Socio-Ecological Determinants of Young Men's Help-Seeking: Barriers and Pathways to Engagement

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2026

A thesis submitted to fulfil the requirements of the degree of Doctor of Philosophy

Statement of Originality

This is to certify that the content of this thesis is my own work. This thesis has not been submitted for any other degree or purpose.

I certify that the intellectual content of this thesis is the product of my own work, and that all assistance received in preparing this thesis and all sources have been acknowledged.

Robert Palmer

22nd February 2026

Acknowledgements

I have been fortunate to receive the support and kindness of many generous, thoughtful and knowledgeable people. While I cannot name everyone here, I am sincerely thankful to all who contributed.

First, I would like to thank my supervisors – Professor Ben Smith, Professor Philayrath Phongsavan and Dr James Kite. I feel incredibly fortunate to have had such an exceptional supervisory team. Thank you for being so generous with your time and support. Your patience, encouragement and guidance fundamentally shaped the quality of my PhD experience, making it both rich and genuinely enjoyable. I am deeply grateful.

I want to extend my gratitude to the rest of the Prevention Research Collaboration team. Thank you for fostering such a welcoming, supportive and intellectually generous environment. I especially want to acknowledge Becky, Binh, Bronwyn, Karen, Kat, Lisa, Margaret, Melodie, Nicole, Yvonne and Zoe for their encouragement and counsel at various stages of this journey.

Thank you to my fellow PhD candidates within the PRC – Daniel, Eve, Freya, Lucy, Neta, Salud and Susan. You have always been encouraging and have often offered needed reprieve in the form of The Simpsons and cricket related discussion.

Thank you to my friends in squash for the welcome distraction. A special mention goes to Coach Mike Dickens and Jamie Henderson for providing many ‘full tours of the court’, even if they were often exasperating at the time. I am grateful to Leonie Lum and Luci Monk of the Sydney Uni Sport & Fitness Athlete Program and John Cowling of the Sydney University Squash Club for their generous support which allowed me to continue participating in the sport I love throughout my PhD.

I want to thank my friends Marc, Manuel, Peter, Sam, Sinan and Laura. I am lucky to know such kind and awesome people. I also want to thank Nick Janicaud and Simon Uzcilas, who in many ways inspired this research. Thank you for taking me under your wing when I was a young man. Your friendship and example helped me navigate many of the challenging moments of early adult life. I wish that every young man could have that kind of positive influence in their life and I will try and pay it forward.

Thank you to my family: Yai Yai, thank you for the figs and humour. Granny, thank you for the jellybeans and poems. Dad, thank you for paving the way – for providing the opportunity, blueprint and inspiration that made this possible. Mum, thank you for being a pillar of love, care and support. Kathleen, thank you for the friendship and light.

Funding Partners

I would like to express my sincere gratitude to the Men of Malvern and Healthy Male for funding this research. I was fortunate to be selected as the recipient of the Healthy Male 'Men Living Well' Scholarship. It is because of this generosity that this project was possible, and I was able to pursue research in an area I am passionate about. I also want to extend a personal thank you to Doug Lording, Simon von Saldern, Tim Moss, and Bernie Marshall for their support and guidance.

During my PhD, I was also supported by an Australian Government Research Training Program (RTP) Scholarship. Additional funding was received through the Faculty of Medicine and Health Postgraduate Research Support Scheme, the Charles Perkins Centre Early Career Researcher Travel Award and the Sydney Uni Sport & Fitness Elite Athlete Program.

Participants

Finally, I would like to thank the young men who participated in the surveys and interviews that form the foundation of this thesis. Thank you for your time, openness, and trust.

Authorship Attribution Statement

Chapter 3 of this thesis is published as:

Palmer R, Smith BJ, Kite J, Phongsavan P. The socio-ecological determinants of help-seeking practices and healthcare access among young men: a systematic review. *Health Promot Int*. 2024;39(2):daae024. https://doi.org/10.1093/heapro/daae024

I led the development of the protocol and search strategy, with assistance from a University of Sydney academic liaison librarian. I conducted the screening, data extraction, quality appraisal, and led the data synthesis, analysis, and drafting of the manuscript. My co-authors contributed to the conception and design of the study, assisted with screening, quality assessment and data extraction, and provided substantial intellectual input and critical revisions of the manuscript.

Chapter 4 of this thesis is published as:

Palmer R, Kite J, Phongsavan P, Moss TJ, Marshall B, Halim N, Smith BJ. Age-related differences in men's preferences and barriers to healthcare: Insights from a national Australian survey. *PLoS One*, 2025;20(5):e0323733 https://doi.org/10.1371/journal.pone.0323733

I led the conceptualisation of the research questions, conducted the statistical analyses, interpreted the findings, and drafted the manuscript. My co-authors contributed to the study design, interpretation of results, and provided substantial intellectual input and critical revisions of the manuscript.

Chapter 5 of this thesis is in press at the time of writing:

Palmer R, Kite J, Phongsavan P, Owen KB, Moss TJ, Marshall B, Halim N, Smith BJ. (in press). Determinants of young men's help-seeking behaviour: Insights from a national Australian survey. *Am J Mens Health*. DOI: 10.1177/15579883251412964

I led the conceptualisation of the study, conducted the statistical analyses with statistical support from K.O. and B.S., interpreted the findings, and drafted the manuscript. My co-authors contributed to the study design, interpretation of findings, and provided substantial intellectual input and critical revisions of the manuscript.

In addition to the authorship attribution statements above, in cases where I am not the corresponding author of a published item, permission to include the published material has been granted by the corresponding author.

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12th February 2026

As supervisor for the candidature upon which this thesis is based, I can confirm that the authorship attribution statements above are correct.

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Signature:

12th February 2026

Use of Generative AI

The author used ChatGPT (OpenAI) for the purposes of text enhancement. The use of this generative AI tool includes spelling corrections, minor sentence restructuring, and clarity enhancement. The author confirms that where text was modified by generative AI, the content was reviewed for possible errors, inaccuracies, and bias. The author takes full responsibility for the submitted thesis, confirms the work is their own, and has used generative AI in accordance with University guidelines and policies.

Abstract

Young men face unique barriers to help-seeking that contribute to delayed healthcare engagement and poorer health outcomes across the lifespan. However, practical pathways to improve help-seeking remain underdeveloped, and quantitative, population-level research is limited, with most studies focusing on young men already engaged with healthcare or embedded within school and university settings. Guided by the socio-ecological model, this thesis addresses these gaps by examining determinants of young men's help-seeking across multiple levels of influence and identifying tangible strategies to support more effective and timely engagement with healthcare.

Using a sequential, multi-phase, mixed methods approach, four interrelated studies were conducted. These included: a systematic review synthesising the existing evidence base on young men's barriers and facilitators to help-seeking; secondary analyses of nationally representative survey data examining age differences in help-seeking barriers and the psychosocial determinants of help-seeking barriers for young men; and a qualitative study involving semi-structured interviews with a diverse sample of 29 young men. Together, these studies enabled a comprehensive examination of help-seeking determinants across individual, interpersonal, organisational, and societal domains.

The findings clarify the unique considerations young men face when seeking help and highlight several key targets for intervention. Across studies, masculine attitudes, health literacy, service accessibility, and social contexts were consistently identified as central influences on young men's readiness and ability to seek support. A cross-cutting insight was the important role of compassion, both self-directed and from others in shaping young men's engagement with healthcare and reducing perceived barriers.

Taken together, this thesis provides a multi-level understanding of what holds young men back from seeking help and what can support their timely engagement with healthcare. The findings point to clear, actionable strategies, including strengthening health literacy, addressing loneliness and social disconnection, improving service accessibility, and embedding compassion within service design and public messaging. These insights offer practical pathways for improving early engagement and strengthening health outcomes for young men across the lifespan.

Publications

Publications arising from this thesis

Palmer R, Smith BJ, Kite J, Phongsavan P. The socio-ecological determinants of help-seeking practices and healthcare access among young men: a systematic review. *Health Promot Int*. 2024;39(2):daae024. https://doi.org/10.1093/heapro/daae024

Palmer R, Kite J, Phongsavan P, Moss TJ, Marshall B, Halim N, Smith BJ. Age-related differences in men's preferences and barriers to healthcare: Insights from a national Australian survey. *PLoS One*, 2025;20(5):e0323733 https://doi.org/10.1371/journal.pone.0323733

Palmer R, Kite J, Phongsavan P, Owen KB, Moss TJ, Marshall B, Halim N, Smith BJ. (in press). Determinants of young men's help-seeking behaviour: Insights from a national Australian survey. *Am J Mens Health*. DOI: 10.1177/15579883251412964

Publications arising from this thesis (under review)

Palmer R, Phongsavan P, Smith BJ, Kite J. "Does that make me less of a man?": Qualitative insights for supporting help-seeking among young Australian men. *Health Soc Care Community*, under review

Publications from related projects arising during candidature

Lim MH, Halim N, **Palmer R**, Moss TJ, von Saldern S, Marshall B, Smith BJ. (2025). Understanding loneliness as a preventive health priority among men: findings from an Australian population survey. *Health Promot J Austr*, 2025;*36*(4), e70090.

Smith B, Moss T, Marshall B, Halim N, **Palmer R**, von Saldern S. Engaging Australian men in disease prevention–priorities and opportunities from a national survey. *Public Health Res Pract*. 2024 Jun 19;34(2):e33342310.

Presentations

The following oral presentations arose directly from research conducted as part of this thesis:

Palmer R, (2025). Oral Presentation – *Determinants of young men's help-seeking behaviour: insights from a national Australian survey*. International Congress of Behavioural Medicine – Vienna, Austria.

Palmer R, (2025). Invited Presentation – *'But I'd feel weak if I did': understanding and supporting young men's help-seeking*. Men of Malvern – Melbourne, Australia.

Palmer R, (2024). Oral Presentation – *Does age influence men's help-seeking preferences?* Australian Public Health Conference – Perth, Australia.

Palmer R, (2024). Oral Presentation – *Age-related differences in men's help-seeking.* Faculty of Medicine and Health HDR Conference, The University of Sydney – Sydney, Australia.

Abbreviations

AIC	Akaike Information Criterion
BIC	Bayesian Information Criterion
BHSS	Barriers to Help-Seeking Scale
CFI	Comparative Fit Index
CI	Confidence Interval
CMNI	Conformity to Masculine Norms Inventory
COREQ	COnsolidated criteria for REporting Qualitative research
DFRDD	Dual Frame Random Digit Dialling
GRC	Gender Role Conflict
GSE	General Self-Efficacy
GP	General Practitioner
HIV	Human Immunodeficiency Virus
HLS-EU-Q16	European Health Literacy Survey Questionnaire (16-item)
HREC	Human Research Ethics Committee
IASMHS	Inventory of Attitudes toward Seeking Mental Health Services
JBI	Joanna Briggs Institute
LiA	Life in Australia Panel
MeSH	Medical Subject Headings
NMHS	National Men's Health Strategy
OR	Odds Ratio
PRISMA	Preferred Reporting Items for Systematic reviews and Meta-Analyses
RMSEA	Root Mean Square Error of Approximation
SEIFA	Socio-Economic Indexes for Areas

SEM	Social Ecological Model (Chapters 1, 2, 3, 6 and 7)
SEM	Structural Equation Modelling (Chapter 5)
SSOSH	Self-Stigma of Seeking Help
SRMR	Standardised Root Mean Square Residual
STROBE	Strengthening the Reporting of Observational Studies in Epidemiology
TLI	Tucker-Lewis Index
UCLA-3	UCLA Loneliness Scale (3-item)
VIF	Variance Inflation Factor

Note: The abbreviation “SEM” is used in two distinct ways in this thesis. In Chapters 1, 2, 3, 6 and 7, SEM refers to the Social Ecological Model. In Chapter 5, SEM refers to Structural Equation Modelling. The meaning is defined at first use in each chapter.

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Chapter Six

Chapter One: Introduction and Research Overview

1.1 Challenges in Men's Health

Men's health represents a public health priority that warrants greater attention by government and nongovernment agencies, the corporate sector, and civil society broadly. Globally, men experience a shorter period of healthy life expectancy than women, living on average almost five fewer years in good health (1, 2). Men experience higher rates of conditions such as hypertension and diabetes, carry a greater overall burden of disease, and are more likely to die prematurely than women (3-5).

This pattern extends to the Australian context, where men account for the majority of deaths by suicide, experience higher rates of cardiovascular disease, and are approximately twice as likely as women to die from causes considered preventable before the age of 75 (6, 7). In recognition of this situation, the Australian government has established the National Men's Health Strategy (NMHS) 2020-2030 (8), which identifies the challenges in men's health and calls for targeted efforts to improve health outcomes across the lifespan. Central to this strategy is the need to better understand how men engage with health services, and how systems of care can more effectively respond to men's physical and mental health needs (8).

1.2 Patterns of Men's Engagement with Healthcare Services

A key contributor to men's poorer health outcomes is less frequent and more delayed engagement with healthcare services relative to women (9-14). Research across an international context, including studies in the United Kingdom, the United States, and nations across Europe, Asia and Africa, consistently demonstrates that men exhibit a reticence to engage in help-seeking behaviours or access health care (5, 15-20). These trends are mirrored in Australia where primary healthcare is considered a crucial entry point to the health system and an important setting for preventive care, early detection, and health maintenance (21). In

Australia, primary care is commonly accessed through general practitioners, who can provide first-contact care, ongoing management, referrals to specialist services, and access to Medicare-subsidised allied health and psychological services (21). However, even after accounting for sex-specific healthcare use, Australian men attend primary care less frequently than women of the same age, both when experiencing a health concern and for routine or preventive check-ups (11, 22-24). For example, national data shows that in 2023-2024, 80% of Australian men consulted a general practitioner (GP) compared to 88% of Australian women, with women also receiving a greater number of Medicare-subsidised GP visits (7.1 visits compared with 5.2 for men) (24).

When men do engage with healthcare services, this engagement is often precipitated by the presence of a physical symptom causing significant pain and impact on functioning and commonly follows a prolonged period of self-monitoring or delay (25-27). As a result, men are more likely to present later in the course of illness, limiting opportunities for prevention, early detection, and timely intervention (13, 14, 28, 14). These patterns of delayed and reactive healthcare use have important implications for disease progression, treatment effectiveness, and long-term health outcomes, and highlight the need to better understand the factors shaping men's engagement with healthcare (29).

1.3 The Distinct Help-seeking Profile of Young Men

Age has been identified as an important factor influencing men's help-seeking behaviours, attitudes, and patterns of healthcare engagement (11, 30). Although there is no universally accepted age range for defining "young men," definitions vary across research, policy, and service contexts according to developmental, legal, methodological, and practical considerations (29). In this thesis, the term is used broadly to refer to males in adolescence and early adulthood, with a particular focus on the period from late adolescence to

approximately 30 years of age. This focus is important because behaviours that reduce opportunities for prevention, early detection, and timely care appear to be especially pronounced among men during this life stage (28, 31-33). Although research specifically focused on young men remains limited, this evidence has positioned young men as a group of increasing concern within men's health research and policy, given the potential for early patterns of disengagement to shape health trajectories across the lifespan (34). Despite experiencing high rates of psychological distress and accounting for a disproportionate burden of suicide-related mortality, young men consistently report among the lowest rates of professional help-seeking for mental health of any demographic group (31, 32, 35-42). Population estimates indicate that in 2020-2022 only 34.2% of young Australian men aged 16-24 years who met criteria for a 12-month affective, anxiety or substance use disorders had accessed mental health services in the preceding year, compared to 55.8% of young Australian women in the same age-group (43). Furthermore, when young men do access mental health services, they are prone to prematurely disengage, limiting continuity of care and reducing the potential effectiveness of treatment (44).

Similarly, in relation to physical health, while the evidence base is again limited and is comparatively less developed than research on young men's mental health help-seeking, existing research indicates that young men are likely to adopt attitudes and behaviours that reduce opportunities for disease prevention and early detection (28, 33). Rates of routine primary care attendance among young men are consistently low, with younger men less likely than older men to engage with healthcare professionals for regular or preventive check-ups (11, 45). This is reflected in national Australian data showing that in 2021-2022, 62% of men aged 15-24 visited their GP in the preceding 12 months compared to 95% of men aged 65 and over (46) and 83% of women aged 15-24 (22).

Research provides preliminary evidence that younger Australian men may be more inclined to monitor symptoms independently, attempt self-diagnosis, and delay seeking professional care in the expectation that health concerns will resolve without intervention (28, 29). As a result, young men are more likely to postpone help-seeking until symptoms become severe or disruptive, and to rely on informal or non-professional sources of information rather than accessing healthcare services (28, 29).

Notably, evidence suggests that these patterns of disengagement often emerge during adolescence and persist into adulthood (47, 48). This is particularly concerning given the well-established role of early diagnosis and intervention in reducing morbidity and improving long-term health outcomes (38, 49, 50). Failure to engage with healthcare services during formative developmental periods may limit young men's familiarity with health systems, reduce confidence in navigating care, and establish behavioural patterns that are carried forward into later life. As such, improving young men's engagement with healthcare has implications not only for immediate wellbeing, but also for health outcomes across the life course (28, 33, 47, 48).

1.4 Determinants of Young Men's Help-Seeking: Current Evidence

Research examining young men's help-seeking has identified a range of psychological and behavioural factors associated with reduced engagement with health information and services (14, 25, 29, 51, 52). Much of this literature has focused on individual-level determinants, with particular emphasis on the role of masculine ideals in shaping help-seeking attitudes and behaviours (53-56). Traits such as strength, self-reliance, and independence have been understood to conflict with the expression of vulnerability required for seeking professional support, positioning help-seeking as incongruent with masculine attitudes (34, 57). While this body of work has been influential in highlighting the relevance of masculine attitudes for

young men's health behaviour, it has typically examined these influences in isolation and there is little consensus regarding how health systems or health promotion strategies might be adapted to better accommodate young men as they negotiate these masculine ideals in practice (58).

