number of examples of critical reflection described in published literature (Fleming, 2007; Tretheway et al., 2017; Tretheway et al., 2015).

7.1.2 Reflection in health promotion research

Reflection allows the researcher to continue to assess and challenge the impact of their work on health inequities and social justice (Gregg & O'Hara, 2007; Tretheway et al., 2017). There have been calls for reflection to be included in health promotion competencies (Tretheway et al., 2017; Tretheway et al., 2015) as it is missing from the commonly used global health promotion competencies (Barry et al., 2012), despite being used by some researchers. In Chapter Five of this thesis reflection was an integral part of the qualitative thematic analysis method (Braun & Clarke, 2022). A reflection directly relating to that study is included in section 5.3.9 of that chapter. This chapter contains a reflection by the PhD candidate on the whole PhD process. As there is no standard format for either PhD thesis reflections or health promotion reflective practice, the model described by Driscoll (1994), commonly used in nursing, will be used to structure the reflection. The model was based on a description of continued professional learning by Boud et al (1987). Driscoll's model describes three steps for reflection (Driscoll, 1994):

1. What? What situation is the focus of the reflection.
2. So what? Thinking about the context of the situation.
3. Now what? Considering what happens next, or what could be done differently in the future.

The subsequent reflection is structured using these steps to write the reflection, using first person narrative, which forms the remainder of this chapter.

7.2 Reflection on the PhD candidature

7.2.1 Reflection step one: what?

The purpose of this reflection is to look back over the PhD candidature and note what I can learn from the experience, so that I, or others, might use this understanding in future research or health promotion practice. The PhD candidature was five years, as a part-time student. At the start of this period I was working as a clinical pharmacist in an acute mental health unit and outpatient clinic for patients with treatment resistant schizophrenia. After two years I moved to work in the discipline of health promotion at a university on a short-term teaching support contract. I worked remotely in Ireland and met my supervision team fortnightly online and in person once per year.

At the start of the candidature I had some research experience from my MSc and MA dissertations and had supervised some undergraduate projects but was not an independent researcher. I wanted to learn how to plan and implement a large research project and was looking forward to learning from my supervisors.

My candidature included the COVID-19 pandemic emergency period. Just before the pandemic began I was given access to a large dataset which was a blessing during the first year of the candidature as the pandemic control measures had triggered a pause in parkrun events globally. Being a part-time student also meant the pandemic had minimal impact on the research progress as I was not under time pressure to finish the project. By the time I was ready to move to the second phase of the study, the pandemic lockdowns were lifted and parkrun had restarted. The pandemic allowed me to observe, and experience for myself, how important social connections are for mental wellbeing and what it feels like to have social contact minimised. This reassured me that the hypothesis for my research was on the right track.

The key aspect of this project was my interest in the subject of parkrun and mental wellbeing. I was able to attend a parkrun nearly every Saturday and see up close the impact that my research might have on my local community. Using qualitative research turned a potential bias, if this was purely quantitative research, into a strength as I developed a deep understanding of the parkrun community which I could use in the reflexive thematic analysis.

7.2.2 Reflection step two: so what?

My experience as a pharmacist was beneficial in some aspects of my research; attention to detail, understanding of mental health conditions and confidence to talk to people of all ages and backgrounds. However my training as a healthcare professional was strongly based on the biomedical model of health and encouraged a postpositivist paradigm for research. In pharmacy clinical trials are the gold standard for proving efficacy of medicines and I had used that postpositivist paradigm for over 20 years. I had to ensure that I didn't fall back into that way of thinking as I used a pragmatic approach to my research, sometimes drawing on concepts from constructivism during the qualitative phase of the project. Having an awareness of my deep-rooted training and continually reflecting on new ways of looking at research was important throughout the PhD candidature, to interpret my results correctly.

As a change from the biomedical model taught in pharmacy I wanted to use a health promotion approach to my research. My MA studies had highlighted the benefits of the use of socio-ecological models of health described in health promotion underpinned by the Ottawa Charter. One challenge I had was that health promotion practice often involves the design and implementation of interventions, whereas I already had the "intervention" of parkrun which had grown organically from within a community of runners, and was not planned to be the global health promotion intervention which it has developed into over the last 20 years. In my research I was looking for ways to research the potential of this community initiative, and use the principles of health promotion to do this. The discipline of health promotion encourages the use of techniques from related academic disciplines so I drew on the literature from public health, sociology and health psychology where appropriate. I initially struggled with this multidisciplinary approach as I was used to working in one field as a pharmacist but as the candidature continued I embraced the

pragmatism paradigm and used whichever strategy that was appropriate to the study I was working on.

Now, having completed a large qualitative study, I understand that the real-world setting is not the same as a clinical trial and that research with communities will not prove, beyond doubt, that an intervention causes an effect (or not). I have learned to accept that evidence provided by qualitative research is beneficial because it allows us to understand the experiences of individuals. This may not be generalisable in the same way as clinical trial data but it is still valuable to learn about how health promotion activity can work in a community setting.

I feel that my research will have a real impact on the lives of people in my community and beyond. It contributes to the evidence base which may improve funding for initiatives like parkrun, and focus policy on preventative mental wellbeing measures.

Over the last five years I feel that I have transitioned from being an apprentice to being a more independent researcher, acknowledging that I still have lots more to learn and practice. I enjoyed the interview data collection phase of the research and being able to present the stories of the participants.

While reflecting on the health promotion themes of equity and social justice I feel that my research may have contributed to a more meaningful real-world impact if I could have focussed purely on men from rural or disadvantaged backgrounds. These are the groups which have the highest risk of poor mental wellbeing and suicide, so a focus on improving mental wellbeing for these groups could have been a more strategic use of time and resources. This is where initiatives like parkrun may have the biggest changes to wellbeing and these groups need the most support with mental wellbeing. Taking a pragmatic approach, I could not focus purely on these groups during the candidature due to the small number of men from these backgrounds attending parkrun in Ireland.

7.2.3 Reflection step three: now what?

I would like to continue research into men's mental wellbeing, perhaps focusing on the perspectives of people from rural or disadvantaged backgrounds. Now that I have been through the process for the interview study I can learn what has worked for recruitment, consent and organising interviews so an extension study would not take as long. I could also use a smaller sample as the information power would be higher with a targeted group.

To reach my target group I need to really focus on where I can contact those men to recruit them for my study. The current study used social media and site visits. I could focus my site visits on parkruns which are within deprived or rural communities and speak to local community leaders to ask for culturally acceptable approaches to recruitment. I may need to use an Irish speaking researcher to assist with this. Community engagement and the use of co-researchers from the relevant communities would be beneficial for this research.

Thinking more broadly about the whole PhD process, if I had to start again I would have tried a different qualitative data collection method, such as PhotoVoice. I had used interview studies before so I knew I could confidently use that method. It was a pragmatic choice and was suitable for the research, but didn't challenge me as much as learning and applying a new method would have done. I completed PhotoVoice training in my final year of the candidature so I am looking forward to using this in future research projects.

Finally, I have been reflecting on how the PhD candidature has impacted my own health. I was a regular parkrun participant before the start of the PhD but it has now become a regular part of my weekend, and something I will continue beyond the PhD. The topic of my research has highlighted the importance of community support for my own mental wellbeing. I have ensured that I continued my participation in community musical societies throughout the candidature, to make and maintain social contacts and take a physical break from the office. Performing on stage has also provided transferrable skills such as confidence in presenting my research. I really enjoyed this period of time as a PhD candidate and am looking forward to a career in academia.

7.3 Conclusion

This chapter described a reflection by the PhD candidate using Driscoll's model (Driscoll, 1994). These thoughts and ideas have been used when describing and discussing the results and implications of the mixed methods study described in this thesis. The following chapter contains this discussion along with concluding remarks for the thesis.

Chapter Eight. Discussion and conclusion

8.1 Introduction to the chapter

This chapter will discuss the key findings from this thesis and consider how they relate to the theoretical framework and previous research. Methodological considerations and limitations are discussed. The chapter also highlights the original contribution to knowledge in this thesis on the subject of the mental wellbeing of parkrun participants in Ireland.

8.2 Brief overview of research aim, objectives and key findings

The research aim was to explore the mental wellbeing of parkrun participants in Ireland and understand the factors which influence any changes to mental wellbeing following parkrun participation. This was originally outlined in Chapter One.

The research in this thesis had the following objectives:

1. Complete a literature review to understand what is already known on the subject of mental wellbeing at parkrun.

2. Use secondary data from a survey of parkrun participants in Ireland to learn about the mental wellbeing of parkrun participants in Ireland and explore how the social experiences of parkrun participants in Ireland differ by gender, age and parkrun participation type.

3. From the results of (1) and (2), focus on a parkrun cohort to understand more about their social experiences and mental wellbeing at parkrun in Ireland using qualitative methodology.

4. Develop personas to describe the social styles of middle-aged men who attend parkrun in Ireland. These were then used to consider how the knowledge gained can be applied to develop policy and practice recommendations.

This thesis contains a mixed methods study of mental wellbeing at the community initiative parkrun. The full findings within the mixed methods study are listed in the relevant section Chapters Four. Five and Six (Study One, Two and Three). A summary

of the findings is illustrated in Figure 13. This figure shows the stages of the mixed methods process and lists the key findings relating to each study.