Beyond masculinity, existing research has identified a range of affective and knowledge-related influences on young men's help-seeking. Shame and embarrassment are commonly reported as barriers, particularly in relation to sexual and mental health concerns (59-62). Several studies have also documented lower levels of health and mental health literacy among adolescent boys compared with girls, including poorer recognition of doctors as appropriate sources of support for conditions such as depression and anxiety, alongside gaps in knowledge related to testicular cancer and general health services (61, 63-65). In addition, young men have been found to report low perceived need for healthcare, even when experiencing emerging symptoms (61) and difficulties recognising early signs of health problems, especially mental health concerns, have been shown to further delay help-seeking (62).

A smaller body of research have described system and service-level influences on young men's help-seeking. Concerns about privacy and confidentiality recur across these studies, particularly within sexual health contexts, where fears of disclosure and lack of anonymity may deter service use (66-69). For young men living with chronic health conditions, the transition from paediatric to adult healthcare services has been identified as a critical period for continuity of care, with inadequate coordination between services posing a barrier to ongoing engagement and adherence to treatment (70). Negative experiences with health professionals during adolescence and young adulthood, most commonly reported in relation to sexual health education, screening, or treatment, have also been documented and may

shape enduring attitudes toward healthcare, increasing the likelihood of disengagement in later life when disease risks escalate (61, 66, 71).

Together, this body of work provides early, albeit fragmented, evidence that young men's help-seeking is shaped by influences that extend beyond individual beliefs and emotions to include factors operating across interpersonal and organisational levels, such as social norms, relationships, and characteristics of health services. However, these determinants have typically been examined as discrete factors and there remains limited integrative work exploring how these influences collectively shape young men's decisions to seek or avoid care.

1.5 Limitations of Existing Research on Young Men's Help-Seeking

Despite growing recognition that young men display a distinct help-seeking profile, much of the broader literature on men's health has not adequately accounted for age-related differences in healthcare engagement (14, 25, 29). Many studies have examined men as a single, homogeneous group, extrapolating findings across the lifespan without sufficient consideration of the developmental, social, and contextual factors that distinguish young men from older cohorts. This presents a significant limitation, given that health status, perceived need for care, and health priorities differ markedly across the male lifespan. While young men generally experience lower rates of chronic disease, suicide and self-inflicted injury remain leading contributors to disease burden among men aged 25-44 years, alongside conditions such as back pain and alcohol use disorders (29, 72). Reproductive health and the transition to fatherhood also emerge as salient issues during early adulthood, representing periods of both vulnerability and potential motivation for health behaviour change (73). In contrast, midlife and older adulthood are characterised by increasing prevalence of chronic conditions that necessitate sustained engagement with healthcare services (29, 72). Failure to

account for these differences limits the interpretability of findings and underscores the need for age-sensitive analyses of men's help-seeking behaviour.

Where research has focused specifically on young men, it has often been limited in scope and generalisability. A substantial proportion of studies have concentrated on specific sexual or mental health contexts, relied on non-representative samples (such as university students), or employed qualitative designs that, while valuable for generating insight, constrain population-level inference (14, 25, 29). Quantitative studies examining young men's help-seeking remain comparatively scarce and frequently draw on similarly restricted populations (29). In addition, many studies have focused on school-based samples or young people already engaged with healthcare systems, potentially overlooking those most disengaged from care (14, 25, 29).

Further, intervention-oriented research has also tended to prioritise changes in individual attitudes particularly masculine attitudes, as the primary mechanism for improving help-seeking, with less attention given to the role of interpersonal relationships, service characteristics, or broader structural, environmental and cultural factors (14, 25, 29). This includes aspects of healthy and positive masculinities scholarship, which usefully seek to promote more constructive approaches to working with masculinity, but may still focus on masculine attitudes as the principal barrier to men's help-seeking (34, 74, 75). As a result, although determinants operating at different levels have been identified, they have typically been examined in isolation rather than as interacting components of a broader system, limiting understanding of how influences interact to shape help-seeking behaviour.

Another limitation of the existing literature concerns its recency. Much of the research informing current understandings of young men's help-seeking was conducted in the mid-2010s or earlier, within social and healthcare environments that differ in important ways from

those young men now inhabit (14, 25, 29). Since that time, the social and cultural contexts shaping young men's everyday lives have changed substantially, including shifts in digital communication, social media use, access to health information, and models of service delivery, alongside broader disruptions such as the COVID-19 pandemic (34, 76). These changes raise questions about the ongoing applicability of earlier findings and underscore the need for contemporary research that reflects the current experiences and realities influencing young men's help-seeking.

Overall, these limitations point to the need for a more comprehensive and integrative approach to understanding young men's help-seeking. Specifically, there is a need to examine age-related differences explicitly and to move beyond predominantly individual-level explanations toward frameworks capable of capturing how determinants operating across individual, interpersonal, service, and broader contextual levels interact to shape patterns of healthcare engagement.

1.6 The Socio-Ecological Perspective

Human behaviour is complex and shaped by multiple influences operating across the lifespan. Health and health-related behaviours are increasingly understood as the product of interactions between individual characteristics, such as psychological attributes, beliefs, income, and education, and broader social, physical, and cultural factors, including workplaces, neighbourhoods, and policy contexts (77-79). Together, these influences can enable or constrain opportunities for maintaining health and engaging with healthcare services. The social ecological model (SEM) has been widely adopted within public health as a means of operationalising this perspective and providing a structured approach to understanding complex health needs and behaviours (77-79).

Originating from the seminal work of Bronfenbrenner (80, 81), the SEM conceptualises behaviour as arising through ongoing, reciprocal interactions between individuals and their environments. Central to this approach is the recognition of individuals as active agents whose behaviours are shaped not only by personal attributes, but also by interpersonal relationships, organisational contexts, and broader societal conditions (80, 81). By extending analysis beyond individual attributes to include interpersonal, organisational, and societal influences, the SEM offers a necessary multidimensional lens for examining health behaviours that are embedded within broader systems and social conditions (79, 82). An illustrative representation of the SEM is presented in Figure 1.1.

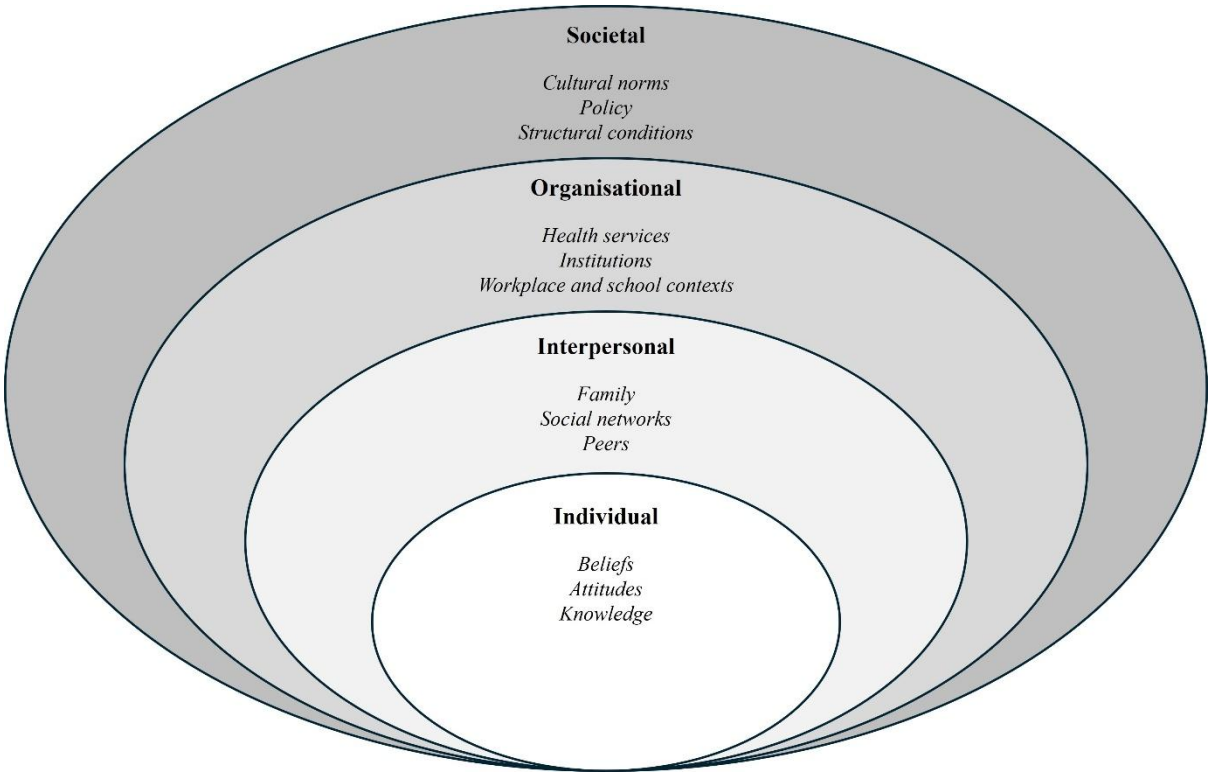

Figure 1.1. Illustration of the socio-ecological model, depicting individual, interpersonal, organisational, and societal levels of influence. Adapted from Bronfenbrenner's ecological systems theory (80, 81) and subsequent applications in public health (79).

This framework is particularly relevant to the study of young men's help-seeking. As outlined in the preceding sections, young men's engagement with healthcare cannot be understood solely as a function of personal attitudes or motivation. Rather, help-seeking behaviour reflects a composite of influences spanning individual beliefs and knowledge, social relationships and norms, characteristics of health services, and broader cultural expectations, and commercial determinants of health, including social media and other online environments (58, 83, 84). The SEM provides a coherent framework for integrating these influences and for identifying potential leverage points for intervention across multiple levels.

Consistent with this approach, the SEM has been applied across a range of public health domains, including research on health literacy, access to primary care, and engagement with preventive health services (82, 85-87). By adopting the socio-ecological model as a guiding framework, this thesis seeks to move beyond predominantly individual-level explanations of young men's help-seeking and to examine how determinants operating across multiple levels interact to shape barriers to and facilitators of healthcare engagement. This framework informed the conceptual framing, organisation of determinants, and interpretation of findings across the studies presented in this thesis.

1.7 Purpose of the Research

When considered together, the limitations of the existing literature point to the need for a more comprehensive and integrative approach to understanding young men's help-seeking. In particular, there is a need to systematically synthesise existing research, to examine age-related differences explicitly, and to move beyond predominantly individual-level explanations toward frameworks capable of capturing the interaction between individual, social, service-related, and broader contextual determinants of healthcare engagement.

The purpose of this thesis is to address these gaps by advancing a multi-level understanding of young men's help-seeking for both physical and mental health concerns. Specifically, this thesis aims to clarify the help-seeking profile of young men by identifying key determinants of healthcare engagement and examining how these determinants interact to shape perceived barriers to accessing care. In doing so, the thesis seeks to generate population-relevant evidence that can inform the development of more effective and contextually responsive strategies to support young men's engagement with appropriate health services.

To achieve this aim, the specific research objectives were to:

1. Systematically examine and synthesise the empirical literature on determinants of young men's help-seeking and health service use.
2. Examine age-related differences in help-seeking preferences and perceived barriers to healthcare use among Australian men.
3. Investigate how psychosocial and practical determinants of young men's healthcare engagement operate and shape perceived barriers to accessing care.
4. Understand young men's attitudes and experiences (facilitators and barriers) in relation to help-seeking and accessing healthcare services.

These objectives align closely with the priorities articulated in the NMHS, which calls for improved understanding of how men engage with health services and for the development of more responsive, preventive, and contextually appropriate approaches to men's physical and mental healthcare (8).

1.8 Structure of the Thesis

This thesis contains seven chapters, including three peer-reviewed papers and one paper currently under review. Together these studies present the scientific evidence for shifting the

focus of men's health from individual-level determinants to broader social, environmental and structural determinants.

Following this introductory chapter, **Chapter 2** describes the overarching methodological approach adopted across the program of research.

Chapter 3 presents a systematic review of the literature examining determinants of young men's help-seeking, synthesising and organising existing evidence using a socio-ecological framework.

Chapter 4 reports findings from a peer-reviewed study using nationally representative data to examine age-related differences in men's help-seeking preferences and practices.

Chapter 5 presents findings from a peer-reviewed population-level study examining psychosocial and practical determinants of young men's help-seeking and perceived barriers to healthcare engagement.

Chapter 6 presents findings from a qualitative study (currently under review) exploring factors influencing help-seeking among a diverse sample of young men, including those not currently engaged with healthcare or educational systems.

Chapter 7 synthesises the findings across all studies, discussing their implications for understanding young men's help-seeking. This chapter also considers implications for health promotion and service design, and outlines directions for future research.

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Chapter Two: Methodological Approach

This chapter outlines the methodological approach adopted in this thesis and provides the rationale for the selection, sequencing, and integration of this approach across the research program. The overarching aim of this thesis was to examine the determinants of young men's help-seeking in order to generate knowledge capable of informing intervention, service design, and policy responses, in line with the goals of the National Men's Health Strategy 2020-2030 (1). As discussed in Chapter 1, help-seeking is a complex, multi-level behaviour shaped by psychological, relational, cultural, and structural influences (2). Addressing such complexity required a design capable of examining both population-level patterns and personal experience (3). Accordingly, this thesis adopted a pragmatic, multi-phase mixed methods approach underpinned by a public health lens. A public health orientation seeks to address health issues at the population level, taking into consideration the role of social, environmental, and structural factors in shaping health behaviours and outcomes, and prioritising early intervention and health promotion through coordinated societal action (4-6).

The chapter first outlines the methodological orientation of the research, including the rationale for adopting a mixed-methods design grounded in pragmatism. It then describes the sequential structure of the research program and the logic underpinning the ordering of phases. The chapter concludes by outlining the strategy used to integrate findings across studies and reflecting on issues of positionality and reflexivity. Ethical approval for all studies included in the thesis was acquired from the relevant Human Research Ethics Committees (HREC). Additional study-specific methodological detail, including relevant information related to participant consent and HREC approval is provided in the individual chapters, Chapters 3-6.

2.1 Rationale for a Mixed Methods Approach

The research program was guided by a pragmatic paradigm (7-9). Through its prioritisation of practical utility, pragmatism enables methodological pluralism in the service of advancing understanding and informing action (7-9). Further, in applied health research, pragmatism is particularly appropriate where the objective extends beyond explanation to include intervention relevance (7-11). This orientation was well aligned with the aims of the thesis, which sought to clarify intervention pathways through enhanced understanding of young men's help-seeking, a complex and multi-level phenomenon unlikely to be adequately captured through the use of a single methodological approach. Accordingly, the selection of methodologies adopted in this thesis was informed by their capacity to clarify determinants, identify leverage points for intervention, and guide strategies to improve engagement with care among young men.

Mixed methods research involves the intentional integration of quantitative and qualitative approaches to provide a comprehensive understanding of the research topic (8, 12). Such designs are particularly suited to health research, where behavioural outcomes are shaped by interacting determinants across individual, social, and structural levels, and where both scalable, generalisable evidence and insight into personal and contextual experience are necessary (3, 11). In the context of understanding young men's help-seeking, reliance on a single methodological tradition would have been limiting. Quantitative methods allow for the examination of prevalence, patterns, and associations between determinants (13). However, they are limited in their capacity to shed light on how these determinants are experienced, interpreted, and navigated within specific social and cultural contexts (13). Conversely, qualitative approaches offer depth and interpretive richness but do not establish the relative salience or distribution of determinants at a population level (13). As such, the integration of

both approaches provided a more complete, nuanced, and intervention-relevant understanding than either method alone could provide (11, 13).

A public health orientation further shaped the research program and was operationalised through the conceptualisation of young men's help-seeking within a socio-ecological framework (SEM), recognising that determinants operate across individual, interpersonal, organisational, and societal levels (14-16). This framing moved the focus beyond solely individual-level explanations and positioned help-seeking as a behaviour embedded within broader relational and structural contexts. The socio-ecological model therefore provided a coherent structure for organising determinants identified in the systematic review, modelling relationships in quantitative analyses, and interpreting qualitative findings. Importantly, it also informed the integration of results across studies, guiding the synthesis and discussion of findings at the thesis level. In this way, the framework was congruent with the pragmatic orientation of the thesis, supporting the identification of leverage points across levels that may inform multi-level intervention strategies.

2.2 Research Design: A Multi-Phase Sequential Mixed Methods Approach

This thesis employed a multi-phase sequential mixed methods design, with explanatory logic guiding the latter stages of the research program (12). The research program progressed from synthesis of existing evidence (Chapter 3) to population-level quantitative analyses examining age-related differences and determinants of help-seeking (Chapter 4 and Chapter 5), and subsequently to qualitative exploration of young men's experience (Chapter 6). Each phase built upon the previous phase, with later studies informed by the findings and gaps identified earlier in the program.

While the systematic review and initial quantitative analyses served a developmental and descriptive function in scoping the profile of young men's help-seeking, the subsequent

modelling and qualitative phases were designed to clarify, contextualise and extend on the relationships identified. As such, the research process involved iterative refinement, with findings from each phase informing the focus, interpretation, and integration of subsequent work (12).

2.3 Phase One: Systematic Review and Narrative Synthesis

The first phase involved a systematic review of the literature examining determinants of young men's help-seeking (Chapter 3). Given the heterogeneity of methodologies among included studies, a narrative synthesis approach was adopted (17). Quantitative findings were transformed into textual descriptions to enable integration with qualitative data (12). These were then organised into themes representing reported barriers and facilitators and mapped onto domains of the SEM.