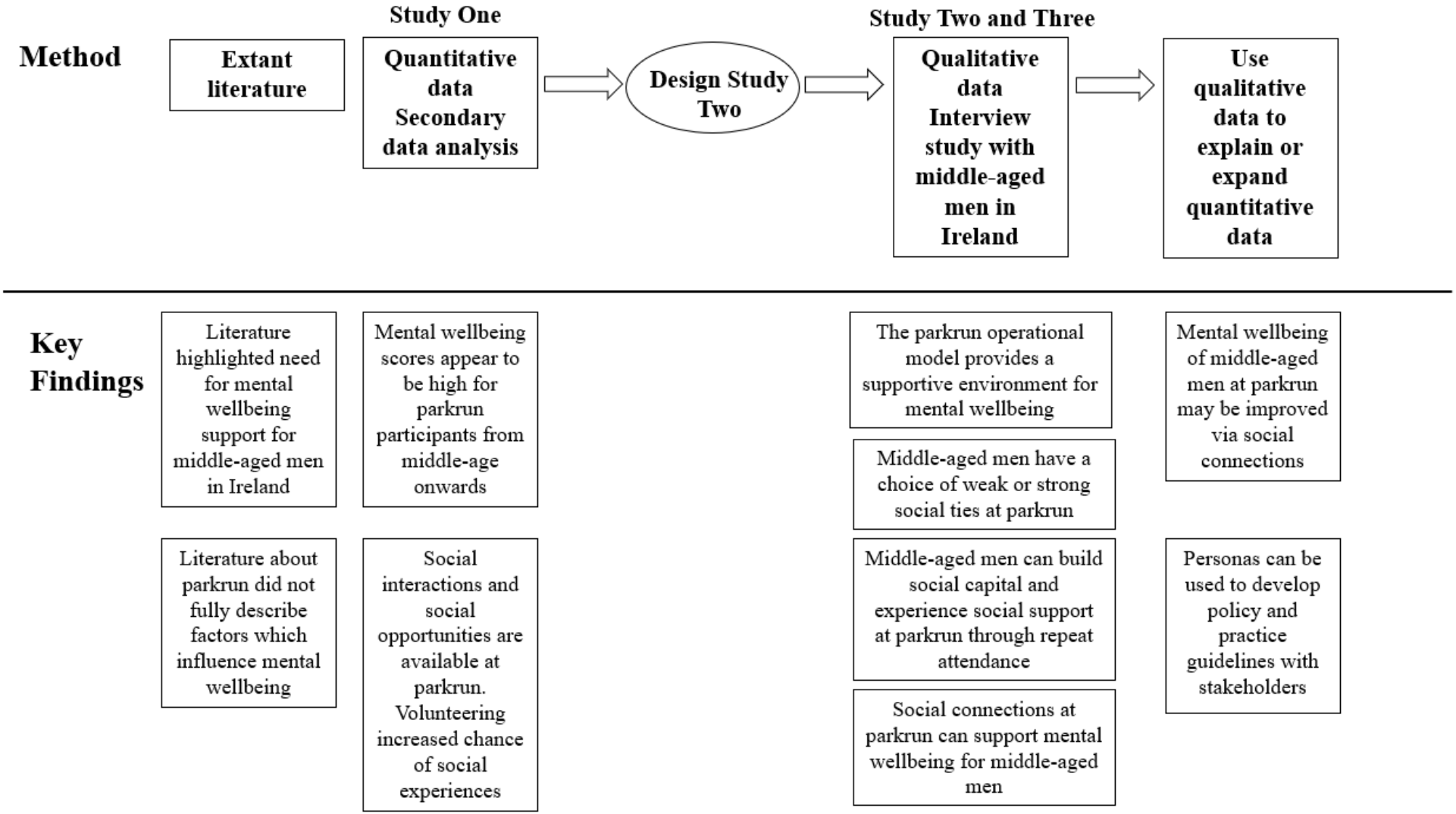

Method
Extant literature
Study One
Quantitative data Secondary data analysis
Design Study Two
Study Two and Three
Qualitative data Interview study with middle-aged men in Ireland
Use qualitative data to explain or expand quantitative data
Key Findings
Literature highlighted need for mental wellbeing support for middle-aged men in Ireland
Mental wellbeing scores appear to be high for parkrun participants from middle-age onwards
Literature about parkrun did not fully describe factors which influence mental wellbeing
Social interactions and social opportunities are available at parkrun. Volunteering increased chance of social experiences
The parkrun operational model provides a supportive environment for mental wellbeing
Middle-aged men have a choice of weak or strong social ties at parkrun
Middle-aged men can build social capital and experience social support at parkrun through repeat attendance
Social connections at parkrun can support mental wellbeing for middle-aged men
Mental wellbeing of middle-aged men at parkrun may be improved via social connections
Personas can be used to develop policy and practice guidelines with stakeholders

Figure 13 Mixed methods design with key findings

In Figure 13 the key findings from the thesis are listed under the related study of the mixed methods study. Each of these key findings will now be described in more detail.

The literature review in Chapter One, Introduction, found that middle-aged men in Ireland are a sub-population who are at high risk of exhibiting poor mental wellbeing. This was linked to increased risk of mental health conditions and higher suicide risk compared to the general population of Ireland. The review of parkrun research in Chapter Two showed that there is a body of research suggesting that parkrun can impact mental wellbeing, with a second body of literature describing social experiences at parkrun. The literature review highlighted gaps in research related to the factors which influence the impact of parkrun on mental wellbeing and the possible link between mental wellbeing and social connections at parkrun.

The secondary data analysis described in Chapter Four found that mental wellbeing of parkrun participants appeared to be higher than the general population. There were age differences in mental wellbeing scores for people participating in parkrun with people from middle-age and older reporting higher scores. The age differences in mental wellbeing scores differed from the general population scores but there was no indication of direction of the relationship or proof of causation. The trend in age differences of mental wellbeing scores was the same for both genders. The results of this study also indicated that parkrun was place where social interaction and social opportunities can take place, in addition to the running, walking or volunteering. Survey respondents who volunteered at parkrun noted a higher number of social interactions and social opportunities when compared with parkrun participants who did not volunteer.

The results of the secondary data analysis also suggested that parkrun participants from middle-age and older are a population who have mental wellbeing outcomes worth exploring further, such as higher wellbeing scores than would be predicted from reference scores in the general population. This knowledge was combined with the findings of the literature review and a decision was made to focus on the sub-population of middle-aged men in Ireland for the second study.

The findings of the qualitative study, reported in Chapter Five, found that parkrun provides a supportive environment for mental wellbeing. The middle aged men noted that both strong and weak social ties developed through parkrun participation. A choice of

social connection was available which may contribute to wellbeing through self-determination theory. This is a finding which invites further research as this theory has been linked to positive health behaviours in other health promotion studies. Strong and weak social ties at parkrun provided social support. Social connections developed after repeated participation in parkrun. Some men described the social connections at parkrun as supportive for their mental wellbeing. This finding is an original contribution to knowledge: mental wellbeing of middle-aged men at parkrun may be improved via social connections.

The data and findings from the qualitative study were used to develop personas (Chapter Six). These were then used as a tool to develop policy and practice recommendations with two groups of stakeholders, including the general public. Personas have rarely been used to inform health promotion practice before, outside their use online, so using this method to design policy and practice recommendations for community initiatives is also an original contribution to knowledge.

8.3 Addressing the thesis research question

The key findings described above in section 8.2 can now be compared to the original research question: Does parkrun participation influence mental wellbeing for participants in Ireland and what are the possible factors which may influence changes to mental wellbeing following parkrun participation?

The findings in this thesis suggest that for the sub-population of middle-aged men in Ireland parkrun participation as a runner, walker, with the option of volunteering, can support mental wellbeing. One factor which may influence this change in mental wellbeing is the social experience associated with parkrun participation.

The findings in this thesis bridge the gap in literature between mental wellbeing outcomes at parkrun and social experiences at parkrun which had not previously been explored in depth. As discussed in Chapter One (introduction) previous research suggested that parkrun may have a positive influence on mental wellbeing (Grunseit et al., 2017; Rogerson et al., 2016; Stevinson & Hickson, 2014). Other studies describe the influence of social factors, including social capital, on parkrun initiation and continued participation (Cleland et al., 2019; Sharman et al., 2019; Wiltshire & Stevinson, 2018). Only three

studies have previously attempted to link social connections at parkrun with mental wellbeing outcomes (Davis et al., 2021; Grunseit et al., 2017; McNamara et al., 2020). The results from this thesis will now be compared with the results of these three studies.

The first study to link mental wellbeing and social connections at parkrun was by Grunseit et al (2017). Using a validated scale, the Personal Wellbeing Index, they compared scores for parkrun participants against reference scores for the Australian population. Their subgroup of parkrun participants aged 55-64 years scored higher than the reference scores. The results in this thesis in Chapter Four (Study One) show a similar trend, with older parkrunners scoring higher than expected for mental wellbeing. This thesis and the Grunseit et al (2017) study have the same limitation of being a cross-sectional study and not being able to demonstrate the reason behind the increased wellbeing scores in parkrun participants. One consideration is that people with higher than average wellbeing might be more attracted to parkrun or more motivated to attend; an area for further research.