This phase served a developmental function within the overall research program. It identified key determinants described in existing research, clarified conceptual gaps, and highlighted the limited availability of generalisable analyses examining young men's help-seeking. The review therefore provided both a conceptual foundation and justification for subsequent empirical analyses.

2.4 Phase Two: Population-Level Quantitative Analyses

The second phase involved secondary analysis of nationally representative survey data to examine age-related differences in help-seeking preferences and barriers among men (Chapter 4). Multivariable logistic and linear regression modelling were used to identify help-seeking preferences and perceived barriers across the life-course (18, 19).

Building on these analyses, the third study (Chapter 5) used structural equation modelling to examine relationships between key psychosocial determinants identified as salient in the systematic review and age-related differences analysis and perceived help-seeking barriers

among young men. Structural equation modelling was selected to model theoretically informed relationships among variables simultaneously and to identify potential pathways of influence (20).

These quantitative phases fulfilled two key functions: they established the relative salience of determinants at a population level among young men and provided empirical evidence regarding how psychosocial determinants interrelate and contribute to perceived help-seeking barriers. However, while these analyses identified statistically significant associations, they could not fully explain how young men understood or navigated these determinants in practice.

2.5 Phase Three: Qualitative Thematic Analysis

The final empirical phase involved qualitative interviews with young men to explore in greater depth the determinants identified in earlier studies (Chapter 6). Reflexive thematic analysis was used to generate both semantic and latent themes within participants accounts (21). Reflexive thematic analysis is an interpretive and flexible approach to qualitative analysis that emphasises the active role of the researcher in creating themes through sustained immersion in and engagement with the data (21, 22). In this way reflexive thematic analysis acknowledges themes as constructed through iterative coding, interpretation, reflexive engagement, and attention to patterns of meaning across the dataset (21, 22). This approach was fit for the purposes present study because it enabled analysis to move beyond descriptive accounts of barriers and facilitators, and to account for and examine underlying meanings, assumptions, experiences and contexts shaping young men's help-seeking (23). This phase sought to contextualise and extend on quantitative findings, exploring the contextual factors and mechanisms underlying statistical associations and thereby, as described by Bryman (24), putting "meat on the bones" of earlier quantitative insights.

2.6 Triangulation and Integration

This research program used methodological and data triangulation within a mixed methods framework to enhance the comprehensiveness and robustness of findings (25, 26). Triangulation refers to the deliberate use of multiple methods, data sources, or perspectives to examine a phenomenon in order to enhance the depth and robustness of findings (25, 26). In this thesis, methodological triangulation was achieved through the integration of quantitative and qualitative approaches, while data triangulation occurred through the examination of multiple data sources, including of both population-level survey data and individual-level interview data. By analysing statistical patterns and associations at the population-level alongside personal accounts of help-seeking, the research sought to generate a more comprehensive and contextually grounded understanding than could be achieved through a single methodological lens. Such triangulation enables areas of convergence, and divergence to be identified and critically examined, strengthening the credibility and transferability of findings (25, 26).

While triangulation provides the overarching design logic, integration refers to the process through which data are connected to generate coherent inferences (13, 27). In this thesis, integration occurred sequentially at the design, methods, and interpretation levels. At the design level, findings from earlier phases informed the focus and refinement of subsequent phases. The systematic review informed the selection of psychosocial variables examined in quantitative analyses. In turn, both the review findings and quantitative results shaped the development of the qualitative interview guide and purposive sampling strategy.

At the interpretation level, integration occurred through the development of meta-inferences (12). Quantitative and qualitative findings were brought into dialogue in Chapter 7 to assess convergence, divergence and expansion (11). Convergent findings strengthened confidence in

identified determinants, while divergence prompted deeper reflection on measurement limitations and contextual influences (13). The integration of findings generated insights that extended beyond what either methodology could have produced independently, enhancing the ecological validity and translational relevance of this program of research.

2.7 Positionality and Reflexivity

As a male registered psychologist working clinically with young men, I approached this research with prior experience and assumptions. This proximity to the issue provided me with a sensitivity to the challenges young men face in engaging with care, especially for mental health and an appreciation for the importance of research that can translate into meaningful practice and policy implications.

At the same time, this positioning carried the potential to privilege particular interpretations or intervention framings. For example, my clinical background may have oriented me to favour psychological, relational and intervention-relevant explanations and my personal and professional interest in men's health may have primed me to be more sensitive to narratives concerning stigma, vulnerability, self-reliance, and service disengagement. Consistent with reflexive approaches to qualitative research, I recognised that researcher subjectivity is not something to be eliminated but should be critically examined and made transparent (28). Reflexive practices were therefore embedded throughout the research process, particularly during qualitative analysis and integrative interpretation. These practices included maintaining analytic memos and reflective diaries, engaging in regular supervision and peer discussion, and deliberately, engaging with diverse perspectives and bodies of literature related to this research subject, especially those that challenged my assumptions. Through this process, reflexivity functioned not merely as a procedural safeguard but as an analytic

resource, strengthening interpretive rigour and enhancing the credibility of the ideas presented in this thesis.

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Chapter Three: The Socio-Ecological Determinants of Help-Seeking Practices and Healthcare Access Among Young Men: A Systematic Review

3.1 Preface

This chapter addresses Thesis Objective 1: to systematically examine and synthesise the empirical literature on determinants of young men's help-seeking and health service use. By situating determinants within a socio-ecological framework, the review establishes the theoretical and empirical basis for the multi-phase sequential design that follows.

Chapter 1 established the importance of focusing specifically on young men's help-seeking behaviours, highlighting the fragmented nature of the existing literature. While the broader body of men's health research has gone some way to identifying a range of potential barriers and facilitators to help-seeking, the field remains conceptually dispersed, frequently limited to individual-level explanations, and rarely organised within an integrative framework. Further, where reviews of men's help-seeking exist, these have typically examined men across the lifespan, with limited synthesis explicitly focused on young men as a distinct developmental group.

In response to these gaps, this chapter presents a systematic review that synthesises the existing international literature examining determinants of help-seeking practices and healthcare access among young men. Guided by a socio-ecological framework, the review organises identified determinants across individual, interpersonal, organisational, and societal domains. In doing so, it seeks to organise the existing knowledge about young men's help-seeking into a coherent framework, thus clarifying patterns within the literature and highlighting gaps requiring further empirical investigation.

Within the broader research program, this phase served a developmental and foundational function, as outlined in Chapter 2. The review mapped the determinants most frequently

described in qualitative and quantitative research and underscored the limited availability of generalisable and population-level analyses. These findings provided both the conceptual scaffolding and empirical justification for the subsequent quantitative analyses (Chapters 4 and 5) and qualitative exploration (Chapter 6).

This systematic review has been published in *Health Promotion International*

Citation

Palmer R, Smith BJ, Kite J, Phongsavan P. The socio-ecological determinants of help-seeking practices and healthcare access among young men: a systematic review. *Health Promot Int.* 2024;39(2):daae024. doi:https://doi.org/10.1093/heapro/daae024.

Additional materials relevant to this chapter are provided in Appendix A. Characteristics of included qualitative studies are summarised in Appendix A.1 (Table A.1).

3.2 Published Manuscript

Health Promotion International, 2024, **39**, daae024
https://doi.org/10.1093/heapro/daae024
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The socio-ecological determinants of help-seeking practices and healthcare access among young men: a systematic review

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Abstract

Delayed engagement with health services is a key contributor to poorer health outcomes experienced by men. Patterns of health service usage which reduce the opportunity for disease prevention and health promotion appear to be especially prominent amongst young men. To identify the multiple and intersecting determinants of young men's help-seeking practices and health services usage, this review uses the social ecological model (SEM) to guide a critical synthesis of the literature on barriers and facilitators experienced by young men in accessing health services. A systematic review was conducted across five databases (MEDLINE, Embase, PsychINFO, CINAHL and Scopus). Included studies presented primary data regarding young men's (12–24 years) barriers and/or facilitators to seeking and accessing health care. Thirty-one studies (24 qualitative and 7 quantitative) underwent data extraction, quality appraisal and thematic analysis under the guiding framework of the SEM. Seven key themes were constructed, encapsulating the perceived barriers and facilitators to help-seeking and accessing health care experienced by young men, including masculine attitudes, health literacy, social pressure, service accessibility, economic factors, service characteristics and cultural attitudes. These findings highlight the complex interplay between the individual, interpersonal, organizational and societal factors impacting young men's healthcare engagement. They also illuminate avenues for multifaceted, context-specific interventions to enhance healthcare accessibility for this group, including addressing health literacy gaps, providing culturally sensitive care and reducing cost barriers.

Keywords: young men, healthcare access, help-seeking behaviour, social ecological model, barriers and facilitators

BACKGROUND

Men's health is a significant issue that warrants urgent attention. Globally, undetected or ineffectively managed disease results in men living, on average, nearly 5 years less of 'healthy life' than women (WHO, 2021). Men also constitute the majority of deaths from suicide, are more likely to experience cardiovascular disease and are at higher risk for premature mortality (Pirkis *et al.*, 2016; WHO, 2018; AIHW, 2020, 2022).

A key contributor to the poorer health outcomes experienced by men is insufficient and untimely engagement with health services (Baker, 2016). The decision for men to formally seek health information or services is often delayed by a period of self-monitoring and is dependent on the perceived seriousness of the symptoms experienced (Smith *et al.*, 2008a; Yousaf *et al.*, 2015; Adam *et al.*, 2019). When men do attend health services, they seek support later in their illness, leave significant health issues unattended and are more likely to somatize psychological concerns (Vincent *et al.*, 2018). These patterns of engagement with health services appear to be especially prominent amongst young men (Rickwood *et al.*, 2005; Rice and Baker, 2017; Vincent *et al.*, 2018).

Despite experiencing high rates of psychological distress and suicide, young men are less likely than older men to value preventative mental healthcare practices and have

Contribution to Health Promotion

- This review pinpoints key barriers and facilitators to help-seeking and accessing health care experienced by young men.
- Through employing the SEM, the review offers a comprehensive lens to understand multi-level factors impacting healthcare engagement.
- Insights from this review can guide the development of strategies tailored to young men, aiming to enhance their healthcare access and ultimately improve their health outcomes.

among the lowest rates of professional help-seeking for mental health of any group across the lifespan (Rickwood *et al*., 2005; Burke and McKeon, 2007; Judd *et al*., 2012; Rasmussen *et al*., 2018; Rice *et al*., 2018a; Rice *et al*., 2018b; Smith *et al*., 2023). Similarly, research considering the distinct attitudes and behaviours of young men in relation to managing their physical health suggests that young men often adopt norms and practices that hinder disease prevention and early detection (Vincent *et al*., 2018; Smith *et al*., 2023). Notably, a trend of disengagement from health services for men often begins during adolescence and persists through adulthood (Smith *et al*., 2006; Marcell *et al*., 2007). This is particularly concerning given the critical role that early diagnosis and intervention play in reducing morbidity (White *et al*., 2011; Yousaf *et al*., 2015; Rice *et al*., 2018b). Therefore, it is crucial to understand and address the factors affecting young men's health service engagement to improve both immediate and long-term health outcomes.

Research has identified psychological and behavioural factors that reduce men's engagement with health services (Galdas *et al*., 2005; Yousaf *et al*., 2015; Mursa *et al*., 2022). There has been recognition that lower engagement with health information and services by men may be related to adherence to traditional masculine ideals (O'Brien *et al*., 2005; Smith *et al*., 2008a). Specifically, it is posited that masculine traits of strength, self-reliance and independence are inconsistent with the expression of vulnerability required to seek help from a health professional (Courtenay, 2000). However, there is little consensus regarding how existing health systems and health promotion efforts may be adapted to better accommodate young men as they navigate these masculine ideals (Baker, 2019). Moreover, while there has been a focus on individual-level factors that impede men's healthcare engagement, the broader social, cultural and environmental determinants remain less well-defined (MacDonald, 2016).

The social ecological model (SEM) has been widely adopted in public health and provides a means of understanding the complex and contextual factors that influence young men's help-seeking behaviours (McLeroy *et al*., 1988; Lounsbury and Mitchell, 2009). Originating from the seminal work of Bronfenbrenner (1979), SEM has evolved to provide a nuanced lens for understanding how various levels of an individual's environment—ranging from personal to societal—interact and influence behaviour. In this context, the SEM is a theoretical approach that recognizes the dynamic interplay between individuals and their environment and acknowledges individuals as active agents engaged in a continuous reciprocal exchange with their surroundings (Bronfenbrenner, 1979, 1989). Approaches that focus solely on individual-level factors can be limiting; they may fail to account for the systemic influences that shape young men's attitudes and behaviours. In contrast, SEM allows for a multidimensional understanding, expanding the scope from individual choices to interpersonal relationships, community norms, organizational factors and larger societal dynamics (McLeroy *et al*., 1988; Lounsbury and Mitchell, 2009).

This approach is particularly relevant to our study as young men's help-seeking behaviours are not solely a product of individual decision-making but a composite of influences ranging from personal beliefs to cultural norms and systemic constraints (Baker, 2019). The SEM helps in identifying leverage points across these multiple layers, which is vital for crafting more targeted and effective interventions. Consequently, the SEM has found widespread application in addressing various health determinants, including health literacy and engagement with primary health care (Lounsbury and Mitchell, 2009; Wharf Higgins *et al*., 2009; McCormack *et al*., 2017; Mengesha *et al*., 2017).

By adopting the SEM as a guiding framework, this review aims to synthesize evidence concerning the influences upon help-seeking and health service usage by young men, thereby contributing to an understanding of the factors that need to be addressed to promote timely service engagement, prevention and early detection in this population group.

METHODS

A systematic review was conducted in accordance with PRISMA guidelines (Page *et al*., 2021). The review was registered with PROSPERO (No. CRD42022371740). A PRISMA checklist is presented in Appendix 1. This review integrated both quantitative and qualitative findings to enable a thorough examination of multi-level barriers and facilitators to young men's help-seeking behaviours.

Literature search

A search strategy was developed in collaboration with an experienced academic liaison librarian and keywords and MeSH terms were adapted for suitability to each database. Search terms captured four key concepts: (i) barriers/facilitators, (ii) help-seeking behaviour, (iii) healthcare access and (iv) men (see Appendix 2), and were used in the systematic searches of selected databases, namely, MEDLINE, Embase, PsychINFO, CINAHL and Scopus. The search was launched in November 2022. Additionally, backward and forward reference searching of retrieved papers was used to identify further studies of interest.

Eligibility criteria

A study was included in the review if it presented primary findings regarding young men's (12–24 years) barriers and/or facilitators to seeking and accessing health care. Only studies published in peer-reviewed journals in the English language between 2002 and 2022 were considered for inclusion. This period was chosen to capture contemporary issues, including the impact of internet and social media use on help-seeking and health service engagement (Ybarra and Suman, 2006; Best *et al.*, 2016). Studies that did not analyse data from young men separately were excluded. The full list of inclusion and exclusion criteria is available in Appendix 3.

Study selection

In total, 13,175 studies were identified from database searches and hand searching. After duplicates were removed, two independent reviewers (R.P. and J.K.) screened 6544 abstracts and 204 full text articles. A third reviewer was consulted (B.S.) to resolve any disagreement and reach a final decision. The study selection process is summarized in Figure 1.

Data extraction and quality assessment

A standardized form was piloted and used to extract data from included studies for the appraisal of study quality and evidence synthesis. Information extracted included: (i) author and publication; (ii) country of study; (iii) study aims; (iv) sample size and participant characteristics; (v) health service setting; (vi) data collection methods; (vii) data analysis; (viii) findings related to influences upon help-seeking and health service usage. For quantitative studies, details of statistical analyses were recorded. For qualitative studies, discussion topics and major questions explored were recorded. Two review authors (R.P. and J.K., R.P. and B.S. or R.P. and P.P.) extracted data independently for each paper. Discrepancies were resolved through discussion between the two reviewers, with a third reviewer being consulted where necessary.

The quality of all included studies was assessed using the Joanna Briggs Institute (JBI) critical appraisal checklists for qualitative research and cross-sectional studies, respectively (JBI, 2020). Quality assessment was conducted independently by two reviewers (R.P. and J.K., R.P. and B.S. or R.P. and P.P.) for each paper. Discrepancies were resolved through discussion between the two reviewers before a final quality rating was decided upon. Each study was given a quality rating based on total score of low (0–3 for qualitative and 0–2 for quantitative studies), moderate (4–6 for qualitative and 3–5 for quantitative studies) or high (7–10 for qualitative and 6–8 for quantitative studies). No studies were excluded from the review because of quality.

Data synthesis

A narrative synthesis was conducted, drawing on the framework and techniques described by Popay *et al.* (2005) and Thomas and Harden (2008). This approach was chosen because of the descriptive nature of results and the heterogeneity of methodologies among included studies. Quantitative data were transformed into 'qualitized data' to enable the integration of evidence from quantitative and qualitative studies (Lizarondo *et al.*, 2020). This involved the conversion of the quantitative results into textual descriptions of reported barriers and facilitators. Qualitative and 'qualitized' data were then reorganized to group findings according to reported barriers and facilitators. An iterative process was used to refine these initial codes into the overarching barrier and facilitator themes and organize them into the appropriate domains of the SEM (individual, interpersonal, organizational and societal).

Analyses were led by the primary author (R.P.) and informed by regular discussions with other reviewers (J.K./B.S./P.P.) regarding the interpretation of codes and themes. This was an iterative process involving subsequent discussions to facilitate the refinement of the themes identified.

RESULTS

In total, 31 studies were included for synthesis: 24 studies provided qualitative data and 7 provided quantitative data (Supplementary Table S1 and Table 1). A total of 14 studies were conducted in the United States, 6 in Australia, 5 in the United Kingdom, 3 in Canada and 1 each in New Zealand, the Republic of Ireland and Norway. In terms of health service context, most studies focused on mental health ($n = 17$), while 10 focused on sexual health, 3 on physical health and 1 on general primary health care. Most studies ($n = 23$) only sourced data directly from young men. However, eight studies included perspectives from individuals closely associated with young men, such as parents, peers and healthcare professionals. Notably, findings were similar for both groups of participants.

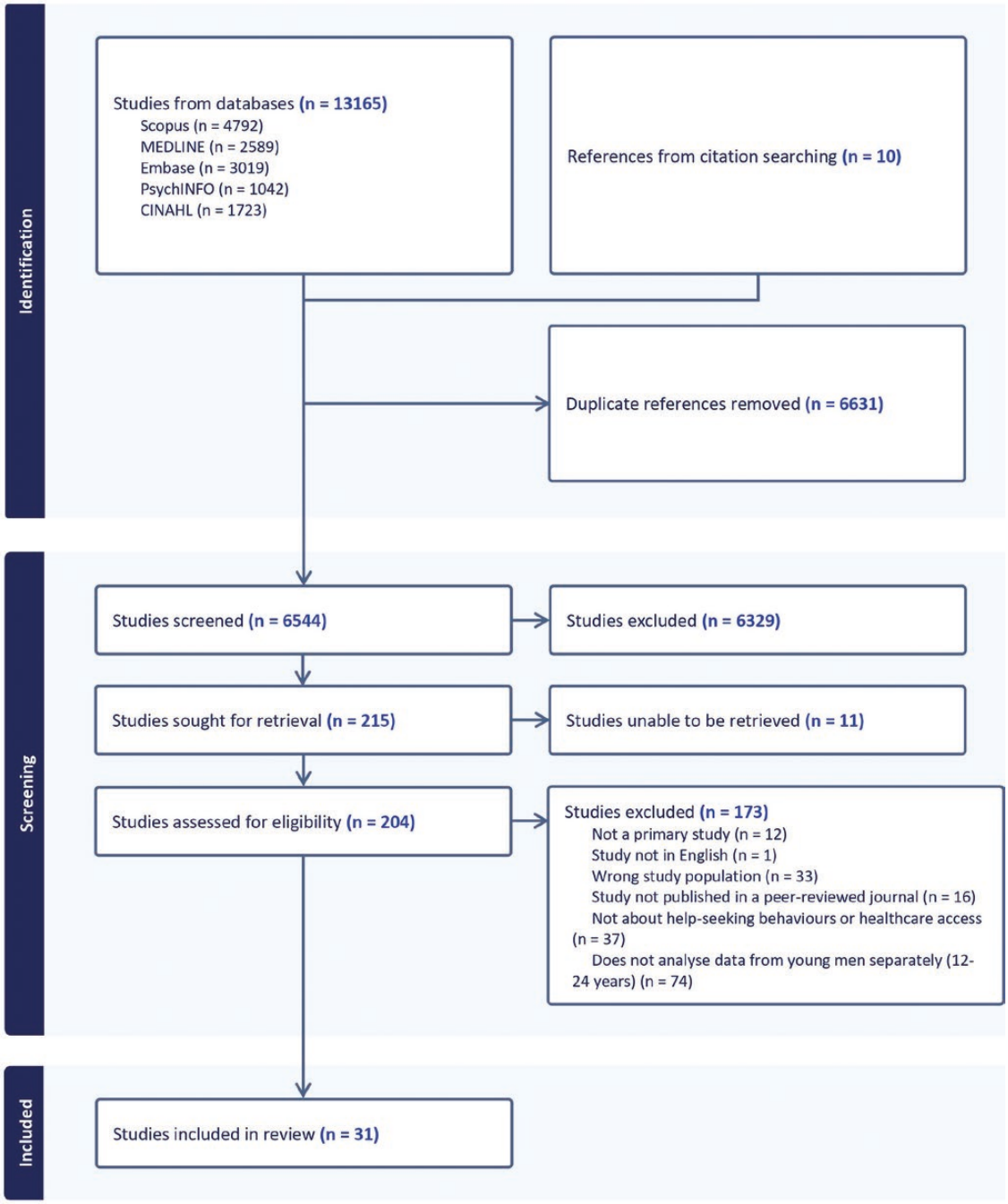

Fig. 1: PRISMA flowchart of study selection process.

Quality ratings

Among the quantitative studies, 4 received a 'high'-quality rating, while the remaining 3 were rated as 'moderate' quality. For qualitative studies, 16 were considered 'high' quality, 6 were classified as 'moderate' quality and 2 were 'low' quality.

Within qualitative papers of 'low' and 'moderate' quality, there was often ambiguity regarding the appropriateness of the chosen methodological paradigm. Furthermore, there was commonly a lack of clarity regarding participant representation and whether participant responses and viewpoints had been adequately and equitably presented within the

Table 1: Quantitative study characteristics

Author/ country	Aim(s)	Participants	Health service setting	Data collection	Data analysis	Quality rating	Summary of findings
Biddle *et al.* (2004) United Kingdom	Investigate and compare the help-seeking behaviour of mentally distressed young men and women.	560 young men (16–24 years)	Mental health services	Self-completed questionnaire	Multivariate logistic regression examining whether exposure variables are more prevalent among help-seekers	5 moderate	The strongest predictors of help-seeking by men were higher severity of mental disorder, previous help-seeking for psychological or emotional problems, and awareness of own problems.
Cole and Ingram (2020) United States	Examine how self-stigma and gender role conflict in men impact the utilization of different types of help-seeking behaviours for depression	313 men (18–22 + years) attending a large Midwestern university	Mental health services for depression	Self-report measures	Structural equation models looking at relationships between gender role conflict (GRC) and self-stigma of seeking help (SSOSH) and help-seeking for depression	6 high	Both SSOSH and GRC were associated with a lower likelihood of using informal supports and a higher likelihood of avoidance, while SSOSH was also associated with a lower likelihood of seeking professional help for depression.
DeBate *et al.* (2018) United States	Examine the relationships between mental health literacy, mental health attitudes, subjective norms about mental health treatment and stigma in relation to intention to seek support from mental health services.	1242 men (mean age of 25 years) who are students attending a large research university in the southern United States	Mental health services	Self-completed online survey	Mediation models looking at the influence of stigma on the relationships between health literacy and attitudes towards seeking help with intention to seek professional mental health services.	6 high	There were weak positive relationships between information, motivation and behavioural skills (intention to seek professional mental health services); and stigma was found to mediate these relationships.
Hussen *et al.* (2015) United States	To examine psychosocial correlates of engagement in HIV care at different stages along the continuum for young gay/bisexual men and other men who have sex with men.	132 young black gay/bisexual and other men who have sex with men (16–24 years)	Health care for HIV	Self-report measures	Logistic regression . Exposure variables: negative self-image component of HIV stigma, ethnic identity affirmation and employment status . Outcome variables: missed health care for HIV appointments in the last 3 months, seeking health care on the day of HIV diagnosis	7 high	Poor self-image was negatively associated with early care-seeking on the day of diagnosis. Being employed and higher ethnic identity affirmation were positively associated with appointment adherence. Poor self-image was a significant predictor of having more missed appointments.

Table 1. Continued

Author/ country	Aim(s)	Participants	Health service setting	Data collection	Data analysis	Quality rating	Summary of findings
Marcell *et al.* (2007) United States	Test the ability of modifiable and nonmodifiable factors to predict health care use by adolescent men. Specifically focused on the relationship among beliefs about masculinity, parental communication and health-care use.	A racially and ethnically representative household sample of 1677 men (15–19 years)	Physical examination by regular care provider	In-person interview and self-completed questionnaire	Logistic regression. Exposure variables: beliefs about masculinity, serious illness or injury, age, health insurance and parental communication about reproductive health. Outcome variable: physical examination by doctor in past 12 months	4 moderate	Adolescents were more likely to have engaged in health care use in the past year if they had a serious illness, communication about reproductive health with both parents and health insurance. They were less likely if they had more traditional beliefs about masculinity and were 19 years old as opposed to 15 years old.
Pederson and Vogel (2007) United States	Examine the mediating roles of self-stigma and distress disclosure on the relationship between gender role conflict and willingness to seek counselling for psychological and interpersonal concerns.	575 men who are students attending a large midwestern university (18–40 years)	Mental health services	Self-report measures	Structural equation model. Exposure variables: gender role conflict (GRC), self-stigma regarding counselling, comfort with distress disclosure, attitudes towards seeking counselling. Outcome variable: willingness to seek counselling (WSC).	4 moderate	GRC and attitudes to counselling have a direct path of association with WSC. GRC also has indirect pathways of association to WSC via self-stigma and attitudes, as well as comfort with disclosure and attitudes.
Wasylkiw and Clairo (2018) Canada	Explore the role of masculine norms and self-compassion in men's help-seeking for mental health	166 men who are students attending a small Atlantic Canadian university. (mean age of 19.46 years)	Mental health services	Survey	Structural equation models looking at relationships between masculinity and propensity to seek professional mental health services.	6 high	Men who were more likely to adopt traditional masculine norms had less favourable attitudes to help-seeking, but athletes (and not non-athletes) with higher self-compassion had more positive attitudes towards help-seeking.

results. Additionally, the consideration of how the researcher's cultural and theoretical background could potentially impact data collection and interpretation was often absent. Among quantitative studies, a common limitation was a lack of identification and management of potential confounding factors within the analysis.

Thematic analysis

The thematic analysis identified seven overarching barrier and facilitator themes across the SEM categories of 'individual', 'interpersonal', 'organizational' and 'societal' domains (Table 2).

Individual domain

Determinants of help-seeking behaviour and health service usage at the individual level were commonly reported across studies. These were synthesized into two primary themes: masculine attitudes and health literacy. Among these studies, six used quantitative methodologies and 24 used qualitative. All studies reporting individual-level determinants demonstrated ratings of 'moderate' to 'high' quality, except for Ferrari *et al.* (2018) and Omura *et al.* (2006) which both received a 'low'-quality rating. However, each of these studies identified barriers to help-seeking (i.e. fear of appearing weak or vulnerable, inadequate health literacy) that were observed in several studies rated as 'high' quality (Timlin-Scalera *et al.*, 2003; Lindberg *et al.*, 2006; Garcia *et al.*, 2014; Tang *et al.*, 2014; Su *et al.*, 2016; Clark *et al.*, 2018; Lynch *et al.*, 2018; Sagar-Ouriaghli *et al.*, 2020; MacDonald *et al.*, 2021).

Table 2: Summary of themes according to SEM domains

Socio-ecological domain	Theme	Number of studies reporting theme[a]	
		Barrier	Facilitator
Individual	Masculine attitudes	27	5
	Health literacy	18	6
Interpersonal	Social pressure	13	12
Organizational	Service accessibility	6	5
	Service characteristics	12	16
Societal	Economic factors	5	2
	Cultural attitudes	25	1

[a]Not mutually exclusive counts as studies could report on both barriers and facilitators.

Masculine attitudes

Subscribing to masculine values and attitudes was reported as a barrier to help-seeking in 22 qualitative studies. In these studies, young men often associated help-seeking with a compromised sense of masculinity (Kalmuss and Austrian, 2010; Buzi and Smith, 2014; Tang *et al.*, 2014; Ewert *et al.*, 2016; Clark *et al.*, 2018; Lynch *et al.*, 2018). They reported feeling pressure to be 'strong' (Timlin-Scalera *et al.*, 2003; Kalmuss and Austrian, 2010; Buzi and Smith, 2014; Tang *et al.*, 2014; Ewert *et al.*, 2016; Ferrari *et al.*, 2018; Rasmussen *et al.*, 2018; Sagar-Ouriaghli *et al.*, 2020) and consistently expressed a belief that engaging in help-seeking is a sign of weakness (Pearson, 2003; Timlin-Scalera *et al.*, 2003; Lindsey *et al.*, 2006; Hutchinson and Winsome, 2012; Buzi and Smith, 2014; Tang *et al.*, 2014; Ewert *et al.*, 2016; Su *et al.*, 2016; Clark *et al.*, 2018; Ferrari *et al.*, 2018; Rasmussen *et al.*, 2018; Rice *et al.*, 2018a; Sagar-Ouriaghli *et al.*, 2020; Meechan *et al.*, 2021). A respondent from one study highlighted this belief, stating, 'Because they have to keep their name "man." They've got to be strong' (Buzi and Smith, 2014). In some instances, young men reported avoiding help-seeking out of fear of receiving a formal diagnosis (Kalmuss and Austrian, 2010; Wilson *et al.*, 2012; Marcell *et al.*, 2017; Lynch *et al.*, 2018; Rasmussen *et al.*, 2018; Meechan *et al.*, 2021). Instead of seeking help, young men endorsed a preference for self-managing symptoms (Timlin-Scalera *et al.*, 2003; Lindberg *et al.*, 2006; Lindsey *et al.*, 2006; Kalmuss and Austrian, 2010; Buzi and Smith, 2014; Garcia *et al.*, 2014; Tang *et al.*, 2014; Samuel, 2015; Clark *et al.*, 2018; Lynch *et al.*, 2018; Meechan *et al.*, 2021) to avoid 'burdening' others (Timlin-Scalera *et al.*, 2003). Reframing the discourse and terminology around help-seeking and accessing health services to be congruent with masculine values was identified as a potential facilitator (Lynch *et al.*, 2018; Sagar-Ouriaghli *et al.*, 2020).

The quantitative studies describing masculine attitudes as a determinant to help-seeking highlighted the influence of gender role conflict (GRC), self-stigma and conformity to masculine norms. Hussen *et al.* (2015) found that negative self-image was a significant predictor of an increased rate of missed appointments among young black men who have sex with men living with HIV. Pederson and Vogel (2007) identified that experiencing GRC is associated with reduced willingness to seek counselling, with GRC's impact mediated through self-stigma. These findings aligned with those of Cole and Ingram (2020), who observed that self-stigma predicted increased avoidant behaviours and reduced willingness to engage in help-seeking. Additionally, experiencing GRC was associated with diminished willingness to engage in informal help-seeking behaviours

and an increase in avoidant behaviours (Cole and Ingram, 2020). Marcell *et al.* (2007) found that those holding more traditional beliefs about masculinity were less inclined to use health services (Marcell *et al.*, 2007). Similarly, Wasylkiw and Clairo (2018) observed that adherence to traditional masculine norms predicted less favourable attitudes towards help-seeking due to self-stigma. Wasylkiw and Clairo (2018) also identified that self-compassion could act as a facilitator for help-seeking, independent of masculinity.

Health literacy

Inadequate health literacy was identified as a barrier to help-seeking across 17 qualitative studies. In these studies, young men described having difficulty identifying symptoms and lacked awareness of the need for treatment (Timlin-Scalera *et al.*, 2003; Lindberg *et al.*, 2006; Omura *et al.*, 2006; Kalmuss and Austrian, 2010; Wilson *et al.*, 2012; Garcia *et al.*, 2014; Ewert *et al.*, 2016; Su *et al.*, 2016; Marcell *et al.*, 2017; Clark *et al.*, 2018; Lynch *et al.*, 2018; Sagar-Ouriaghli *et al.*, 2020; MacDonald *et al.*, 2021). One health professional who worked closely with young men described this reluctance and lack of awareness, stating, 'They think they know it all. They think they don't need it. They don't want to admit that they might need it. It clashes with that image and their personal communication style' (Garcia *et al.*, 2014). In addition, young men reported having low understanding and familiarity with available health services and how these could be accessed (Timlin-Scalera *et al.*, 2003; Lindberg *et al.*, 2006; Hutchinson and Winsome, 2012; Samuel, 2015; Ewert *et al.*, 2016; DeBate *et al.*, 2018; Lynch *et al.*, 2018; Rice *et al.*, 2018a; Sagar-Ouriaghli *et al.*, 2020). Enhancing awareness of when symptoms warrant treatment was highlighted as a factor supporting help-seeking and health service access (Timlin-Scalera *et al.*, 2003; Garcia *et al.*, 2014; Lynch *et al.*, 2018; Sagar-Ouriaghli *et al.*, 2020).

One quantitative paper identified health literacy as a barrier to help-seeking. In their investigation, DeBate *et al.* (2018) explored the relationship between mental health literacy and intention to seek professional mental health services among 1242 males attending college. They established that mental health literacy predicted intent to seek professional mental health services, with self-stigma acting as a mediator of this relationship (DeBate *et al.*, 2018).

Interpersonal domain

Fewer studies reported factors influencing help-seeking and health service access at the interpersonal level. These factors can generally be classified as experiences of different types of social pressure. Among the studies reporting factors at the interpersonal level, 17 employed qualitative methodologies and one used a quantitative design. Additionally, a higher proportion of studies obtained data from informants closely associated with young men, with 6 studies gathering insights from these informants and 12 studies directly engaging with young men only. Most of the studies reporting interpersonal determinants were rated as being 'high' quality ($n = 12$), while the remainder were rated as 'moderate' quality.