The Grunseit et al (2017) study and the results in this thesis both propose a link between wellbeing and social connection at parkrun. Grunseit et al (2017) demonstrated a correlation between community connection at parkrun, measured using a self-designed survey question, and Personal Wellbeing Index score in males. This was the first study to suggest the connection between wellbeing and social connections for men at parkrun. The results of this thesis extend the knowledge gained from the research by Grunseit et al (2017) by focussing on mental aspects of wellbeing using the Short Warwick Edinburgh Mental Wellbeing Scale (SWEMWBS), rather than personal wellbeing which is a subjective measure of life satisfaction quality of life encompassing all aspects of wellbeing (International Wellbeing Group, 2013). Both measures are linked to mood and mental health (Santini et al., 2022; Tomyn et al., 2013) and have been shown to give valid results when trialled in the same population (Fung, 2019).

This thesis also deeply examined the type of social experiences initially described by Grunseit et al (2017) using an interview study and discovered more detail about the social connections, such as the choice of weak or strong social ties. The new findings in this thesis are important because we know that both types of social tie are linked to mental wellbeing (Berkman et al., 2000; Golden et al., 2009; Moreton et al., 2023; Thoits, 2011). Understanding that parkrun participation can offer both types of social connection gives us more information about the possible factors by which parkrun can support mental

wellbeing. This information could be useful when maintaining the operational model of parkrun, or when designing new community initiatives for middle-aged men. New initiatives should be designed to allow time and space for social interaction for men who wish to make social connections, while engaging in a purposeful activity.

Although using different measures to Grunseit et al (2017), Davis et al (2021) linked social outcomes with subjective enjoyment of parkrun. Subjective enjoyment is one phase of hedonic mental wellbeing (Waterman, 1993). Davis et al (2021) found that community inclusion and community support at parkrun had a positive impact on subjective enjoyment of parkrun. This thesis supports these findings for the sub-population of middle-aged men in Ireland, and extends the information to include both hedonic and eudaimonic aspects of mental wellbeing which are both measured by the SWEMWBS tool (Stewart-Brown et al., 2009). It is the combination of both these aspects of mental wellbeing which are supportive of mental wellbeing so the finding that parkrun participation is related to both is insightful and of particular use if recommending parkrun to middle-aged men who are at risk of poor mental wellbeing.

The study by McNamara (2020) exploring a parkrun site along a canal described themes relating to social and mental wellbeing outcomes. This geography study was small (n=12) and did not clarify whether the physical parkrun site was used during parkrun events so the results cannot be compared with this thesis in any meaningful way.

The results in this thesis reinforce the concept of viewing parkrun as a community initiative rather than purely a physical activity programme, particularly when considering activities to support mental wellbeing for middle-aged men in Ireland. The importance of the social connections at parkrun for mental wellbeing, along with the option to volunteer at the event, mean that parkrun offers much more than just a physical activity. This finding has implications for social prescribers as it highlights that parkrun participants can take part by volunteering to build social connections, with the choice to walk or run if they wish. This makes it a viable social prescribing for middle-aged men that might not wish to run at parkrun, but who would still like to be part of the local parkrun community. The parkrun operational model could also be used to design and implement new community initiatives to support men's mental wellbeing. The physical activity element could be replaced with any purposeful activity, such as arts, crafts or gardening, which have all been previously promoted for mental wellbeing with different operational models

(Lefkowich & Richardson, 2018; Lovell et al., 2014; O'Donnell et al., 2023; Tierney et al., 2024).

The next section will consider these findings within the framework of the Ottawa Charter for health promotion.

8.4 Use of the Ottawa Charter framework for this thesis

The Ottawa Charter for health promotion was used as the socio-ecological framework for the mixed methods study in this thesis. The thesis findings can be described using this framework at the population, community and individual level (WHO, 1986). Table 15 lists the five action areas outlined in the Ottawa Charter along with the relevant research finding from the thesis. The table is ordered with findings relating to the population at the top, moving through community findings and ending with individual findings.

Table 15 The contribution to knowledge in this thesis and the relationship to the action areas of the Ottawa Charter for health promotion

Ottawa charter action area	Contribution to knowledge in this thesis
Build healthy public policy	A list of policy and practice guidelines for parkrun have been designed with stakeholders using the mixed methods study results
Reorient health services	Social prescribers could facilitate attendance at parkrun using the policy and practice guidelines in the thesis and support repeat attendance for maximum benefit.
Create supportive environments	The mental wellbeing of middle-aged men at parkrun in Ireland could be related to social ties and the associated social capital and social support
Strengthen community action	The parkrun operational model could be used to design and implement new community initiatives for middle-aged men in Ireland
Develop personal skills	Volunteering at parkrun allows middle-aged men in Ireland to develop leadership skills and practice social skills

This is the first parkrun study to use this health promotion framework, possibly because parkrun was not initially designed as a health promotion initiative. It grew organically from a small local event to a global initiative, with several operational changes over the

years (parkrun UK, 2019). It has gradually evolved from a physical activity to a complete community initiative which now meets all of the action areas of the Ottawa Charter in various degrees. This knowledge allows future health promotion interventions for mental wellbeing to be developed using the parkrun model.

8.5 Policy recommendations resulting from the thesis

Policy recommendations are a way of using evidence from research to contribute to solving a policy problem or demonstrate that an existing policy is working well (Centre for Ageing Research and Development in Ireland, 2012). The findings from the studies in this thesis support a continuation of the current policy recommendations for mental health promotion (Barry et al., 2024) particularly in relation to support for social prescribing and the provision of community initiatives listed in Ireland's Stronger Together guidelines (Health Service Executive, 2022). These guidelines are relatively new, and implementation has not been fully assessed so recommendations related to these guidelines are timely. The policy recommendations listed in Chapter Six (Study Three) are for health promotion policy makers and funders of community initiatives. In Ireland this group would include the Health Service Executive (the public health service provider for Ireland) and governmental organisations such as Sport Ireland and Healthy Ireland.

A number of policy recommendations resulting from the stakeholder consultation have been listed in Chapter Six (Study Three). This section will describe additional policy recommendations resulting from the findings of the thesis as a whole.

The findings of Study Two (Chapter Five) show that some middle-aged men attend parkrun with friends, family and work colleagues of all ages and genders, with some being introduced to the event by these. These results support previous research which describes friends and family as facilitators of parkrun participation (Stevinson et al., 2015). Therefore, supporting community initiatives which are mixed gender may facilitate initial participation and ongoing engagement with community initiatives like parkrun. Mixed gender offerings, in addition to a range of single gender initiatives, like Men's Sheds or Men on the Move, ensure there is an option to suit the preference of all men.

As it appears that community initiatives such as parkrun can be supportive of mental wellbeing for middle-aged men in Ireland policy makers should encourage the provision

of community initiatives in areas where men are most at risk of poor mental wellbeing including rural areas (O'Donnell & Richardson, 2020). Using a health promotion approach, community empowerment strategies such as funding and practical support for new initiatives could be used to support the development of new initiatives.

Social prescribing is already part of the Sláintecare primary care strategy to promote health and wellbeing in the community (Government of Ireland, 2023). The results in this thesis add to the body of evidence which supports the recommendation of community initiatives for mental wellbeing. Policy makers should continue to fund and support social prescribing schemes to facilitate access to community initiatives like parkrun for the people most in need, alongside continued funding for the initiatives.

The policy recommendations resulting from this thesis can be summarised as follows:

- Continue to fund and develop social prescribing schemes as part of the Sláintecare strategy.
- Ensure that social prescribing practitioners are aware of the range of available community initiatives which could be recommended to men. Emphasise that universal initiatives (all ages and genders) may be appropriate for some men.
- Provide funding and support for community initiatives and offer practical help to set up new initiatives. Use an empowerment approach to allow communities to set up initiatives which interest them and meet their needs.

8.6 Practice recommendations

The thesis findings have implications for health promotion practice involving design and implementation of parkrun and other community initiatives. A number of practice recommendations resulting from the stakeholder consultation have been listed in Chapter Six. There are findings from the mixed methods study contained in this thesis which can contribute to additional practice recommendations. These will be detailed in the following paragraphs and summarised in a list at the end of this section.

The results of Study One (Chapter Four) suggest that at parkrun participants under the age of 45 years may be more engaged by the physical activity phase of parkrun, whereas older participants may enjoy the social aspect in addition to, or instead of, the physical activity. When referring people to community initiatives through social prescribing,

providers need to consider the age of the participant. This may not be as relevant for community initiatives which are based around a less strenuous activity, like arts, music or crafts.

Results of Study Two (Chapter Five) show how volunteering at parkrun is an optional part of participation which can enhance social experiences. Using the parkrun model for other community initiatives could allow participants a range of options for engagement and may reduce barriers to participation. If the community initiative includes volunteering it may augment the potential improvements to mental wellbeing through social support and social capital.

The interviewees in Study Two described online social connections with other parkrun participants. Current options used by parkrun include social media platforms and online messaging groups, but the operational team should ask the participants which option they prefer. Social media contact should be optional as not all participants may wish to connect in this way.