Social pressure

Fear of negative evaluation from family members and peers was a major barrier reported by young men across studies. Qualitative findings highlighted that young men consistently expressed concern that seeking help from health services might lead to a loss of status and ostracism from their peers (Pearson, 2003; Timlin-Scalera *et al.*, 2003; Lindberg *et al.*, 2006; Lindsey *et al.*, 2006; Hutchinson and Winsome, 2012; Wilson *et al.*, 2012; Tang *et al.*, 2014; Samuel, 2015; Clark *et al.*, 2018; Lynch *et al.*, 2018; Rasmussen *et al.*, 2018; Rice *et al.*, 2018a; Meechan *et al.*, 2021). A participant reflected this concern by stating, 'It's harder for boys 'cause they've got images and stuff. You don't want to ruin your images with your mates' (Pearson, 2003). These findings were most prominent in studies investigating help-seeking in mental health and sexual health settings and when peers or family members had negative attitudes towards men's help-seeking (Timlin-Scalera *et al.*, 2003; Lindsey *et al.*, 2006; Tang *et al.*, 2014; Samuel, 2015; Lynch *et al.*, 2018; Rasmussen *et al.*, 2018; Meechan *et al.*, 2021). Conversely, receiving encouragement and support from peers and family members was the most frequently endorsed facilitator for help-seeking and health service access across studies (Timlin-Scalera *et al.*, 2003; Lindsey *et al.*, 2006; Kalmuss and Austrian, 2010; Wilson *et al.*, 2012; Garcia *et al.*, 2014; Tang *et al.*, 2014; Samuel, 2015; Marcell *et al.*, 2017; Sagar-Ouriaghli *et al.*, 2020). Additionally, having knowledge of other men's help-seeking behaviours and engagement with health services was also endorsed as a facilitator (Tang *et al.*, 2014; Clark *et al.*, 2018; Lynch *et al.*, 2018).

In the only study reporting quantitative findings on social pressure as a determinant for help-seeking and health service access, Marcell *et al.* (2007) found that parents communicating with their sons about reproductive health was predictive of these practices among young men.

Organizational domain

Eighteen studies reported factors influencing help-seeking and health service usage at the organizational level. These were predominantly service characteristics and aspects of service accessibility. Among these,

17 studies employed qualitative methodologies, while one study used a quantitative design. A smaller proportion of studies obtained data from informants closely associated with young men ($N = 4$), compared with those gathering insights directly from young men only ($N = 14$). In terms of research quality, 14 studies were rated as 'high quality', while the remaining were considered 'moderate quality'.

Service accessibility

The location of health facilities was identified as both a potential facilitator and barrier to help-seeking. Remote and isolated locations were cited as barriers due to the logistical challenges they pose (Pearson, 2003; Hutchinson and Winsome, 2012; Buzi and Smith, 2014). However, a public and highly visible location was also identified as a barrier because of reduced discretion and possible lack of confidentiality (Pearson, 2003; Hutchinson and Winsome, 2012; Buzi and Smith, 2014). Instead, young men endorsed a preference for health services that are situated in accessible but discrete locations (Lindberg *et al*., 2006; Hutchinson and Winsome, 2012; Buzi and Smith, 2014; Su *et al*., 2016; Clark *et al*., 2018). Long waiting times were reported as another barrier (Lindberg *et al*., 2006; Sagar-Ouriaghli *et al*., 2020), while having opening hours outside of business hours (9 am–5 pm) was endorsed as a facilitator (Buzi and Smith, 2014). One quantitative study identified service accessibility as potential facilitating factors for young men engaging in help-seeking and service usage (Biddle *et al*., 2004). This study found that young men experiencing a possible minor mental disorder were more likely to seek help from a GP if they had previously engaged in help-seeking behaviours (Biddle *et al*., 2004).

Service characteristics

The willingness of young men to engage with health services was consistently reported to be influenced by the clinical and cultural characteristics of those services. Concerns about privacy and confidentiality, particularly the possibility of being seen by known others at the health service, were frequently expressed as a significant barrier to engagement (Pearson, 2003; Timlin-Scalera *et al*., 2003; Lindberg *et al*., 2006; Hutchinson and Winsome, 2012; Ewert *et al*., 2016; Su *et al*., 2016; Marcell *et al*., 2017; Clark *et al*., 2018; Rice *et al*., 2018a; Sagar-Ouriaghli *et al*., 2020). The anxiety around confidentiality and ensuing gossip is demonstrated in one participant's remark, 'Yeah, if you go into the clinic, all the rumours start. People would start to talk. Everyone at school would know [about the clinic visit] and talk about you. They'd be looking at you when you walk in [to school]' (Lindberg *et al*., 2006).

Furthermore, negative previous experiences of help-seeking (Buzi and Smith, 2014), perceived disrespect from staff (Lindberg *et al*., 2006) and a lack of personal connection with clinicians (Lindberg *et al*., 2006; Hutchinson and Winsome, 2012; Buzi and Smith, 2014; Garcia *et al*., 2014; Sagar-Ouriaghli *et al*., 2020) were reported as barriers to help-seeking and engagement. In contrast, characteristics such as staff being perceived as male friendly (Buzi and Smith, 2014; Su *et al*., 2016; Rice *et al*., 2018a; Sagar-Ouriaghli *et al*., 2020), respectful (Lindberg *et al*., 2006; Hutchinson and Winsome, 2012; Buzi and Smith, 2014), and capable of establishing meaningful connections with young men were described as potential facilitators of engagement (Hutchinson and Winsome, 2012; Buzi and Smith, 2014; Rice *et al*., 2018a).

Some young men reported barriers to engagement, perceiving health services as primarily oriented towards women, which might be attributed to the prevalence of women-oriented promotional materials, the lack of men-specific services or having staff that are predominantly women (Pearson, 2003; Su *et al*., 2016; Rice *et al*., 2018a). Additionally, services were perceived as excessively clinical or intimidating, potentially due to an overly formal or sterile environment, or stringent procedural protocols (Pearson, 2003; Su *et al*., 2016; Rice *et al*., 2018a). Health services that managed to create a comfortable yet informal atmosphere by incorporating entertainment in waiting rooms and facilitating engagement through alternative venues or outdoor activities, especially when engaging boys in an office environment proved challenging, were reported as facilitators of engagement (Lindberg *et al*., 2006; Hutchinson and Winsome, 2012; Buzi and Smith, 2014).

Among school-aged males, the association between health services and disciplinary action was reported as being a barrier (Hutchinson and Winsome, 2012; Rice *et al*., 2018a). Conversely, health services that promoted autonomy, and allowed usage without teacher or parental permission were perceived as encouraging both help-seeking and engagement (Hutchinson and Winsome, 2012; Rice *et al*., 2018a). Among men with diverse sexual and cultural backgrounds, having clinicians capable of delivering culturally sensitive care was reported as a facilitator (Hussen *et al*., 2015; Griffin *et al*., 2018).

Societal domain

Societal-level determinants of help-seeking from health services were frequently reported across studies. These determinants are categorized into two themes: economic factors and cultural attitudes. Of the studies reporting determinants at this level, 23 used qualitative methods, while 5 used quantitative methods. A total of

eight studies reported insights from informants closely associated with young men, and 20 gathered data directly from young men only. In terms of research quality, 18 studies were rated as 'high', 9 as 'moderate' and 2 as 'low' (Omura *et al*., 2006; Ferrari *et al*., 2018). Both 'low-quality' papers highlighted the role of stigma as a barrier to help-seeking (Omura *et al*., 2006; Ferrari *et al*., 2018), which was also reported in a number of 'high-quality' studies (Timlin-Scalera *et al*., 2003; Lindberg *et al*., 2006; Garcia *et al*., 2014; Su *et al*., 2016; Marcell *et al*., 2017; Clark *et al*., 2018; DeBate *et al*., 2018; Rice *et al*., 2018a; Wasylkiw and Clairo, 2018; Cole and Ingram, 2020).

Economic factors

The financial cost of attending health services was identified as a barrier to help-seeking and accessing health care among young men (Kalmuss and Austrian, 2010; Buzi and Smith, 2014; Ewert *et al*., 2016; Marcell *et al*., 2017; Griffin *et al*., 2018). This cost is compounded by the loss of income and inconvenience associated with taking time off work to attend health services which are usually not open outside of usual business hours (Buzi and Smith, 2014). Having health insurance was identified as a facilitator (Marcell *et al*., 2017). Hussen *et al*. (2015), the only quantitative study reporting economic factors as a determinant, found that employment positively influenced medical appointment adherence among young gay and bisexual men living with HIV. Notably, almost all studies focusing on economic factors originated in the United States (Kalmuss and Austrian, 2010; Buzi and Smith, 2014; Hussen *et al*., 2015; Marcell *et al*., 2017; Griffin *et al*., 2018). An exception was an Australian study by Ewert *et al*. (2016), who found that the cost was a barrier to healthcare access only for international students, not for their Australian counterparts.

Cultural attitudes

The stigma of seeking health care was a recurring barrier identified among young men (Timlin-Scalera *et al*., 2003; Lindberg *et al*., 2006; Omura *et al*., 2006; Pederson and Vogel, 2007; Kalmuss and Austrian, 2010; Wilson *et al*., 2012; Garcia *et al*., 2014; Samuel, 2015; Su *et al*., 2016; Marcell *et al*., 2017; Clark *et al*., 2018; DeBate *et al*., 2018; Rice *et al*., 2018a; Wasylkiw and Clairo, 2018; Cole and Ingram, 2020). It was commonly reported that feelings of shame and embarrassment were related to perceptions of weakness or vulnerability for seeking help (Lindberg *et al*., 2006; Lindsey *et al*., 2006; Kalmuss and Austrian, 2010; Buzi and Smith, 2014; Garcia *et al*., 2014; Samuel, 2015; Ewert *et al*., 2016; Su *et al*., 2016; Rasmussen *et al*., 2018; Rice *et al*., 2018a). This is reflected in the observation of one participant's statement about a young man they knew who did not seek help before he died by suicide: 'He must have felt so embarrassed … so embarrassed he would rather die' (Rasmussen *et al*., 2018).

Specific subgroups reported unique cultural barriers: gay men cited fears of homophobic responses from health providers (Griffin *et al*., 2018; Lynch *et al*., 2018) and men of diverse cultural backgrounds were discouraged if clinicians had different cultural characteristics from them (Lindsey *et al*., 2006; Meechan *et al*., 2021). The only study which identified how cultural attitudes could act as a facilitator was conducted with Chinese young men in New Zealand (Omura *et al*., 2006), which identified the benefit of promoting more open discussion of sexual health for help-seeking and service usage by this population group.

The quantitative research on cultural factors underscores the complex interplay between self-stigma, masculinity and GRC in influencing help-seeking behaviours. DeBate *et al*. (2018) found that stigma served as a mediator in the relationships between information, motivation and intention to seek professional mental health services. Pederson and Vogel (2007) reported that GRC directly influenced willingness to seek counselling, with the impact of this factor mediated through self-stigma and attitudes towards disclosure. This aligns with the study by Cole and Ingram (2020), which found that self-stigma is linked to a reduced likelihood of both informal and professional help-seeking for depression, as well as increased avoidant behaviours. Wasylkiw and Clairo (2018) observed that the effect of masculine norms on help-seeking was partially driven by self-stigma. Overall, these studies highlight how cultural attitudes convey social norms (largely about masculinity) and generate forms of stigma that act as deterrents to help-seeking.

DISCUSSION

To our knowledge, the present review is the first to systematically collate and synthesize the literature on the distinct influences upon help-seeking and health service access among young men. The multiple perspectives provided by the SEM have revealed the depth and complexity of influences on young men's help-seeking behaviours, highlighting the need for multifaceted strategies to enhance their engagement with health services.

The findings of this review underscore the influence of masculinity beliefs on young men's help-seeking in relation to their health needs. Specifically, internalized ideals about strength and self-reliance, a core aspect

of traditional masculinity, act as a substantial barrier to health service use and can be understood within the SEM as an important individual-level determinant that is influenced by wider cultural norms. This insight corroborates extensive research highlighting the conflict between traditional masculinity and expressions of vulnerability associated with help-seeking across all age groups (Galdas *et al.*, 2005; Yousaf *et al.*, 2015; Mursa *et al.*, 2022). Interestingly, among older men, traditional masculinity can sometimes act as a facilitator for seeking health care. This is particularly true for those who see their health as directly tied to their ability to provide for their families (O'Brien *et al.*, 2005; Peak and Gast, 2014). This suggests a potential direction for future research: exploring the circumstances under which masculine attitudes might encourage rather than discourage health service engagement.

Inadequate health literacy was another salient barrier at the individual level of the SEM. Young men have been found to struggle to recognize symptoms and lack awareness of appropriate treatments, further exacerbating their reluctance to engage with health services. Furthermore, research indicates that low health literacy continues to be a barrier to men accessing health services across their lifespan (Ashley *et al.*, 2020; Mursa *et al.*, 2022), underscoring the potential benefits of early interventions in this area. Enhancing health literacy through targeted educational initiatives, such as interactive workshops and digital programs, has shown effectiveness in improving health service usage, and this review provides support for the tailoring of these interventions for young men (Berkman *et al.*, 2011; Oliffe *et al.*, 2019).

Within the interpersonal SEM domain, peer group pressures were identified as a salient barrier. This barrier appears to be intrinsically linked to young men's aspiration to preserve masculine ideals of strength and independence. The societal image of men as resilient and self-sufficient forms a backdrop against which being seen seeking health care by peers may equate to admitting vulnerability, causing embarrassment and perceived failure to meet these masculine ideals (Courtenay, 2000). This barrier appears most pronounced in relation to seeking help for sexual and mental health needs, possibly due to the heightened sensitivity and stigma in these areas. However, the limited number of studies focusing on physical health help-seeking makes it challenging to draw comprehensive comparisons across different health issues and service types. In contrast, support from family and peers served as a notable facilitator, indicating the significant potential of social networks in positively shaping help-seeking (Latkin and Knowlton, 2015). This impact is more pronounced in younger age groups, regardless of gender (Gulliver *et al.*, 2010; Radez *et al.*, 2021) and tends to be less significant in older men (Yousaf *et al.*, 2015; Mursa *et al.*, 2022). The emphasis young men place on peer conformity may explain the prominence of this facilitator in the literature (Ciranka and Van den Bos, 2019).

The review has illuminated the significant organizational influences impacting young men's health service engagement, confirming the value of adopting a social ecological perspective that recognizes broad and interrelated determinants, beyond individual beliefs and attitudes (MacDonald, 2016). It is clearly important to address elements like privacy, confidentiality and staff friendliness as these influence the comfort levels of young men in health settings, which aligns with existing literature on male-friendly health services (Smith *et al.*, 2008b; Cutcliffe *et al.*, 2013). Additionally, attention to the needs of young men from diverse social and cultural backgrounds is essential for enhancing the utilization of health services among a wider cohort of young men. This necessitates a shift in focus towards culturally sensitive care and consideration of alternative channels of outreach and engagement, including sporting and religious organizations and community events (Bird *et al.*, 2019; Abotsie *et al.*, 2020; McGrane *et al.*, 2020).

It has also been found here that determinants at the societal level of the SEM are instrumental in shaping young men's help-seeking and health service engagement. Economic barriers, particularly the financial cost of healthcare services, were emphasized, especially in the context of the United States. This is potentially indicative of systemic issues arising from the absence of a universal healthcare system (Vladeck, 2003). The identification of cultural influences that conveyed stigma and generated embarrassment and shame, revealed the processes by which masculinity norms are reinforced and internalized and affect young men's help-seeking behaviours. This aspect of societal influence, as seen through the SEM lens, intertwines with interpersonal and individual levels, where self-stigma and societal expectations shape personal health decisions. These findings, reinforced by quantitative studies, highlight the need for multifaceted solutions that extend beyond the healthcare system to broader social and economic reforms.

The review reveals methodological homogeneity in the existing studies, with a predominance of qualitative studies and a focus on young men's attitudes rather than behaviours. While these studies provide valuable insights, their findings are vulnerable to participant response bias and interpretive limitations.

This underscores a need for more diverse research approaches, including quantitative, mixed methods and longitudinal studies which consider young men's help-seeking behaviours as well as their stated attitudes. Additionally, the limited inclusion of stakeholder (e.g. service provider) perspectives in these studies suggests an opportunity to expand the scope of research to incorporate diverse viewpoints that may provide insights about interpersonal, organizational and societal influences on young men's health service engagement.

Moreover, the existing research has primarily focussed on mental and sexual health help-seeking, with few studies examining other aspects of physical health. While young men often exhibit good health status (ABS, 2021), it is important to acknowledge that disconnection from health care for many men is a process beginning in adolescence, reducing opportunities for preventative health care across the lifespan (Rice *et al*., 2018b). Therefore, there is a need for future studies about young men's attitudes and preferences towards physical health services, as this could provide insights into promoting proactive health management and preventive healthcare engagement. It will be valuable if this research explores the determinants of help-seeking across health issues and service types, which will provide the evidence base for appropriate interventions in different organizational contexts. In addition to these issues related to the methods and scope of the studies included in this review, it is important to acknowledge other limitations, including the restriction to English-language publications and studies published in high-income countries. Future research could explore the experiences of young men across different cultural contexts and socioeconomic backgrounds to provide a more holistic understanding of healthcare barriers and facilitators.

CONCLUSION

This review highlights the myriad barriers and facilitators young men encounter when help-seeking and engaging with health services. By adopting a social ecological framework, the review has identified key determinants within individual, interpersonal, organizational and societal domains. These findings highlight the importance of working in congruence with masculine attitudes, improving health literacy, leveraging social networks and optimizing service characteristics to enhance young men's engagement with healthcare services. These insights derived from the SEM's multi-level perspective offer a foundational understanding for developing effective strategies that consider the full spectrum of influences and will contribute to better health outcomes among young men. Further research and targeted interventions are essential to create healthcare systems that are inclusive, accessible and responsive to the needs

SUPPLEMENTARY MATERIAL

Supplementary material is available at *Health Promotion International* online.

AUTHOR CONTRIBUTIONS

R.P., B.S., P.P. and J.K. all made a major contribution to the conception and design of the project. All authors contributed to the development of the search strategy, study selection, data extraction, quality assessment and analysis. R.P. led the data analysis and was a major contributor in the drafting of the manuscript. B.S., P.P. and J.K. were instrumental in critically reviewing and revising the manuscript. All authors have read and approved the final manuscript and have agreed to submit it.

ACKNOWLEDGEMENTS

The authors would like to acknowledge academic liaison librarian Bernie Carr for their assistance in designing the search strategy used in the present review.

FUNDING STATEMENT

The authors wish to acknowledge the funding support for the lead author from the Men of Malvern and Healthy Male.

CONFLICT OF INTEREST STATEMENT

There are no conflicts of interest to report in relation to this manuscript.

Appendix 1

Section and topic	Item #	Checklist item	Reported on page #
TITLE			
Title	1	Identify the report as a systematic review.	1
ABSTRACT			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	2
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	3, 4
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	3, 4
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	5, Appendix 3
Information sources	6	Specify all databases, registers, websites, organizations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	5
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	Appendix 2
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	5, 6
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	6
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	6
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	6
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	6
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	n/a
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).	6
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	6
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	6
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	6
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	n/a
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	n/a

Section and topic	Item #	Checklist item	Reported on page #
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	n/a
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	n/a
RESULTS			
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	7
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	n/a
Study characteristics	17	Cite each included study and present its characteristics.	7
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	n/a
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.	n/a
Results of syntheses	20a	For each synthesis, briefly summarize the characteristics and risk of bias among contributing studies.	7–15
	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	n/a
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	n/a
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	n/a
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	n/a
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	n/a
DISCUSSION			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	16–19
	23b	Discuss any limitations of the evidence included in the review.	18
	23c	Discuss any limitations of the review processes used.	18
	23d	Discuss implications of the results for practice, policy and future research.	16–19
OTHER INFORMATION			
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	5
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	5
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	n/a
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	20
Competing interests	26	Declare any competing interests of review authors.	20
Availability of data, code and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.	n/a

From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, *et al*. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71.

Appendix 2

SEARCH TERMS SCOPUS

Barrier* OR enable* OR facilitat* OR determinant* OR factors OR motivat* OR correlate* OR delay* OR obstacles OR correlates AND (seek* W/3 (help OR care OR health* OR treatment* OR support* OR medical)) OR helpseek* OR help-seek* AND (medical OR 'health care' OR healthcare OR 'primary health' OR 'health service' OR gp OR 'general practice*' OR 'family practice*' OR counsel*) W/3 (access* OR utilis* OR utiliz* OR underutili* OR engage*) AND men OR man OR male* OR men's

SEARCH TERMS MEDLINE

Barrier* OR enable* OR facilitat* OR determinant* OR factors OR motivat* OR correlate* OR delay* OR obstacles OR correlates OR 'Social Determinants of Health'/ OR Socioeconomic Factors/ AND (seek* adj3 (help OR care OR health* OR treatment* OR support* OR medical)) OR helpseek* OR help-seek* OR Help-Seeking Behavior/ AND (medical OR 'health care' OR healthcare* OR 'primary health' OR 'health service' OR gp OR 'general practice*' OR 'family practice*' OR counsel*) adj3 (access* OR utilis* OR utiliz* OR underutili* OR engage*) OR Health Services Accessibility/ AND men OR man OR male* OR men's OR Men/

SEARCH TERMS PSYCHINFO

Barrier* OR enable* OR facilitat* OR determinant* OR factors OR motivat* OR correlate* OR delay* OR obstacles OR correlates OR Treatment Barriers/ OR exp Socioeconomic Status/ AND (seek* adj3 (help OR care OR health* OR treatment* OR support* OR medical)) OR helpseek* OR help-seek* OR Help Seeking Behavior/ OR Health Care Seeking Behavior/ AND (medical OR 'health care' OR healthcare* OR 'primary health' OR 'health service' OR gp OR 'general practice*' OR 'family practice*' OR counsel*) adj3 (access* OR utilis* OR utiliz* OR underutili* OR engage*) OR Health Care Utilization/ OR Health Care Access/ AND men OR man OR male* OR men's OR exp Human Males/

SEARCH TERMS EMBASE

Barrier* OR enable* OR facilitat* OR determinant* OR factors OR motivat* OR correlate* OR delay* OR obstacles OR correlates AND (seek* adj3 (help OR care OR health* OR treatment* OR support* OR medical)) OR helpseek* OR help-seek* OR Help Seeking Behavior/ AND (medical OR 'health care' OR healthcare* OR 'primary health' OR 'health service' OR gp OR 'general practice*' OR 'family practice*' OR counsel*) adj3 (access* OR utilis* OR utiliz* OR underutili* OR engage*) OR Health Care Utilization/ OR Health Care Access/ AND men OR man OR male* OR men's OR male/

SEARCH TERMS CINAHL

Barrier* OR enable* OR facilitat* OR determinant* OR factors OR motivat* OR correlate* OR delay* OR obstacles OR correlates OR MH 'Socioeconomic Factors+' AND (seek* N3 (help OR care OR health* OR treatment* OR support* OR medical)) OR helpseek* OR help-seek* OR MH 'Help Seeking Behavior' AND (medical OR 'health care' OR healthcare* OR 'primary health' OR 'health service' OR gp OR 'general practice*' OR 'family practice*' OR counsel*) N3 (access* OR utilis* OR utiliz* OR underutili* OR engage*) OR MH 'Health Services Accessibility+' AND men OR man OR male* OR men's OR MH 'Men' OR MH 'Male'

Appendix 3

	Inclusion criteria	Exclusion criteria
Population	Men aged 12–24 years. The age range adopted is consistent with how the Australian Institute of Health and Welfare defines 'young person' (Australian Institute of Health and Welfare, 2021). Men who are members of the general community, or university, or school students.	Men who are institutionalized or with psychosocial needs (e.g. addiction) which prevent them from seeking or accessing health care.
Exposure	Studies reporting barrier and facilitator determinants in-line with the SEM domains (intrapersonal, interpersonal, organizational, environmental and public policy).	
Outcome	Help-seeking practices and healthcare access among young men.	Studies which do not consider either help-seeking practices or healthcare access among young men.

	Inclusion criteria	Exclusion criteria
Type of study	Qualitative or mixed methods primary studies. Quantitative primary studies measuring cross-sectional or longitudinal associations between exposure and outcome.	Literature reviews or other forms of evidence synthesis.
Limits	Studies published in peer-reviewed journals in the English language between 2002 and 2022. This period was chosen to capture contemporary issues, including the impact of internet and social media use on engagement and help-seeking (Ybarra and Suman, 2006; Best *et al*., 2014).	Studies focusing on symptomology or ongoing management of specific conditions. Studies which do not analyse data from men separately.
	Studies reporting on high-income economy countries as determined by the World Bank (The World Bank, 2022)	Studies reporting on low and middle-income economy countries as determined by the World Bank (The World Bank, 2022)

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Chapter Four: Age-Related Differences in Men's Preferences and Barriers to Healthcare: Insights from a National Australian Survey

4.1 Preface

This chapter addresses Thesis Objective 2: to examine age-related differences in help-seeking preferences and perceived barriers to healthcare use among Australian men.

Chapter 1 highlighted a tendency within the existing men's health literature to examine men as a homogeneous group, with insufficient attention to developmental differences across the lifespan. While Chapter 3 synthesised the determinants of help-seeking among young men and mapped influences across socio-ecological domains, it did not establish whether these influences are developmentally specific or reflect broader patterns observed across men of all ages. As a result, there is a need for direct empirical comparison to establish whether young men demonstrate a distinct help-seeking profile and to identify which barriers may be developmentally salient.

This chapter addresses this gap through analysis of data from a national men's health survey developed by Healthy Male, a national organisation funded by the Australian Government Department of Health, to inform national priorities and address evidence gaps in men's health and help-seeking. Population-level analysis involves the use of large, representative datasets to examine health status, trends, and patterns across defined groups within a population (1). Such datasets allow researchers to generate estimates that reflect broader population characteristics rather than the experiences of selected clinical or convenience samples. The survey was designed to address identified evidence gaps in men's help-seeking and health service engagement, making it particularly suited to examining age-related differences within a population-representative Australian sample. By using population-level data, this study

provides generalisable insights into how younger men differ from older cohorts in their engagement with health services.

Within the broader research program, this phase served a developmental and descriptive function. Specifically, this chapter empirically tests whether young men represent a developmentally meaningful subgroup with a distinct help-seeking profile. As outlined in Chapter 2, establishing this distinction provides the empirical foundation for the focused examination of psychosocial determinants among young men in Chapter 5 and the qualitative exploration of their experiences in Chapter 6.

This research presented in this chapter have been published in *PLOS One*

Citation

Palmer R, Kite J, Phongsavan P, Moss TJ, Marshall B, Halim N, Smith BJ. Age-related differences in men's preferences and barriers to healthcare: Insights from a national Australian survey. *PLoS One*, 2025;20(5). doi.https://doi.org/10.1371/journal.pone.0323733.

Additional materials relevant to this chapter are provided in Appendix B. National Men's Health Survey Questionnaire is presented in Appendix B.1. Logistic regression analyses on association between socio-demographic characteristics and practical barriers to healthcare engagement for men are presented in Appendix B.2 (Table B.1). The Monash University Human Research Ethics Committee Approval Certificate is presented in Appendix B.3.

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4.2 Published Manuscript

PLOS One

RESEARCH ARTICLE

Age-related differences in men's preferences and barriers to healthcare: Insights from a national Australian survey

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Citation: Palmer R, Kite J, Phongsavan P, Moss TJ, Marshall B, Halim N, et al. (2025) Age-related differences in men's preferences and barriers to healthcare: Insights from a national Australian survey. PLoS One 20(5): e0323733. https://doi.org/10.1371/journal.pone.0323733

Editor: Fatma Refaat Ahmed, University of Sharjah College of Health Sciences, UNITED ARAB EMIRATES

Received: September 30, 2024

Accepted: April 14, 2025

Published: May 23, 2025

Data availability statement: The data underlying the results presented in this study are available in the Monash University Figshare Research Repository at DOI: 10.26180/28449137.

Abstract

Objectives

The high burden of preventable disease among men in many countries has highlighted the urgency of promoting stronger engagement by men in health services and programs. In order to inform prevention and early intervention strategies in Australia, this study aimed to examine how age and other socio-demographic factors moderate help-seeking preferences among men in this population, and the major psychosocial and practical barriers to healthcare use for men across the life course.

Design

Cross-sectional survey using a nationally representative sample.

Setting

Online survey in March 2021.

Participants

English-speaking Australian men aged 18-years and older, recruited using a probabilistic sampling method. Of the 1,409 men invited to participate, 1,282 (91%) completed the survey.

Main outcome measures

Preferences for help-seeking related to physical and mental health, and psychosocial and practical barriers to help-seeking.

Funding: The authors wish to gratefully acknowledge the funding support for RP from the Men of Malvern. Healthy Male, the organisation which conducted this national survey, is funded by the Australian Department of Health and Aged Care.

Competing interests: The authors have declared that no competing interests exist.

Results

Compared to men aged 70 years and over, younger men were less likely to choose professional sources of help, with those aged 18–29 years showing the lowest odds when needing assistance for physical (OR = 0.28, 95% CI 0.17–0.49) and mental health (OR = 0.28, 95% CI 0.16–0.46). Men in this youngest age group also reported experiencing more practical barriers to healthcare access with 77 out of 241 (32%) men experiencing three or more barriers to healthcare engagement, compared to 16 out of 172 (9.3%) men over 70 years. Multivariable analysis showed that younger age was associated with higher psychosocial barriers to help-seeking.

Conclusions

Age is a significant factor in men's health help-seeking preferences in Australia and these findings highlight the unique help-seeking profile of younger men. Younger Australian men are less likely to seek help proactively, and encounter more practical and psychosocial barriers than older men. The findings underscore the necessity for public health strategies to engage younger men effectively in proactive health management.

Introduction

The health of Australian males is a critical issue that reflects a wider global challenge, necessitating urgent action. Australian men, on average, experience nearly five years less of 'healthy life' than women and face higher rates of mortality due to preventable diseases and suicide. [1–4] A crucial factor in these poorer health outcomes experienced by men is a reduced rate of regular and timely medical help-seeking and healthcare utilisation. [5,6] The Australian Government's National Men's Health Strategy (NMHS) 2020–2030 aims to address these disparities by enhancing the health system's capacity to engage with and care for Australian men. [7] This strategy underscores the urgent need to understand and improve the ways that men use health services, and how these services can best meet the physical and mental health needs of men. [7]

Research from Australia and a number of other countries indicates that men's health help-seeking behaviours are shaped by complex interactions between individual beliefs, social influences, and systemic and societal factors. [8–10] For instance, social support plays a nuanced role in men's engagement with health services. In some contexts, men may fear that seeking help might lead to a loss of status or ostracism from their peers, particularly in environments where vulnerability is stigmatised. [8] However, in communities where male help-seeking is positively valued, social support can encourage men to access services. [8, 11] The attitudes held by a man's social network can therefore either facilitate or hinder help-seeking behaviours, highlighting the importance of contextual factors in shaping outcomes. Other potential barriers, such as limited health literacy, and poor service accessibility (e.g., due to cost, location, or privacy concerns) add further complexity to men's help-seeking. [8–10]

While existing research has provided valuable insights into these factors, much of it relies on qualitative methods with small sample sizes or a focus on specific populations and health conditions. [8–10] This limits the ability to generalise across diverse populations or examine the broader influence of socio-demographic factors on men's help-seeking behaviours. Preliminary population-level research highlights the important role of socio-demographic factors, particularly age, as moderators of men's attitudes and behaviours toward healthcare. [6, 12–14] Younger men, for instance, are less likely to hold positive attitudes toward preventive healthcare practices or attend regular health check-ups, potentially contributing to lifelong disengagement from health services. [6,12,15] Furthermore, age is a factor related to how masculine attitudes interact with help-seeking behaviours. [14] While masculine traits like self-reliance and independence have been viewed as inconsistent with the vulnerability required to seek professional help, [16] evidence suggests that these same traits can positively influence healthcare engagement in certain contexts. [14] For example, older men may associate maintaining their health with their ability to provide for their families, leading them to actively seek medical support when needed. [17,18] These findings underscore the importance of exploring how socio-demographic factors, including age, shape men's perceptions of and approaches to healthcare.

Despite these insights, there remains a gap in the literature regarding how various socio-demographic factors are related to men's approaches to health help-seeking and the barriers they face, at the population level. This study aims to address this gap by examining: i.) How are age and other socio-demographic characteristics related to help-seeking preferences for physical and mental health in Australian men?; and, ii.) What are the key psychosocial and practical barriers to healthcare use, and how do these vary across different age groups and socio-demographic factors? This investigation can provide an evidence base to guide strategies to promote increased engagement with health services by men across the life course, ultimately contributing to the reduction of health disparities and improvement of men's health outcomes.

Methods

Study design

This study used a national cross-sectional survey of Australian men, with ethics approval obtained from the Monash University Human Research Ethics Committee (Approval No. 27289). The study adheres to Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines. [19]

Participants and sampling

Study participants were English-speaking males aged 18 years and older with access to both telephone and the internet. Men were recruited through the Life in Australia (LiA) panel, [20] established by the Social Research Centre in 2016. The LiA panel comprises a probabilistic sample of approximately 4,000 Australian adults enlisted using a dual-frame random digit dialling (DFRDD) method with a 30:70 split between landline and mobile phone numbers. [21]

To ensure representativeness, enrolment weights were calculated using design and post-stratification processes, aligning the LiA sample with Australian population benchmarks. [21] The generalised regression method was used to create the weights, employing non-linear optimisation to minimise weight variation while meeting population totals. [22,23] Data were weighted to the Australian Bureau of Statistics Census profile (2020) [22] across key demographic variables, including age, country of birth, geographic distribution, educational attainment, Socioeconomic Index for Areas (SEIFA) score (a postcode based socioeconomic classification), telephone access, and duration at current residence to reflect the demographic profile of Australians. [24] These survey weighting and DFRDD methods help reduce any biases likely to be introduced through non-coverage and non-response, and improve the generalisability of survey results to the broader Australian male population. [21,22]

All men in the LiA panel ($N = 1409$) were invited through email and text message to complete the survey, with telephone follow-up of non-responders. The invitations included a participant information statement, and written consent was obtained before men continued to complete the survey. Participants received a $10 gift-card for participating in the survey.

Survey measures

The survey was developed by Healthy Male, a national men's health agency funded by the Australian Department of Health (see S1 Appendix). The selection of survey measures was informed by consultation with medical and allied health advisors, and a review of Australian and international men's health surveys. The survey was completed online from 15–29 March 2021.

Participants provided their age, residential postcode (used to classify SEIFA), [25] marital status, educational background, occupation, and country of birth. Participants were also asked about any disabilities and chronic physical or mental health conditions they have.

Help-seeking preferences regarding physical health concerns were measured using items developed by Vincent et al. [26] On a 7-point scale, participants rated their likelihood of engaging in 10 help-seeking actions when experiencing symptoms of physical ill-health, including making an appointment with a doctor immediately, monitoring symptoms to attempt self-diagnosis, and calling a helpline. Participants also rated, using the same scale, their likelihood of seeking help when experiencing ongoing regular pain. Responses were recoded into binary outcomes such that a score of ≥6 (highly likely) was coded as high and <6 (moderate to not likely) coded as low.

In relation to mental health needs, help-seeking preferences were measured using items from the *Ten to Men* Australian longitudinal study on men's health. [27] Participants rated, on a 7-point scale, their likelihood of 13 different preferences, including mental health professionals, trusted websites, family and friends, or choosing not to seek help at all when experiencing psychological issues. Responses on this scale were again recoded, with a score of ≥6 coded as high and <6 coded as low.