One theme from Study Two, the parkrun experience can change over time, suggests that repeated participation is usually needed to gradually build weak and strong social ties with the other participants. When referring men to a community initiative they should be advised that social connections may take time to establish. Volunteering at the community initiative can enhance this process and should be recommended to men who wish to make new social connections. This theme also described how participating in community initiatives can help to develop personal skills such as social skills and communication skills. Regular attendance may be needed to develop these skills over time. Volunteering will offer a wider range of personal skills than attending the initiative without volunteering. The results of Study Three (Chapter Six) suggests hat personas may help to understand the perspective of different people ensure the initiative is accessible, welcoming and appropriate for the target population. When designing or updating community initiatives, providers could consider using personas to understand who the target for the initiative might be to ensure initiatives are tailored to the intended population. Support and guidance should be given to parkrun volunteer teams to facilitate inclusion of marginalised populations.

The results from the public and stakeholder consultation in Study Three (Chapter Six) also describe options which could be included to promote the supportive environment for social interaction such as physical shelters at parkrun and buddy schemes. When designing or revising operational plans for community initiatives the plans should include these to maximise the opportunities for social connections.

One finding from Study One (Chapter Four) was that 18.5% of the survey respondents felt isolated at parkrun. Although further research is needed to fully understand this group, the recommendations made in Study Three (Chapter Six) for a buddy scheme or welcome process for new participants may be suitable as an intervention to reduce feelings of isolation at parkrun events.

The practice recommendations resulting from this thesis can be summarised as follows:

- Centre the community initiative around a purposeful activity to provide a focus for conversation.
- Include optional volunteering to increase social connections between participants.
- Allow friends and family to attend with the participant to facilitate participation.
- Include a welcome process or buddy scheme for new participants to ensure social connections and reduce anxiety for new participants.
- Include the option of social media for communication to enhance social connections.

These practice recommendations are suitable for community organisations and charities that operate community initiatives. The research in this thesis used parkrun in Ireland as an example of a community initiative, so recommendations specific to parkrun are aimed at the parkrun charity operations team in Ireland or globally. However, these guidelines may be useful for other community initiatives which are targeted for middle-aged men, or which include that population in their participants. Examples in Ireland are Men's Sheds, community gardening groups and community choirs but the recommendations are not limited to these groups.

8.7 Methodological considerations for the thesis

In the individual study chapters (Chapters Four, Five and Six) the methodological considerations and limitations of each study in the mixed methods process were discussed. Additionally, there are some methodological limitations which impact the whole thesis and the results should be interpreted in the light of these considerations.

8.7.1 Impact of COVID-19 pandemic

The first methodological consideration for the mixed methods study in this thesis is the timing of data collection with respect to the COVID-19 pandemic and associated lockdown measures. The quantitative study was a secondary analysis of data collected in 2018, before the COVID-19 pandemic. Ireland commenced public health measures against COVID-19 on March 12 2020 which included social distancing and travel restrictions (Government of Ireland, 2020). The qualitative study in this thesis took place from September 2022, one year after public health measures and associated social restrictions were lifted and parkrun events had returned following a pause during the pandemic (parkrun Ireland, 2021). The COVID-19 pandemic and associated lockdown measures had a negative impact on mental health and wellbeing globally (International Union for Health Promotion and Education, 2021; O'Connor et al., 2021) although the effects were not universal. Some sub-populations appeared to be more resilient to the psychological effects of the pandemic while others noted increased anxiety and depression throughout the lockdown period (Shevlin, Butter, McBride, Murphy, Gibson-Miller, Hartman, Levita, Mason, Martinez, McKay, Stocks, Bennett, Hyland, & Bentall, 2023). People with a history of mental health conditions and those reporting loneliness were likely to record mental distress during and after the lockdown period in the UK (Shevlin, Butter, McBride, Murphy, Gibson-Miller, Hartman, Levita, Mason, Martinez, McKay, Stocks, Bennett, Hyland, & Bentall, 2023). Longitudinal studies are ongoing to measure the longer term impacts of the COVID-19 pandemic and associated lockdown measures on mental health (Shevlin, Butter, McBride, Murphy, Gibson-Miller, Hartman, Levita, Mason, Martinez, McKay, Stocks, Bennett, Hyland, Vallieres, et al., 2023). In addition to research on mental health conditions after the pandemic other research explores the value of social interaction since the pandemic and the impact of this on communities and physical activity (Bian, 2020; Bowe et al., 2022; Landmann & Rohmann, 2022; Stevenson et al., 2021). Looking specifically at the parkrun population

a longitudinal study reported a reduction in connection with others over the pandemic period, along with impaired mental health and wellbeing (Quirk et al., 2022). The study showed that happiness and life satisfaction among the parkrun population in the UK declined during the pandemic period, with the effect felt more strongly by females and younger adults (Quirk et al., 2022). The mixed methods study in this thesis therefore uses two different populations, pre and post pandemic, and data should be combined with caution as there could be differences in the factors which influence mental wellbeing impacts through social connections in each study population. The learnings from this thesis could be compared to a future study which uses the same model but in a fully post-pandemic population.

8.7.2 Diversity, equity and inclusion considerations for this thesis

Another consideration which concerns all aspects of the mixed methods study is diversity, equity and inclusion. A common critique of research is that it focusses on Western, educated, industrialised, rich and democratic participants (Henrich et al., 2010) while a recent review of sports and exercise research noted that there are still many unrepresented groups in publications (Dorsch et al., 2023).

In this thesis the data set used for the secondary analysis in Study One was less ethnically diverse than the population of Ireland, but as discussed in Chapter Four (Study One) the parkrun population in Ireland and the UK tends to have a higher percentage of white participants than the general population. Therefore understanding the barriers and facilitators to parkrun participation for under-represented ethnicities is important, to ensure this group are not further excluded. Future studies should have diversity built into the research design from the start (Asmal et al., 2022) perhaps using strategies such as those described in the King's Model for Minority Ethnic Research Participant Recruitment, including working with local community leaders during participant recruitment (Ray Chaudhuri et al., 2023). Use of the parkrun volunteer ambassador network, that has the remit to plan and implement outreach activities, is another resource to encourage a more diverse range of participants (Quirk, 2024).

Equity is an important concept in health promotion and all research and policy recommendations should ensure that there is no increase in the social divide (Marmot et al., 2008). To encourage a sample of interviewees from a diverse socioeconomic background the qualitative study included men from rural and urban parkrun settings and

used recruitment strategies which did not solely rely on social media access or high levels of literacy. However, recruitment did not take into account other aspects of socioeconomic status such as their living and working conditions (Marmot et al., 2008). As it is known from previous research that men in Ireland with low socioeconomic status have a high risk of poor mental wellbeing (O'Donnell & Richardson, 2020) it could have been insightful to have information on socioeconomic status to determine whether men from this demographic had been included and to take action during recruitment if men from a range of socioeconomic backgrounds were not represented.

The mixed methods study did not have an explicit plan for inclusion related to disabilities which could have meant men with disabilities were not fully represented in the study. The parkrun Health and Wellbeing survey and the demographics for interviewees for the qualitative study both used the same set of questions to collect information on long term health conditions and disabilities. In the qualitative study three interviewees reported health conditions on the demographics form but none of these were health conditions which might be considered a physical disability. The parkrun charity support the accessibility of parkrun events to people with physical disabilities and long term health conditions by using outreach ambassadors (Quirk, 2024) and collaborations with charities such as Vision Ireland to support vision impaired parkrun participants (Vision Ireland, 2018). In future parkrun research interviewees could be approach through the outreach ambassadors or relevant charity teams to encourage inclusivity and representation.

8.8.3 Generalisation of thesis results

An additional methodological consideration of this mixed methods study is generalisation and transferability of results. Study One (Chapter Four) used a data set from parkrun participants in Ireland which aimed to represent a wide geographical, socioeconomic and age range. The results of Study One had statistical-probabilistic generalisability, a term often applied to this type of quantitative research (Smith, 2018). Therefore the results are objective and could be extrapolated to apply to the parkrun population of Ireland and are not limited purely to the survey population, although the study limitations should still be considered. The sample was not fully representative of parkrun participants in Ireland, according to the report on the health and wellbeing study (Haake et al., 2019a). As the population of Ireland is different to other parkrun countries such as the UK in terms of

urban/rural divide, population density, ethnic mix and size of parkruns, the results are not directly transferrable to other parkrun countries.

Study Two (Chapter Five) was a qualitative study which described the subjective experiences of a group of middle-aged men attending parkrun in Ireland. Therefore statistical-probabilistic generalisation is meaningless (Smith, 2018). Instead the results could have transferrable and naturalistic generalisability. This means that the rich descriptions in the reported results can allow the reader to consider if they have experienced similar outcomes in their own practice and whether the results could be transferred to a different population (Smith, 2018). Some researchers ask a group of researchers or practitioners to read qualitative study results and consider the transferability, including these findings along with the study results. This technique was used by Smith and Caddick (2015) who asked 100 readers to reflect on their research results. In this thesis some of the results from Study Two were shared with stakeholders in the form of personas in Study Three (Chapter Six). The stakeholders were asked if the results could be applied to other community initiatives that they were involved with. The positive responses from the stakeholders described in Chapter Six support the claim of transferrable and naturalistic generalisability for the results of Study Two.

8.8 Future research

The mixed methods study in this thesis contributes to the health promotion evidence base but there are several future studies which could continue to extend knowledge in this area. Future research relating to each individual study in this thesis have been described in the related chapters. In this section potential studies which follow the thesis as a whole will be discussed.