Practical barriers to healthcare access were also measured using items from the *Ten to Men* study. [27] Here, participants were asked if any of 12 listed reasons (e.g., cost, waiting time) had prevented them from accessing necessary healthcare services, including an option for participants to mention unlisted reasons.

The Barriers to Help-Seeking Scale (BHSS) [28] was used to measure psychosocial barriers to help-seeking. This 31-item scale asks participants to assess the significance of different reasons for not seeking help, on a 7-point scale. The BHSS categorises these reasons into five subscales, all of which demonstrate good internal reliability: need for control and self-reliance ($\alpha = 0.93$); minimising problems and resignation ($\alpha = 0.89$); concrete barriers and distrust of caregivers ($\alpha = 0.79$); privacy concerns ($\alpha = 0.83$); and emotional control ($\alpha = 0.89$). Mental health-related stigma was assessed using an 8-item subscale of the Inventory of Attitudes toward Seeking Mental Health Services (IASMHS). [29] Here participants rated, on a 5-point scale, their agreement with various reasons for not seeking professional help for psychological problems. Items within the BHSS sub-scales and IASMHS were summed and mean scale scores were calculated, with higher mean scores indicating higher levels of barriers or stigma.

Statistical analysis

Prevalence calculations were made for physical and mental health help-seeking preferences and practical barriers to seeking healthcare. Bivariate differences were examined using Chi-square, and independent relationships between variables were assessed using forced entry multivariable logistic and linear regression modelling, adjusting for all social-demographic variables as well as self-reported physical and mental health status. Socio-demographic variables included in the analysis were selected based on prior evidence linking these factors to health help-seeking behaviours. [30–36] Statistical analyses were performed using IBM SPSS V28.0.

Results

Sample characteristics

Of the 1409 men invited to participate in the survey, 1282 completed the survey (91.0%). Weighted distributions of the socio-demographic profile of the surveyed population are presented in Table 1.

Table 1. Characteristics of survey participants (N = 1,282).

Demographic and health factors	n	Unweighted %	Weighted %
Age (years)			
18-29	241	8.9	18.8
30-39	270	12.4	21.1
40-49	207	16.2	16.2
50-59	198	18.4	15.5
60-69	189	22.7	14.7
70+	172	21.4	13.5
Residential location			
Urban	874	68.2	66.6
Rural	406	31.7	33.4
Marital status			
Never married	193	15.1	22.4
Married/partner	943	73.6	67.4
Divorced/widowed	140	10.9	9.9
SEIFA quintile			
Q1 (most disadvantaged)	197	15.4	19.1
Q2	214	16.7	20
Q3	240	18.7	19.8
Q4	275	21.5	20.6
Q5 (least disadvantaged)	352	27.5	19.9
Education			
University	613	47.9	33.2
Vocational	366	28.6	38.8
High school	262	20.5	28.1
Occupation			
Manager/professional	738	57.6	47.5
Trades/manual	321	25.1	30.5
Sales/service	198	15.5	18.8
Other	24	1.9	3.2
Country of birth			
English speaking	1066	83.2	77.3
Non-English speaking	212	16.5	22.7
Disability			
Living with a disability	313	24.4	22.3
Chronic disease			
Physical condition	674	52.6	45.5
Mental condition	191	14.9	16.7

[a]Variables with totals less than 1,282 are due to missing data. [b] Data weighted using Australian Bureau of Statistics, 2020, Population estimates. [c] Socio-Economic Indexes for Areas.

https://doi.org/10.1371/journal.pone.0323733.t001

Physical health help-seeking preferences

As shown in Table 2, men in the younger and middle-aged age groups (up to 50 years) consistently demonstrated a lower prevalence of help-seeking intentions than men aged 70 and over, except in the use of online resources. Multivariable analysis showed that, compared to those aged 70 and over, the odds ratios (OR) for seeking help from professional

Table 2. Logistic regression analyses of associations between socio-demographic characteristics and physical health help-seeking preferences of men.

Population segment	Professional help for symptoms		Online help for symptoms		Family/friend help for symptoms		Self-manage symptoms		Seek help for ongoing pain	
	n (%)	OR (95% CI)	n (%)	OR (95% CI)	n (%)	OR (95% CI)	n (%)	OR (95% CI)	n (%)	OR (95% CI)
All men	434 (34)		527 (41)		568 (44)		472 (37)		810 (63)	
Age group										
70+	91 (53)	Ref	36 (21)	Ref	75 (43)	Ref	40 (23)	Ref	132 (77)	Ref
18-29	57 (24)	0.28 (0.17-0.49)**	119 (50)	2.34 (1.34-4.10)*	118 (49)	0.88 (0.53-1.46)	108 (45)	3.06 (1.77-5.28)**	151 (63)	0.39 (0.23-0.68)**
30-39	72 (27)	0.35 (0.22-0.58)**	144 (53)	2.98 (1.76-5.05)**	131 (49)	0.85 (0.53-1.36)	141 (52)	4.13 (2.47-6.90)**	157 (59)	0.38 (0.23-0.63)**
40-49	63 (30)	0.44 (0.27-0.71)**	98 (47)	2.54 (1.50-4.30)**	95 (46)	0.91 (0.57-1.45)	78 (38)	1.98 (1.18-3.30)*	121 (59)	0.38 (0.23-0.63)**
50-59	67 (34)	0.51 (0.33-0.81)*	65 (33)	1.70 (1.01-2.87)*	76 (38)	0.74 (0.47-1.17)	60 (30)	1.48 (0.89-2.45)	119 (60)	0.44 (0.27-0.72)*
60-69	84 (44)	0.80 (0.51-1.24)	65 (35)	2.00 (1.19-3.36)*	73 (39)	0.76 (0.48-1.19)	45 (24)	1.14 (0.68-1.91)	130 (69)	0.61 (0.37-1.00)
Location										
Urban	293 (34)	Ref	408 (48)	Ref	396 (47)	Ref	313 (37)	Ref	554 (65)	Ref
Rural	141 (33)	0.79 (0.59-1.06)	121 (28)	0.57 (0.42-0.76)**	171 (40)	0.82 (0.62-1.08)	159 (37)	1.14 (0.85-1.51)	259 (61)	0.71 (0.54-0.94)*
Marital status										
Never married	89 (31)	Ref	137 (48)	Ref	132 (46)	Ref	127 (45)	Ref	184 (65)	Ref
Divorced/widowed	54 (43)	0.80 (0.48-1.33)	33 (26)	0.57 (0.33-0.97)*	29 (23)	0.33 (0.19-0.57)**	41 (33)	0.91 (0.54-1.54)	76 (60)	0.72 (0.43-1.19)
Married/defacto	291 (34)	0.68 (0.48-0.96)*	356 (41)	0.84 (0.60-1.17)	406 (47)	0.97 (0.70-1.34)	304 (35)	0.96 (0.69-1.33)	548 (64)	0.78 (0.56-1.10)
SEIFA quintile										
Q1 (most disadvantaged)	95 (39)	Ref	91 (37)	Ref	109 (45)	Ref	85 (35)	Ref	150 (62)	Ref
Q2	93 (36)	0.98 (0.67-1.45)	95 (37)	0.95 (0.63-1.42)	106 (41)	0.83 (0.57-1.22)	99 (39)	1.14 (0.77-1.68)	168 (66)	1.24 (0.84-1.81)
Q3	77 (30)	0.74 (0.50-1.11)	108 (42)	1.26 (0.84-1.87)	108 (43)	0.77 (0.53-1.12)	97 (38)	1.04 (0.70-1.54)	158 (63)	1.22 (0.83-1.79)
Q4	93 (35)	0.93 (0.64-1.36)	115 (44)	0.99 (0.67-1.46)	129 (49)	1.01 (0.70-1.46)	109 (41)	1.21 (0.83-1.78)	163 (62)	1.07 (0.73-1.55)
Q5 (least disadvantaged)	75 (29)	0.70 (0.47-1.06)	120 (47)	0.89 (0.59-1.34)	113 (44)	0.72 (0.48-1.05)	81 (32)	0.74 (0.49-1.13)	169 (66)	1.08 (0.72-1.61)
Education										
University	126 (31)	Ref	220 (54)	Ref	191 (47)	Ref	151 (37)	Ref	257 (63)	Ref
Trade/vocational	168 (35)	1.00 (0.71-1.41)	160 (33)	0.75 (0.54-1.03)	197 (41)	1.12 (0.82-1.54)	164 (34)	1.23 (0.88-1.71)	303 (63)	0.96 (0.69-1.33)

(Continued)

Table 2. (Continued)

Population segment	Professional help for symptoms		Online help for symptoms		Family/friend help for symptoms		Self-manage symptoms		Seek help for ongoing pain	
	n (%)	OR (95% CI)	n (%)	OR (95% CI)	n (%)	OR (95% CI)	n (%)	OR (95% CI)	n (%)	OR (95% CI)
High school	123 (35)	1.08 (0.75-1.54)	139 (40)	0.92 (0.66-1.29)	160 (46)	1.25 (0.89-1.74)	142 (41)	1.65 (1.17-2.34)*	230 (66)	1.01 (0.71-1.42)
Occupation										
Manager/ professional	198 (33)	Ref	306 (50)	Ref	291 (48)	Ref	235 (39)	Ref	390 (65)	Ref
Trades/manual	143 (37)	1.10 (0.80-1.50)	108 (28)	0.53 (0.39-0.73)**	154 (39)	0.76 (0.56-1.03)	132 (34)	0.78 (0.57-1.07)	241 (62)	1.01 (0.74-1.37)
Sales/service	84 (35)	0.99 (0.70-1.41)	98 (41)	0.78 (0.55-1.09)	104 (43)	0.86 (0.62-1.21)	90 (37)	0.80 (0.57-1.14)	154 (64)	0.95 (0.68-1.34)
Country of birth										
English speaking	326 (33)	Ref	372 (38)	Ref	418 (42)	Ref	349 (35)	Ref	637 (65)	Ref
Non-English speaking	108 (37)	1.53 (1.12-2.10)*	154 (53)	1.21 (0.89-1.65)	149 (52)	1.23 (0.91-1.66)	123 (42)	1.11 (0.81-1.52)	173 (60)	0.83 (0.61-1.13)
Disability										
No disability	326 (33)	Ref	450 (45)	Ref	461 (46)	Ref	379 (38)	Ref	624 (63)	Ref
Lives with disability	108 (38)	0.97 (0.71-1.33)	80 (28)	0.64 (0.46-0.89)	107 (37)	0.81 (0.60-1.11)	93 (33)	1.05 (0.76-1.45)	189 (66)	1.03 (0.75-1.41)

Note. [a] Occupation category 'Other' not included due to small sample size. All analyses adjusted for all socio-demographic variables and self-reported physical and mental health status. *p < 0.05; **p < 0.001.

https://doi.org/10.1371/journal.pone.0323733.t002

sources were lowest for 18–29-year-old men (OR = 0.29, 95% confidence interval (CI) 0.17–0.49), and also lower in the 30–39 years, 40–49 years, 50–59 years and 60–69 years aged brackets. All age groups below 70 years also showed higher odds of using online sources for help, and this was most pronounced among 30–39-year-olds (OR = 2.98, 95% CI 1.76–5.05).

Additionally, men across the 18–29, 30–39, 40–49, and 50–59 year age groups demonstrated a lower willingness to seek help for ongoing pain compared to those aged 70 and over. The lowest odds of seeking help were observed in the 18–29 (OR = 0.39, 95% CI 0.23 − 0.68) and 30–39 (OR = 0.38, 95% CI 0.23 − 0.63) year age groups. Men in the 18–29, 30–39, and 40–49 year age groups were more likely than the oldest age group to prefer to self-manage symptoms, with the 30–39 year age group exhibiting the highest odds of this behaviour (OR = 4.13, 95% CI 2.47–6.90). Notably, several of these age-related odds ratios exceed established thresholds for practical significance, [37] meaning that these differences are not only statistically significant but also large enough to have meaningful real-world implications.

Other significant geographical and demographic associations with help-seeking preferences are shown in Table 2. Men in rural areas were less inclined to seek help online or for ongoing regular pain compared to their urban counterparts. Married men were less likely to seek professional help than men who had never married, while divorced or widowed men showed a lower tendency to use online resources or consult friends than those never married. Educational background and occupation emerged as significant factors; men with a high school level education were more inclined to self-manage symptoms, whereas those in trade or manual labour occupations showed a lesser likelihood to consult online sources compared with professionals. Men born in non-English speaking countries were more likely to seek professional help than those born in English speaking countries.

Mental health help-seeking preferences

As shown in Table 3, men in all age groups below 70-years reported a lower preference than the older group for seeking professional help when experiencing psychological difficulties. This was most pronounced in young men aged 18–29 years (OR = 0.28, 95% CI 0.16–0.46). Men in the youngest age groups were more likely to seek help from family or friends compared to men in the oldest age category (18–29: OR = 2.24, 95% CI 1.33–3.78; 30–39: OR = 1.94, 95% CI 1.20–3.13). Additionally, men in the 18–29, 30–39 and 40–49 age groups were more likely than men aged 70 and over to seek help from online sources, with the highest likelihood observed in the 30–39 year age group (OR = 3.48, 95% CI 1.77–6.83). As seen in physical health preferences, many of these age-related odds ratios exceed thresholds for practical significance. [37]

Men in rural areas were less likely to seek professional help than those in urban settings. Divorced men showed a higher likelihood of seeking help than those who had never married. Additionally, men in the second least disadvantaged SEIFA quintile (Q4) were less inclined to use online sources for help compared to men in the most disadvantaged quintile (Q1). Men with a trade or vocational education were least likely to use helplines, and along with those with a high school level education, were also least likely to seek support from family or friends. Conversely, men born in non-English speaking countries reported a preference to consult professional services, use online sources, and contact helplines compared to those from English speaking countries.

Psychosocial barriers to help-seeking across age groups

Multivariable analysis (Table 4) shows that age was inversely related to most of the psychosocial barriers to seeking help for physical or mental health problems, with younger men reporting higher barriers than older age groups. Specifically, men in the 18–29, 30–39, and 40–49 year age cohorts, reported higher levels of concern about self-reliance and control, indicating a belief that seeking help would compromise their independence. This was most prominent in the 30–39 year age group ($\beta = 0.72$, 95% CI 0.43–1.00, $p < 0.001$).

Table 3. Logistic regression analyses of associations between socio-demographic characteristics and mental health help-seeking preferences of men.

Population segment	Professional		Online		Family and friends		Helpline		Would not seek help	
	n (%)	OR (95% CI)	n (%)	OR (95% CI)	n (%)	OR (95% CI)	n (%)	OR (95% CI)	n (%)	OR (95% CI)
All men	582 (46)		304 (24)		492 (38)		119 (9)		157 (12)	
Age group										
70+	105 (61)	Ref	15 (9)	Ref	45 (26)	Ref	15 (9)	Ref	20 (12)	Ref
18-29	90 (37)	0.28 (0.16-0.46)**	80 (33)	2.77 (1.36-5.63)*	131 (54)	2.24 (1.33-3.78)*	19 (8)	0.88 (0.34-2.24)	25 (10)	0.76 (0.35-1.65)
30-39	105 (39)	0.31 (0.19-0.49)**	96 (36)	3.48 (1.77-6.83)**	132 (49)	1.94 (1.20-3.13)*	26 (10)	0.88 (0.36-2.14)	40 (15)	1.51 (0.76-2.98)
40-49	83 (40)	0.30 (0.18-0.48)**	47 (23)	2.09 (1.04-4.18)*	76 (37)	1.57 (0.98-2.51)	25 (12)	1.72 (0.73-4.04)	28 (14)	1.21 (0.60-2.43)
50-59	103 (52)	0.61 (0.39-0.96)**	35 (18)	1.92 (0.96-3.85)	58 (29)	1.26 (0.81-1.99)	19 (10)	1.57 (0.68-3.64)	28 (14)	1.27 (0.66-2.47)
60-69	96 (51)	0.63 (0.40-0.99)*	31 (17)	1.88 (0.94-3.77)	50 (27)	1.04 (0.67-1.62)	15 (8)	1.17 (0.49-2.79)	16 (9)	0.75 (0.37-1.54)
Location										
Urban	401 (47)	Ref	242 (28)	Ref	357 (42)	Ref	89 (10)	Ref	96 (11)	Ref
Rural	182 (43)	0.65 (0.49-0.86)*	61 (14)	0.59 (0.42-0.84)*	135 (32)	1.07 (0.81-1.41)	30 (7)	1.11 (0.66-1.84)	61 (14)	1.23 (0.83-1.84)
Marital status										
Never married	114 (40)	Ref	86 (30)	Ref	152 (53)	Ref	31 (11)	Ref	45 (16)	Ref
Divorced/widowed	59 (47)	0.78 (0.47-1.29)	18 (14)	0.68 (0.35-1.31)	37 (29)	0.73 (0.44-1.20)	8 (6)	0.41 (0.16-1.08)	8 (6)	0.34 (0.15-0.80)*
Married/defacto	410 (48)	1.07 (0.77-1.49)	198 (23)	0.90 (0.63-1.30)	303 (35)	1.39 (0.99-1.95)	79 (9)	0.65 (0.39-1.10)	104 (12)	0.72 (0.46-1.14)
SEIFA quintile										
Q1 (most disadvantaged)	107 (44)	Ref	64 (26)	Ref	91 (37)	Ref	19 (8)	Ref	32 (13)	
Q2	122 (48)	1.26 (0.86-1.84)	56 (22)	0.89 (0.57-1.41)	102 (40)	1.11 (0.76-1.62)	17 (7)	1.08 (0.51-2.26)	35 (14)	0.94 (0.55-1.60)
Q3	116 (46)	1.09 (0.74-1.60)	56 (22)	0.89 (0.57-1.40)	91 (36)	0.86 (0.59-1.26)	23 (9)	1.73 (0.87-3.46)	31 (12)	0.94 (0.55-1.62)
Q4	115 (43)	0.97 (0.67-1.41)	55 (21)	0.59 (0.38-0.93)*	103 (39)	1.21 (0.83-1.78)	25 (9)	1.48 (0.75-2.92)	25 (9)	0.64 (0.36-1.14)
Q5 (least disadvantaged)	118 (46)	1.02 (0.69-1.51)	72 (28)	0.79 (0.51-1.24)	101 (40)	1.27 (0.85-1.89)	35 (14)	2.65 (1.35-5.21)*	32 (13)	0.92 (0.52-1.63)
Education										
University	180 (44)	Ref	136 (33)	Ref	189 (46)	Ref	49 (12)	Ref	44 (11)	
Trade/vocational	218 (45)	1.01 (0.73-1.39)	83 (17)	0.76 (0.52-1.10)	163 (34)	0.71 (0.51-0.98)*	33 (7)	0.55 (0.32-0.95)*	60 (13)	1.03 (0.63-1.67)
High school	164 (47)	1.13 (0.81-1.58)	82 (24)	0.91 (0.62-1.33)	127 (37)	0.67 (0.48-0.95)*	31 (9)	0.80 (0.46-1.39)	52 (15)	1.30 (0.79-2.14)
Occupation										
Manager/professional	289 (48)	Ref	174 (29)	Ref	250 (41)	Ref	53 (9)	Ref	64 (11)	Ref
Trades/manual	174 (45)	0.79 (0.58-1.07)	61 (16)	0.70 (0.48-1.01)	133 (34)	1.15 (0.84-1.56)	30 (8)	1.61 (0.93-2.75)	49 (13)	1.09 (0.69-1.72)
Sales/service	106 (44)	0.79 (0.57-1.11)	53 (22)	0.83 (0.56-1.23)	89 (37)	1.04 (0.74-1.46)	35 (15)	2.87 (1.69-4.87)**	40 (17)	1.50 (0.94-2.40)
Country of birth										
English speaking	444 (45)	Ref	192 (19)	Ref	356 (36)	Ref	72 (7)	Ref	128 (13)	
Non-English speaking	139 (48)	1.40 (1.04-1.90)*	112 (39)	1.73 (1.24-2.40)*	135 (47)	0.90 (0.66-1.23)	46 (16)	2.99 (1.87-4.79)**	28 (10)	0.80 (0.49-1.29)
Disability										
No disability	445 (45)	Ref	260 (26)	Ref	399 (40)	Ref	92 (9)	Ref	120 (12)	
Lives with disability	139 (49)	0.91 (0.67-1.23)	44 (15)	0.77 (0.51-1.15)	93 (33)	1.19 (0.87-1.62)	27 (9)	1.34 (0.78-2.30)	37 (13)	1.03 (0.66-1.62)