This thesis used a mixed methods methodology with results of the qualitative study focussing on middle-aged men in Ireland. Study Two supports the theory proposed in Study One that social interaction was a possible factor which could influence an improvement in mental wellbeing. This could now be explored for other demographics. One method would be a survey of all ages and genders attending parkrun with use of a validated scale to measure both the social interactions and mental wellbeing outcomes, allowing a direct statistical comparison of the two outcomes. One possible validated scale to measure social support is the Close Persons Questionnaire, used in the pivotal

Whitehall study in the UK (Stansfeld & Marmot, 1992) or the newer short version (Hanssen et al., 2019). The Short Warwick Edinburgh Mental Wellbeing Scale (SWEMWBS) used in this thesis could be used again to measure mental wellbeing. This would also allow a comparison of these thesis results with the new study, giving some insight into mental wellbeing in a post-COVID-19 population at parkrun.

This thesis did not fully explore alternative factors which influence changes to mental wellbeing following parkrun participation. Extensions of this research could consider the impact of time spent in nature or the influence of goal setting in addition to the social outcomes explored in this thesis. There also may be other factors which have not been explored in any previous literature.

In Chapter Six and in sections 8.5 and 8.6 of this chapter a range of policy and practice recommendations are described, based on the results of the thesis research. In health promotion practice evaluation is one of the core competencies (Dempsey et al., 2011). Future use of any of the policy or practice recommendations from this thesis should be fully evaluated, with the process of implementation and the mental wellbeing outcomes both detailed (Barry et al., 2019). The results of these evaluations can then be used to assess the impact of the research.

8.9 Concluding remarks

This thesis aimed to explore the mental wellbeing of parkrun participants in Ireland and understand the factors which influence any changes to mental wellbeing following parkrun participation. A mixed methods approach under a pragmatism paradigm was used to approach the research objectives.

Study One used a secondary data analysis of the parkrun Health and Wellbeing survey. The results suggested that mental wellbeing scores for parkrun participants in Ireland are higher than reference scores for those aged 45 years and older, but causation was not established. This study also detailed the types of social interactions and social experiences which were found at parkrun in Ireland with volunteering appearing to enhance the social experience.

Study Two focussed on a sub-population of middle-aged men in Ireland and used an interview study to explore their social experiences at parkrun and the relationship of those

experiences to mental wellbeing. The results showed that the men had a choice of social experience and could develop strong or weak social ties. Repeat attendance increased the chance of a range of social experiences, with social capital and social support both noted by the parkrun participants.

Study Three used the interview data from Study Two to develop of set of personas representing the social styles of middle-aged men at parkrun in Ireland. The personas were used to facilitate stakeholder discussion. A set of policy and practice recommendations were designed following the stakeholder consultation.

Overall the mixed methods study showed that mental wellbeing of middle-aged men at parkrun in Ireland may be improved by the social experiences which take place during parkrun participation.

The original contributions to knowledge in this thesis were that from a health promotion perspective parkrun should be considered as a community initiative rather than simply a physical activity. Using the socio-ecological framework of the Ottawa Charter for health promotion the research provided evidence that the parkrun operational model provides a supportive environment for supporting mental wellbeing for middle-aged men in Ireland. The choice of social experiences at parkrun is a possible factor which could influence the support of mental wellbeing in this group. In this population repeat attendance at parkrun and the addition of volunteering enhanced the social experience.

The finding in this study which has broader implications is that the parkrun operational model means it should be considered as a community initiative, not a physical activity. Other community initiatives to support mental wellbeing could be designed using this model which includes a purposeful activity, a choice of social connection and an option to volunteer. The provision of a range of community initiatives may contribute to building community capacity to prevent poor mental wellbeing and be part of a wider strategy of suicide prevention.

Using the Ottawa Charter as a framework for mixed methods research adds to the body of evidence that the Charter is still a useful framework despite being designed in the 1980s. Although there have been many changes in society such as the widespread use of social media, the Charter can still be applied and is flexible enough to incorporate those changes.

In conclusion, the research question for this thesis was: does parkrun participation influence mental wellbeing for participants in Ireland and what are the possible factors which may influence changes to mental wellbeing following parkrun participation? The results in this thesis suggest that the answer is yes, it does appear that participation in parkrun can support mental wellbeing, particularly for middle-aged men in Ireland and that social connection is one possible influencing factor. Future studies in health promotion can explore this finding in other populations at parkrun or with alternative community initiatives.

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Appendices

Appendix 4.1 Ethics approval for Study One. Initial certificate and amendment

Community-based physical activity and mental health; a case study of parkrun. (A secondary analysis of the parkrun Health and Well Being Survey data.)

Ethics Review ID: ER23166109

Workflow Status: Application Approved

Type of Ethics Review Template: No human participants, human tissue or personal data

Primary Researcher / Principal Investigator

Allison Dunne
(Health and Wellbeing)

Converis Project Application:

Q1. Is this project ii) Doctoral research

Director of Studies

Stephen Haake
(Health and Wellbeing)

Supervisory Team

Alice Bullas
Helen Quirk
(Sports Engineering Research Group),(PA, Wellness and Public Health)

Q4. Proposed Start Date of Data Collection: 07/07/2020

Q5. Proposed End Date of Data Collection : 30/04/2021

Converis - Ethics Review - Amendment Outcome

converis@shu.ac.uk
To Dunne, Allison

10/11/2022

- Dear Allison

Title of Ethics Review: Community-based initiatives and mental wellbeing: A case study of parkrun. Phase two - qualitative study.
Ethic Review ID: ER42513594
Amendment 1 Title: Extension to recruitment process.Update of recruitment poster. parkrun and wellbeing study

The amendment to the Ethics Review named above has been reviewed and the outcome is:

Amendment Approved

Please log back into the P12 tab to see any feedback.

If you have a query regarding this, please contact your Faculty Ethics Administrator in the first instance.

HWB - hwbethics@shu.ac.uk
STA - STAfrec@shu.ac.uk
SBS - sbsethics@shu.ac.uk
SSH - SSH-ResearchEthics@shu.ac.uk

Appendix 5.1 Participant debrief information

Sheffield Hallam University

Community-based initiatives and mental wellbeing: A case study of parkrun. Participant debrief.

Thank you for taking part in this study. Your participation is greatly appreciated.

Purpose of the Study
We previously informed you that the aim of this study was to find out more about the impact of parkrun on the mental wellbeing of middle-aged men in Ireland. The research will also explore the barriers to participation in community activities such as parkrun.

We realise that some of the questions asked may have provoked strong emotional reactions. As researchers, we do not provide mental health and wellbeing services and we will not be following up with you after the study. However, we want to provide every participant in this study with an accurate list of mental health resources that are available, should you decide you need assistance at any time. Please see information about local resources at the end of this form.

Confidentiality
You may decide that you do not want your data used in this research. If you would like your data removed from the study and permanently deleted please contact the research team within two weeks of taking part in the interview.

Final Report
When all the study data has been analysed each participant will be sent a brief report describing the findings of the research. Please note, this may take up to one year. If you would not like to receive a copy of the report, please contact the research team.

Useful Contact Information
If you feel that your mental health or wellbeing has been affected by taking part in this study you should talk to your own GP or contact one of the following organisations:
Samaritans: Freephone 116 123
HSE Your Mental Health helpline: 1800 111 888
If you need emergency help call 999 or 112 and ask for the ambulance service.

If you have any further questions or concerns about this research you can contact:

Researcher: Allison Dunne
PhD Candidate,
Email a.r.dunne@shu.ac.uk

Research supervisor: Professor Steve Haake
Email S.J.Haake@shu.ac.uk
Advanced Wellbeing Research Centre,
Sheffield Hallam University, UK.

Please keep a copy of this form for your future reference.
Once again, thank you for your participation in this study.

Appendix 5.2 Risk Assessment for Study Two

Community-based initiatives and mental wellbeing: A case study of parkrun. Risk assessment

Description of activity / area being assessed	Online interviews between PhD candidate and research participant using Microsoft Teams.	**Location**	Own home using video or audio interviewing software/ telephone
Assessed by (name & role)	Allison Dunne PhD candidate	**Signature & assessment date**	Allison Dunne 10/8/2022

Hazard (H) hazardous event (HE) consequence (C)	Who might be harmed	Current controls	Current risk LxC=R	Additional controls needed to reduce risk	Residual risk LxC=R	Target Date	Date achieved
Research participant welfare. Participant becomes distressed if emotionally upsetting topics such as suicide are discussed.	Research participant	The interviewer is an experienced mental health professional. Suicide will not be introduced as a topic unless the participant mentions it. If a participant is distressed the interview will stop immediately and referral to GP and support services will be recommended. If severe distress occurs the participant will be advised to call an ambulance or attend ED. The PhD supervisor will be informed of the incident.	Very unlikely and moderate	No further controls needed.	Very unlikely and moderate	-	-
Researcher welfare Research participants could give verbal abuse to the researcher.	Researcher	If any participant becomes abusive the interview will be terminated immediately. The researcher will report the incident to the PhD supervisor.	Very unlikely and minor	No further controls needed.	Very unlikely and minor	-	-

Consequence	Likelihood of hazardous event				
Catastrophic	Medium	High	Very High	Very high	Very High
Major	Low	Medium	High	High	Very High
Moderate	Very low	Low	Medium	Medium	High
Minor	Very low	Low	Low	Medium	Medium
Insignificant	Very low	Very low	Low	Low	Low
R = LxC	Very unlikely	Unlikely	Fairly likely	Likely	Very likely

Hazard (H) hazardous event (HE) consequence (C)	Who might be harmed	Current controls	Current risk LxC=R	Additional controls needed to reduce risk	Residual risk LxC=R	Target Date	Date achieved
Topics discussed could be upsetting (eg stories of mental or physical illness).		If any topic discussed is upsetting to the researcher they will move to a different interview question or terminate the interview. If the researcher is distressed they will contact their supervision team or SHU student wellbeing services at student.wellbeing@shu.ac.uk or 0114 225 2136.					
Safeguarding issues Research participant could disclose information which requires confidentiality to be broken and safeguarding procedures to commence (e.g. physical, emotional or sexual abuse, concerns for child protection, rape, self-harm, suicidal intent or criminal activity) or if a serious crime has been committed.	Research participant	The researcher has Children First safeguarding training and is a healthcare professional with reporting responsibilities under this legislation in Ireland (where the research will take place). In a circumstance in which the researcher is deemed or deems themselves to legally obligated to disclose information a meeting with - The PhD supervisor Steve Haake, - The SHU data protection officer: Helen Williamson: DPO@shu.ac.uk /	Very unlikely and major	No further controls are needed.	Very unlikely and major	-	-

Appendix 5.3 Ethics approval for Study Two

Community-based initiatives and mental wellbeing: A case study of parkrun. Phase two - qualitative study.

Ethics Review ID: ER42513594

Workflow Status: Application Approved

Type of Ethics Review Template: All other research with human participants

Primary Researcher / Principal Investigator

Allison Dunne
(Health and Wellbeing)

Converis Project Application:

Q1. Is this project ii) Doctoral research

Director of Studies

Stephen Haake
(Health and Wellbeing)

Supervisory Team

Alice Bullas
(Sports Engineering Research Group)

Q3b. External Investigator Details: Dr Helen Quirk, Research fellow, University of Sheffield, UK.

Q4. Proposed Start Date of Data Collection: 05/09/2022

Q5. Proposed End Date of Data Collection : 04/06/2023

Appendix 5.4 Certificate of approval from parkrun research board

Certificate of approval

APPROVED

parkrun Research Board

Title of study: Community-based initiatives and mental wellbeing: A case study of parkrun

Lead Investigator: Allison Dunne (PhD student, Sheffield Hallam University)

Date of approval: 5th September 2022

Valid until: 4th June 2023

Extent of approval: The researcher has permission to attend, and recruit for online interviews at, parkrun events in Galway, Cork, Roscommon, and Dublin, and to other parkrun events in Republic of Ireland if research requires.

This is to certify the parkrun Research Board has approved this study to go ahead as long as the code of conduct for researchers is adhered to at all times.

Steve Haake

Professor Steve Haake

Chair of the parkrun Research Board

Sheffield Hallam University | Advanced Wellbeing Research Centre

Appendix 5.5 Participant recruitment poster and flyer design

Sheffield Hallam University

☑ Are you a man aged 45-64 years?

☑ Do you live in the Republic of Ireland?

☑ Do you run, walk, or volunteer at parkrun?

WE NEED YOUR HELP!

- We want to find out more about the experiences of men aged 45-64 years who take part in parkrun 5km events.
- We would like to understand how running, walking, or volunteering at parkrun impacts your wellbeing.

Interested?

If you would like to find out more or register to take part please scan the QR code or contact the lead researcher Allison Dunne by email: a.r.dunne@shu.ac.uk

Scan QR code here to register or find out more

Appendix 5.6 Participant information sheet

Sheffield Hallam University

Community-based initiatives and mental wellbeing: A case study of parkrun. Participant information sheet.

Thank you for your interest in taking part in this study.
Community initiatives like parkrun are thought to be good for mental wellbeing. This research aims to find out more about the impact of parkrun on the mental wellbeing of middle-aged men in Ireland. The research will also explore the barriers to participation in community activities.

Why have you asked me to take part? You have been invited to take part in this research because you have taken part in at least one parkrun event as a runner, walker, or volunteer. You are a person who identifies as male, aged 45-64 years, and who lives in the Republic of Ireland.

Do I have to take part? It is up to you to decide if you want to take part. A copy of the information provided here is yours to keep, along with the consent form, if you do decide to take part. You can withdraw at any time before you have approved the transcript of your interview without giving a reason, or you can decide not to answer a particular question.

What will I be required to do? You will be asked to complete a short online survey to collect some information about you (for example, your age, home parkrun and type of parkrun participation). You may then be asked to take part in one interview with a researcher. This will be determined by the geographical area where you take part in parkrun, as the research team would like to interview a selection of parkrun participants from around Ireland. The researcher will ask you questions about your experiences at parkrun and the interview will last for up to one hour. Your responses will be video and sound recorded and later transcribed (typed out) to make a written document. If you wish, you can choose for the researcher to only record the audio part of the interview, instead of the full video being recorded.

Where will this take place? The online survey will be sent to you by email or text message. The interview will take place online using the video communication tool Microsoft Teams (which is similar to Zoom). Alternatively, you can take part using a telephone.

How often will I have to take part, and for how long? The online survey will take approximately five minutes to complete. If selected for interview, you will take part in one online interview lasting up to one hour, at a time that suits you. You will be given a copy of the written interview transcript to read and approve before it is used for the research study.

Are there any possible risks or disadvantages to taking part. Some of the questions asked in this research will be exploring mental wellbeing. For some people, talking about mental wellbeing can be upsetting. If you feel upset or unwell at any time during the interview you can stop immediately. Helplines for mental wellbeing support are listed at the end of this document.

What are the possible benefits of taking part? The research will not benefit you directly. However, the results will improve our understanding of how initiatives such as parkrun can

be used to support wellbeing for people who wish to attend these types of events in the future.

When will I have the opportunity to discuss my participation? The researcher will contact you after the interview to give you a copy of the written interview transcription for your approval. You will have two weeks to approve the transcript. There will be an opportunity at this stage for you to discuss your participation if you wish. You may decide that you do not want your data used in this research. If you would like your data removed from the study and permanently deleted please contact the research team within two weeks of taking part in the interview.

Will anyone be able to connect me with what is recorded and reported? All the information that we collect about you during the research will be kept strictly confidential. No one will be able to identify you in any ensuing reports or publications. The audio and/or video recordings of your activities made during this research will be used only for analysis. The written transcription of your interview may be used for illustration in conference presentations and lectures but you will not be identifiable from the information used. No other use will be made of the recording or transcription without your written permission, and no one outside the project will be allowed access to the original recordings.
The consent form containing your name and signature will be kept in a password protected file, separate from the project recordings and written reports. The two can only be linked by the researcher who has the code which links your name to your data. Video and audio recordings are not anonymous but will be stored securely with password protection and only accessed by the research team. As with any research project, confidentiality will be broken if the researcher has a strong belief that there is a serious risk of harm or danger to either the participant or another individual (e.g. physical, emotional or sexual abuse, concerns for child protection, rape, self-harm, suicidal intent or criminal activity) or if a serious crime has been committed. In this case the researcher will follow Sheffield Hallam University Safeguarding procedures.

Who will be responsible for the information when this study is over? The researcher and their supervision team at Sheffield Hallam University will have responsibility for the data when the study is over.

Who will have access to it? The researcher and their supervision team from Sheffield Hallam University will have access to the data. No other person or organisation will have access.

What will happen to the information when this study is over? Following completion of the study the written transcripts (without identifying information) will be archived within Sheffield Hallam University's Research Data Archive (SHURDA) for a period of 10 years. After 10 years all information will be destroyed and only published information will be available. A copy of all anonymised data will be held by the researchers to use at their discretion indefinitely.

How will you use what you find out? The information gained from this research will be used as part of a PhD thesis. It may also be used in research publications and academic presentations. You will not be identifiable in any of these communications.

How long is the whole study likely to last? This study will last for up to two years.

How can I find out about the results of the study? When all the study data has been analysed each participant will be sent a brief report describing the findings of the research. Please note, this may take up to one year. If you would not like to receive a copy of the report, please inform the research team.

If I feel that my mental wellbeing has been affected by taking part in this study, who can I talk to? You should talk to your own GP or contact one of the following organisations:
Samaritans: Freephone 116 123
HSE Your Mental Health helpline: 1800 111 888
Call 999 or 112 and ask for the ambulance service if you need emergency help.

Legal basis for research for studies.
The University undertakes research as part of its function for the community under its legal status. Data protection allows us to use personal data for research with appropriate safeguards in place under the legal basis of **public tasks that are in the public interest.** A full statement of your rights can be found at: www.shu.ac.uk/about-this-website/privacy-policy/privacy-notices/privacy-notice-for-research. However, all University research is reviewed to ensure that participants are treated appropriately and their rights respected. This study was approved by UREC with Converis number ER42513594. Further information at: www.shu.ac.uk/research/excellence/ethics-and-integrity

Details of who to contact if you have any concerns or if adverse effects occur after the study are given below.

Researcher/ Research Team Details:

Researcher: Allison Dunne
PhD Candidate,
Email a.r.dunne@shu.ac.uk

Research supervisor: Professor Steve Haake
Email S.J.Haake@shu.ac.uk
Advanced Wellbeing Research Centre,
Sheffield Hallam University, UK.

You should contact the Data Protection Officer if:	**You should contact the Head of Research Ethics (Dr Mayur Ranchordas) if:**
you have a query about how your data is used by the University you would like to report a data security breach (e.g. if you think your personal data has been lost or disclosed inappropriately) you would like to complain about how the University has used your personal data	you have concerns with how the research was undertaken or how you were treated
DPO@shu.ac.uk	ethicssupport@shu.ac.uk

Postal address: Sheffield Hallam University, Howard Street, Sheffield S1 1WBT
Telephone: 0044 114 225 5555

Appendix 5.7 Participant consent form

Sheffield Hallam University

Community-based initiatives and mental wellbeing: A case study of parkrun.

Consent form

This consent form will be sent to participants via email or text message using Qualtrics to collect the information.

We invite you to participate in this research project as a male aged 45-64 who has run, walked, or volunteered at a 5km parkrun event in the Republic of Ireland. Participation is completely voluntary and you may choose to not participate, or withdraw yourself at any time before the interview transcription has been approved, without reason or consequence. You have been given a copy of the participant information sheet for this project. If you would like another copy, or if you have any questions please do not hesitate to contact the lead researcher Allison Dunne a.r.dunne@shu.ac.uk or the PhD supervisor Professor Steve Haake s.j.haake@shu.ac.uk

Participant Consent

Please answer the following questions by ticking the response that applies

	YES	NO
1. I have read the Participant Information Sheet for this study	☐	☐
2. My questions about the study have been answered to my satisfaction and I understand that I may ask further questions at any point.	☐	☐
3. I understand that I am free to withdraw from the study at any time before I have approved the final interview transcript.	☐	☐
4. I wish to participate in the study as outlined in the Participant Information Sheet.	☐	☐
5. I consent to my written data to be used for research purposes.	☐	☐
6. I consent to my audio data to be used for research purposes.	☐	☐
7. I consent to my video data to be used for research purposes (you can say no to this question and still participate using audio recording only).	☐	☐

I consent to participate in this study:

- o I consent
- o I do not consent

Please provide your full name:

Please provide your date of birth:

Appendix 5.8 Demographics questionnaire

Demographics Collected using Qualtrics link
https://shusls.eu.qualtrics.com/jfe/form/SV_3wTKQLp2K7F6GLs

1. Date of Birth
2. Age
3. Gender
4. Eircode (if known)
5. Home parkrun
6. Choose one option that best describes your current participation at parkrun:
   I. Runner or walker only
   II. Volunteer only
   III. Runner or walker and volunteer
   IV. Registered but not yet participated
   V. Not registered with parkrun

   (if options IV or V are chosen, the participant will not meet the inclusion criteria and will not proceed with the research).

7. Are your day-to-day activities limited because of a health condition or disability which has lasted, or is expected to last, at least 12 months?
   I. Yes
   II. No
   III. Don't know/Would rather not say

   If I. yes go to Q8

8. What is your health condition? (select all that apply)
   - ADHD - Attention Deficit Hyperactivity Disorder
   - Alcohol or Drug Addiction
   - Allergies (any that limit your day-to-day activity)
   - Alzheimer's or dementia
   - Anxiety Disorder
   - Arrhythmia (abnormal heart rate) or Atrial Fibrillation (irregular heart rate)
   - Arthritis
   - Asthma
   - Autism and Asperger's
   - Bipolar Disorder
   - Cancer (please specify in next question)
   - Carpal Tunnel Syndrome
   - Chronic Migraines
   - Chronic Pain
   - COPD (chronic obstructive pulmonary disease) and Emphysema
   - Coronary Artery Disease (including angina, peripheral vascular disease)

- Crohn's Disease
- Degenerative Disc Disease
- Depression
- Disorders of the Spine
- Epilepsy or seizure disorder
- Fibromyalgia
- Gout
- Hearing loss or impairment
- Heart Failure
- Hepatitis
- High Blood Pressure (Hypertension)
- Interstitial Cystitis
- Irritable Bowel Syndrome
- Kidney failure or Chronic kidney disease
- Learning disability (e.g., dyslexia, dyspraxia)
- Liver Disease
- Lupus, or Systemic Lupus Erythematosus (SLE)
- Lyme Disease
- Multiple Sclerosis (MS)
- Neuropathy, Peripheral Neuropathy
- Obesity
- Organic Mental Disorders (including Organic Brain Syndrome)
- Osteoporosis
- Panic Attacks
- Parkinson's Disease
- Post-Traumatic Stress Disorder (PTSD)
- Reflex Sympathetic Dystrophy (RSD)
- Rheumatoid Arthritis
- Ruptured Disc
- Schizophrenia
- Scoliosis
- Sleep Apnoea
- Stroke (TIA, CVA; Cerebrovascular Accident)
- Thyroid gland disorder
- Traumatic Brain Injury (TBI)
- Type 1 Diabetes
- Type 2 Diabetes
- Ulcerative Colitis
- Venous Thromboembolism (DVT; Deep Venous Thrombosis & Pulmonary Embolism)
- Vision loss or impairment
- Other (please specify)

Appendix 5.9 Mental health literacy project, using data from Study Two

Understanding the term mental wellbeing. Results from interviews with 39 men aged 45-64 years attending parkrun in Ireland.

NB. The results of this study were presented at the School of Nursing, Midwifery and Health Systems Conference in Dublin, Ireland. 17th-18th August 2023. (Dunne, Quirk, et al., 2023).

During the literature review it was noted that there is not one clear definition for mental wellbeing, despite this term being used widely in social media, in the mainstream press and TV and on podcasts and charity campaigns. One definition for wellbeing (not mental wellbeing) has been proposed by Simons and Baldwin. "Wellbeing is a state of positive feelings and meeting full potential in the world. It can be measured subjectively and objectively using a salutogenic approach" (Simons & Baldwin, 2021). In some literature the term mental wellbeing is interchangeable with term positive mental health, a term introduced by (Keyes & Simoes, 2012).

In a research setting mental wellbeing often measured using the 14 item Warwick Edinburgh Mental wellbeing Scale or it's short, 7 item version (SWEMWBS) (Stewart-Brown et al., 2009). The scale considers various aspects of positive mental health with the following statements:

- "I've been feeling optimistic about the future
- I've been feeling useful
- I've been feeling relaxed
- I've been dealing with problems well
- I've been thinking clearly
- I've been feeling close to other people
- I've been able to make up my own mind about things" (Stewart-Brown et al., 2009).

As the questions in Study Two were focussing on mental wellbeing it was important that the interviewees had a clear understanding of this term before any questions were asked.

Therefore, as part of a larger study into the mental wellbeing impacts of the community initiative parkrun, middle aged men in Ireland who attend parkrun were asked "What do you understand by the term mental wellbeing?"

Method

The question on mental wellbeing was asked as part of the interviews detailed in Study Two (Chapter Five). The replies to the question "What do you understand by the term mental wellbeing?" were analysed using qualitative content analysis with inductive coding (using the men's own words with no pre-determined themes) (Clark et al., 2021).

Results

In Study Two 39 men were interviewed about their experiences at parkrun in Ireland. One of the men did not answer the question about the definition of mental wellbeing (although the term was defined for him during the interview). Therefore the results for this part of the study are based on interviews with 38 men aged 45-64 years attending parkrun in Ireland. The themes which were developed from the content analysis are shown in Table A1, along with quotes to illustrate each theme. The abbreviations rw for runner/walker and rwv for runner/walker/volunteer are used.

Table A1 Themes and quotes on the definition of mental wellbeing from middle aged men attending parkrun in Ireland.

Theme	Number of men	Example quote
Positivity	24	"Well, I suppose it's having a positive outlook in life" Karl, age 46, rwv.
Resources and resilience	19	"It's all about dealing with something because life's not smooth. There's always something gonna happen, but it's how you deal with it is the main thing" Steve, age 45, rw.
Personal feelings	17	"It's just being content rather than pleasure. That's what I mean, content in oneself and in one's relationships" Seamus, age 62, rwv.
Related to mental health conditions	14	"Not physically unwell but just just mentally not right. And when I say not right, I mean down or, or or or anxious" Eric, age 64, rwv.
Taking action to keep mentally well	12	"I suppose for me it's breathing space. It's time for myself" Rob, age 57, rwv.
Balance	5	"Trying to keep your emotions and thoughts and worries in balance" Dylan, age 64, rwv.

The participants demonstrated a range of understanding of the term mental wellbeing, with the majority mentioning some aspect of positive mental health. Some men had received training on mental wellbeing via their workplace but as one participant noted "it's probably more in the media now than it ever was" (Cormac, age 55, rw).

Discussion

Health literacy is recognised as a key concept in health promotion by the World Health Organization (Kickbusch et al., 2013). More than just being able to read it considers how people interpret health terms to allow them to apply them to their own health behaviours. A mental health literacy campaign for Ireland was launched in 2022 (Health Service Executive, 2023) in addition to Ireland's suicide reduction strategy, Connecting for Life,

which includes a goal to "improve the nation's understanding of, and attitudes to, suicidal behaviour, mental health and wellbeing" (Department of Health, 2015).

In the current study the men's descriptions of mental wellbeing were described by six themes (Table A1). Comparing these themes to the definition from Simons and Baldwin (2021) there is some agreement between the interviewees and the subjective measures with some mention of salutogenic principles where mind and body are connected. The interviewees did not describe the concept of meeting full potential which is included in Simons and Baldwin's (2021) definition of wellbeing.

If the results of the current study are compared with the seven descriptors in the SWEMWBS scale there is concurrence with four items, underlined in the list below:

- "I've been feeling optimistic about the future
- I've been feeling useful
- I've been feeling relaxed
- I've been dealing with problems well
- I've been thinking clearly
- I've been feeling close to other people
- I've been able to make up my own mind about things" (Stewart-Brown et al., 2009)

All the interviewees attempted to explain the term mental wellbeing although there was some confusion between the terms mental health, mental illness and mental wellbeing by men. Messages on the definition of mental wellbeing used from mass media and research may not align with how men are interpreting these in a real world setting. For future research in this area it would be useful to have a clear definition of mental wellbeing to allow researchers to easily compare results. When health promotion practitioners are speaking to middle-aged men they should be aware of the potential to misinterpret these terms and give time to fully explain the meaning.

Conclusion

This small study showed that the majority of descriptions of mental wellbeing were aligned with the standard definition used by researchers, although there is still capacity for confusion and misinterpretation. Understanding how middle-aged men describe

mental wellbeing in their own words is of benefit when engaging in social prescribing for this group and other populations at high risk for poor mental wellbeing and suicide.

Appendix 5.10 Advisory panel meeting minutes

Online meeting 09/08/2022 8pm-9pm using Zoom.

Meeting chair: Allison Dunne, PhD candidate

Attendees:

1. Female. Regular parkrunner (runner, not a volunteer), running club member, lives in rural area.
2. Male. parkrun Ambassador for Co Galway.
3. Male. Regular parkrunner and parkrun volunteer, parkrun tourist.
4. Male. Regular parkrunner and parkrun volunteer, from the target demographic (male aged 45-65 years)
5. Male. Health service employee. Regular runner but not a regular parkrunner. Has lived experience of a mental health condition.

Apologies from:

6. Male. Junior parkrun volunteer.
7. Male. Health service employee for Irish Traveller engagement.

Feedback on recruitment materials

The participants were given copies of the recruitment poster, participant information sheet and interview script one day before the meeting. Each was discussed in turn during the meeting and the following feedback was given:

1. Too many words, would like a photo to attract attention, remove the "benefits to taking part" section, keep the whole thing very simple and give additional information after clicking QR code.
2. One person advised to remove my own name from the poster. I will leave my name on as it adds authenticity to the project, potential participants can check that I am student at SHU etc.
3. Two people questioned the age range – why don't I include older men too? One felt that retirement was a key time for men's mental health and that I might not capture this with my project. I explained that I want to compare my results with other research from this age range, and that research in over 65's is a separate, but

also important, age category. I won't be changing the age range but should be prepared for more questions on the age limit in the future, and should prepare a smooth/quick answer for this.

4. Two people advised to add the parkrun logo to make it clear it was a project related to parkrun. This needs more consideration as the project is not funded by parkrun. Maybe an image of parkrunners may aid with parkrun recognition without using the logo? AD to discuss with SH/AB

Feedback on QR code process

The advisory panel were not all familiar with using QR codes but some tried it during the meeting and were happy with how it worked.

One panel member asked, "how will you know the interviewees really are parkrunners?" I replied that it would become clear during the interview if they were not parkrunners. The parkrun ambassador suggested collecting parkrun registration numbers as part of the sign-up process. This can then be checked on the parkrun Webfms system https://webfms-production.parkrun.com/ which I have access to as I am a core-team member for a junior parkrun. I feel that this could be seen as an abuse of the Webfms access unless specific permission is obtained from parkrun HQ. AD to discuss this with SH/AB.

Feedback on participant information sheet

The recruitment poster uses the word "wellbeing" but the participant information sheet uses the phrase "mental wellbeing". I explained that the reason for this is to attract people with none or any health conditions, not just those who were interested in talking about mental health conditions (although this is an important group who will be welcome to take part). I asked if the panel felt that participants would feel "tricked" or "annoyed" by this subtle change, as wellbeing can mean physical, social or mental.

The panel did not feel that they would even notice the difference, and definitely wouldn't be upset by this additional information. We discussed as a group that at this point the consent form has not been signed so the participant can immediately decide not to take

part if, for some reason, they did not want to discuss mental wellbeing. Result – keep the materials with the current wording.

The panel were invited to read the participant sheet after the meeting and give feedback by email if they had any additional comments on readability, understanding or any information they felt was missing.

Feedback on interview script

I explained that the interview script is an outline of what might be discussed, rather than a strict list of questions that must be adhered to.

One panel member really liked one of the first questions "Tell me about your first time at parkrun." He said it brought back lots of memories and he could easily talk about it for an hour. If this happened during the interview I would restrict the time spent on this section, unless very relevant information was being provided.

A different panel member thought the prompts were needed, especially for the section on "who do you interact with at parkrun". I explained that the prompts would be used if it looked as if the participant was struggling to answer that question – it had originated from a written question on the Health and Wellbeing survey. If several participants struggle the wording can be changed but it would be good to keep the wording if possible as it matches the original survey.

The panel discussed how they would feel about being video recorded during the interview. Some felt uneasy about the video – they didn't mind having the camera on for the interview but would prefer just the audio to be recorded. This is going to be offered as an option, with the interviewer making notes alongside the audio if visual information needed to be captured.

The panel were given a copy of the interview script and can supply additional feedback by email if they wish.

Final comments from the panel

The panel were all very supportive of the project. They felt it was worthwhile and that recruitment would be easy as parkrunners like talking about parkrun.

Appendix 5.11 Participant debrief document

Sheffield Hallam University

Community-based initiatives and mental wellbeing: A case study of parkrun. Participant debrief.

Thank you for taking part in this study. Your participation is greatly appreciated.

Purpose of the Study
We previously informed you that the aim of this study was to find out more about the impact of parkrun on the mental wellbeing of middle-aged men in Ireland. The research will also explore the barriers to participation in community activities such as parkrun.

We realise that some of the questions asked may have provoked strong emotional reactions. As researchers, we do not provide mental health and wellbeing services and we will not be following up with you after the study. However, we want to provide every participant in this study with an accurate list of mental health resources that are available, should you decide you need assistance at any time. Please see information about local resources at the end of this form.

Confidentiality
You may decide that you do not want your data used in this research. If you would like your data removed from the study and permanently deleted please contact the research team within two weeks of taking part in the interview.

Final Report
When all the study data has been analysed each participant will be sent a brief report describing the findings of the research. Please note, this may take up to one year. If you would not like to receive a copy of the report, please contact the research team.

Useful Contact Information
If you feel that your mental health or wellbeing has been affected by taking part in this study you should talk to your own GP or contact one of the following organisations:
Samaritans: Freephone 116 123
HSE Your Mental Health helpline: 1800 111 888
If you need emergency help call 999 or 112 and ask for the ambulance service.

If you have any further questions or concerns about this research you can contact:

Researcher: Allison Dunne
PhD Candidate,
Email a.r.dunne@shu.ac.uk

Research supervisor: Professor Steve Haake
Email S.J.Haake@shu.ac.uk
Advanced Wellbeing Research Centre,
Sheffield Hallam University, UK.

Please keep a copy of this form for your future reference.
Once again, thank you for your participation in this study.

Appendix 6.1 Ethics approval for stakeholder consultations for Study Three

Converis - Ethics Review - Amendment Outcome

converis@shu.ac.uk
To DUNNE, ALLISON
20/10/2023

Dear Allison

Title of Ethics Review: Community-based initiatives and mental wellbeing: A case study of parkrun. Phase two - qualitative study.
Ethic Review ID: ER42513594
Amendment 2 Title: Extension to project end date and increase in number of focus groups to be held.

The amendment to the Ethics Review named above has been reviewed and the outcome is:

Amendment Approved

Please log back into the P12 tab to see any feedback.

If you have a query regarding this, please contact your Faculty Ethics Administrator in the first instance.

HWB - hwbethics@shu.ac.uk
STA - STAfrec@shu.ac.uk
SBS - sbsethics@shu.ac.uk
SSH - SSH-ResearchEthics@shu.ac.uk

Kind regards,
Ethics Research Support

*** This is an automatically generated email, please do not reply ***

Appendix 6.2 Data storage consent form for stakeholder consultation meetings.

Sheffield Hallam University

Community-based initiatives and mental wellbeing:

A case study of parkrun.

Data storage consent form

This consent form was sent to participants via email or text message using Qualtrics to collect the information.

We invite you to participate in this consultation as a member of the public. A recording of the consultation meeting will be made and stored on a password protected hard drive. Personal data (your name, email address and/or telephone number) will be used only for the purposes of this consultation).

if you have any questions please do not hesitate to contact the lead researcher Allison Dunne a.r.dunne@shu.ac.uk or the PhD supervisor Professor Steve Haake s.j.haake@shu.ac.uk

Participant Consent

Please answer the following questions by ticking the response that applies

	YES	NO
1. I consent to my written data to be used for this project.	☐	☐
2. I consent to my audio data to be used for this project.	☐	☐
3. I consent to my video data to be used for this project (you can say no to this question and still participate using audio recording only).	☐	☐

Please provide your full name …….