Note. [a] Occupation category 'Other' not included due to small sample size. All analyses adjusted for all socio-demographic variables and self-reported physical and mental health status. *p < 0.05; **p < 0.001.

https://doi.org/10.1371/journal.pone.0323733.t003

Table 4. Linear regression analyses on association between age and psychosocial barriers to seeking help and mental health stigma of men.

	Need for control and self-reliance		Minimising problems and resignation		Concrete barriers and distrust of caregivers		Privacy		Emotional control		Mental health stigma	
	mean (SD)	β (95% CI)	mean (SD)	β (95% CI)	mean (SD)	β (95% CI)	mean (SD)	β (95% CI)	mean (SD)	β (95% CI)	mean (SD)	β (95% CI)
18-29 years	2.54 (1.44)	0.54 (0.23-0.85)**	3.80 (1.44)	1.00 (0.65-1.35)**	2.75 (1.37)	1.09 (0.81-1.36)**	2.77 (1.44)	0.88 (0.56-1.19)**	3.09 (1.60)	0.81 (0.46-1.17)**	2.39 (0.81)	0.25 (0.06-0.43)*
30-39 years	2.76 (1.32)	0.72 (0.43-1.00)**	4.07 (1.39)	1.24 (0.92-1.57)**	2.73 (1.31)	1.00 (0.74-1.25)**	3.09 (1.40)	1.11 (0.82-1.40)**	3.41 (1.47)	1.05 (0.72-1.38)**	2.46 (0.75)	0.32 (0.15-0.49)**
40-49 years	2.69 (1.47)	0.66 (0.38-0.95)**	3.76 (1.43)	0.96 (0.63-1.29)**	2.54 (1.21)	0.82 (0.56-1.08)**	2.74 (1.47)	0.75 (0.45-1.05)**	3.19 (1.62)	0.85 (0.52-1.18)**	2.54 (0.84)	0.42 (0.24-0.59)**
50-59 years	2.41 (1.40)	0.38 (0.11-0.65)*	3.32 (1.61)	0.52 (0.20-0.83)*	2.34 (1.21)	0.63 (0.38-0.88)**	2.39 (1.42)	0.43 (0.14-0.71)*	2.83 (1.59)	0.52 (0.20-0.84)*	2.37 (0.80)	0.23 (0.06-0.39)**
60-69 years	2.24 (1.29)	0.24 (-0.03-0.52)	3.08 (1.49)	0.28 (-0.03-0.59)	2.01 (1.10)	0.30 (0.06-0.54)*	2.12 (1.27)	0.17 (-0.11-0.45)	2.53 (1.46)	0.23 (-0.08-0.55)	2.29 (0.68)	0.14 (-0.03-0.30)
70 + years	1.98 (1.13)	Ref	2.82 (1.44)	Ref	1.72 (0.93)	Ref	1.91 (1.13)	Ref	2.25 (1.41)	Ref	2.19 (0.74)	Ref

Note. All analyses adjusted for all socio-demographic variables and self-reported physical and mental health status. Higher scores indicate higher levels of barrier/stigma. * $p < 0.05$; ** $p < 0.001$.

https://doi.org/10.1371/journal.pone.0323733.t004

Across these younger age groups, there was also a greater tendency to minimise health issues, suggesting that they were less likely to regard their problems as serious enough to warrant professional help. This was highest among 30–39-year-olds (β = 1.24, 95% CI 0.92–1.57, p < 0.001). Privacy concerns, reflecting fears of vulnerability or exposure, were similarly elevated in these groups, with the highest levels in the 30–39-year-olds (β = 1.11, 95% CI 0.82–1.40, p < 0.001).

The desire to maintain emotional control, which indicates a reluctance to express emotional distress or seek assistance, was notably higher among these younger men, particularly the 30–39-year-olds (β = 1.05, 95% CI 0.72–1.38, p < 0.001). These age groups reported higher concrete barriers such as financial and logistic constraints, especially 18–29-year-olds (β = 1.09, 95% CI 0.81–1.36, p < 0.001). Stigma associated with mental health help-seeking was a notable factor with the 18–29, 30–39, 40–49, and 50–59 year age groups reporting this experience more often than men aged 70 and over. This indicates that these men may perceive a higher level of judgment and/or shame associated with seeking help for psychological problems.

Practical barriers to health care across age groups

Fig 1 presents a breakdown of the most reported practical barriers to healthcare (by at least 10% of respondents) that men in different age groups had experienced in the preceding 12 months. Younger age groups generally indicated more barriers than their older counterparts, with the exception of the COVID-19 impact on service availability (OR presented in S2 Table). Notably, 77 (32%) men aged 18–29 years (OR = 7.56, 95% CI 3.74–15.29) and 86 (32%) men aged 30–39

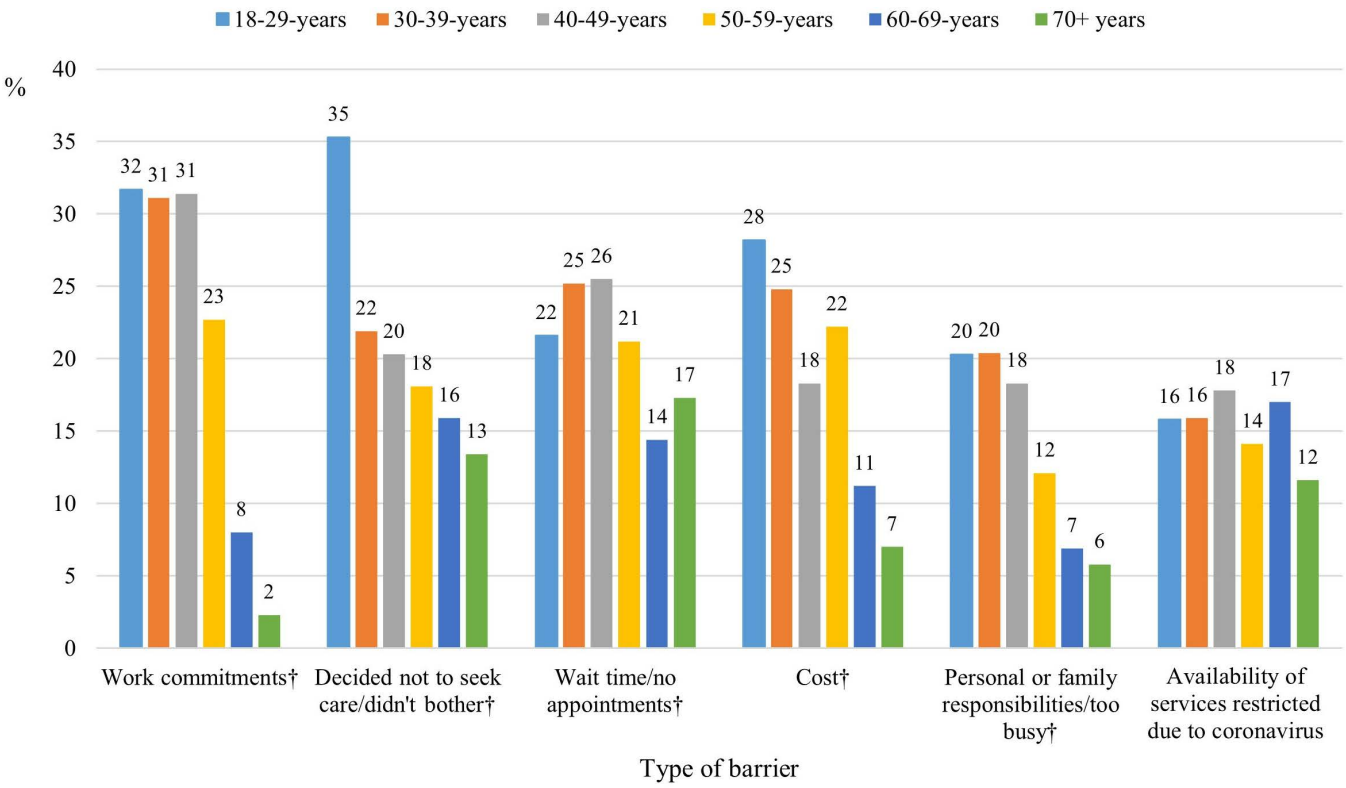

Fig 1. Prevalence of practical barriers to health care in the past 12 months, by age group; Note: † Chi-square, p < 0.05.

https://doi.org/10.1371/journal.pone.0323733.g001

years (OR = 7.00, 95% CI 3.57–13.71) reported experiencing three or more barriers to healthcare engagement, compared to 16 (9%) men aged 70 and over.

Among younger men, 76 (32%) aged 18–29 years (OR = 33.44, 95% CI 10.36–107.91) and 84 (31%) of those aged 30–39 years (OR = 30.74, 95% CI 9.71–97.34) identified work commitments as an impediment; in contrast, only 4 men (2%) aged 70 and over identified this as a barrier. Similarly, deciding not to seek care was a barrier predominantly reported by the youngest group, with 85 men (35%) aged 18–29 identifying this, whereas less than 22% of men 30 years and older considered it a concern. Cost was a barrier reported by 68 men (28%) aged 18–29 years (OR = 13.29, 95% CI 5.82–30.38) and 67 men (25%) aged 30–39 years (OR = 8.79, 95% CI 3.95–19.53), in contrast with only 21 (7%) of those aged 70 and over. Lastly, personal or family responsibilities were reported as barriers more frequently by young and middle-aged men, with 49 (20%) of those aged 18–29, 55 (20%) of those aged 30–39 and 38 (18%) of the 40–49 age bracket indicating this challenge. While the impact of COVID-19 on service availability was a barrier reported by more than 10% of participants, there were no age-related differences. These age-related odds ratios also exceeded the thresholds for practical significance. [37]

Discussion

This study underscores the significance of age as a factor in men's health help-seeking preferences and barriers in Australia. Our findings reveal a notable reluctance among younger men to seek professional help for both physical and mental health problems. Importantly, while older men may have a higher burden of chronic health conditions, [38] our analysis adjusted for these and other socio-demographic factors. Therefore, the observed reluctance among younger men to engage with healthcare services remains a key concern. These findings align with existing research that identifies young men as a demographic group with lower rates of professional help-seeking, particularly for mental health difficulties, and a tendency towards behaviours that delay early disease prevention. [8,12,15,26,39] The consistency and magnitude of the observed age-related differences, with many odds ratios exceeding established thresholds for meaningful effect sizes, [37] reinforce the real-world implications of these results. This underscores the importance of policymakers and healthcare providers to engage closely with young men to better understand their needs and enhance services in ways that promote stronger healthcare engagement. Strengthening these connections is crucial for designing policies and services that are both accessible and aligned with young men's preferences and experiences.

The preference among younger men for seeking help from online sources and personal networks presents an opportunity to tailor health service engagement strategies. Potential interventions could include peer support services led by men who have experienced similar health challenges. These initiatives have been found to not only increase health literacy and treatment adherence but have also demonstrated effectiveness for men dealing with emotional difficulties and cancer. [40,41] Such programs have been delivered through various channels, including sports clubs, religious organisations, and community events [42,43] offering lower barriers to entry for younger individuals. [44] Additionally, leveraging e-Health as an initial point of contact for professional care may facilitate healthcare engagement. Text messaging and educational websites have shown promise in promoting help-seeking behaviours in relation to sexual and mental health among men. [45,46] Furthermore, engaging a personal support person, such as a family member or close friend, may encourage attendance at healthcare appointments, and adherence to treatments. [47,48]

Psychosocial barriers, including stigma and concerns over emotional vulnerability, present additional challenges to promoting timely help-seeking by young men. These findings suggest that targeted interventions, particularly those that promote health services in ways that align with masculine attitudes, could be instrumental in encouraging healthcare engagement. For example, using campaigns that reframe help-seeking as a strength rather than a weakness could be instrumental in promoting more proactive health behaviours. [17,49] Such campaigns might leverage situations where masculine values could motivate rather than deter health service engagement, such as when men see their health as tied to their productivity and ability to contribute to family life. [17,18]

The identification of practical barriers, particularly among younger men, such as work commitments, cost, and personal responsibilities, is congruent with previous research [8] and emphasises the necessity for healthcare systems to adapt to the needs and lifestyles of this group. These findings reinforce the need for policymakers and healthcare services to remain attuned to the structural challenges young men face, recognising that awareness campaigns and information distribution are unlikely to be sufficient to alter patterns of help seeking and healthcare engagement. Solutions such as flexible scheduling, telehealth services, and workplace or community-based health initiatives could mitigate these barriers, making health services more accessible and appealing to younger men. [45,50,51] Further research is warranted to determine which flexible arrangements are most effective in alleviating these structural barriers and ensuring that interventions are tailored to the specific needs and preferences of younger men.

While our study shows consistent patterns across age groups, it also sheds light on the complexities of men's health help-seeking, revealing that a variety of socio-demographic characteristics are related to their preferences. Factors like country of birth, education status, and marital status were all independently associated with selected help-seeking preferences. Although this study's scope did not allow for a deeper investigation, the intersecting effects, and mechanisms through which these factors may influence help-seeking warrant further investigation.

This study's strength lies in its use of probabilistic sampling and population weighting, ensuring a sample representative of Australian men. However, limitations include the exclusion of non-English speakers, populations without internet or phone access and low representation of men from rural locations. As a result, these possible geographical and cultural moderators of help-seeking behaviours were not accounted for. Additionally, potential biases may be introduced by the reliance on self-reported data, which may be subject to social desirability biases. [52] Nevertheless, the risk of such biases is reduced by the anonymous data collection process. [53]

This study provides novel insights into the distinct help-seeking preferences among men across various age groups. The urgency of addressing these factors is compounded by men's use of health services, which decreases during adolescence, undermining early diagnosis and intervention to prevent morbidity. [10,15,54,55] By offering a population-level analysis that delineates the specific help-seeking preferences and barriers of men at different life stages, this paper makes a significant contribution to the body of research informing the NMHS. This clearly highlights that the development of targeted help-seeking interventions for young men must be a priority. This is crucial, as effectively engaging young men can set a foundation for health behaviours that persist throughout life, potentially redressing the burden of preventable disease, injury and mortality among men that has consistently been shown in population health surveillance.

Supporting information

S1 Appendix. National Men's Health Survey Questionnaire.
(DOCX)

S2 Table. Logistic regression analyses on association between socio-demographic characteristics and practical barriers to healthcare engagement for men. Note. [a] Occupation category 'Other' not included due to small sample size. All analyses adjusted for all socio-demographic variables and self-reported physical and mental health status. *$p < 0.05$; **$p < 0.001$.
(DOCX)

Acknowledgments

The authors wish to acknowledge Simon von Saldern, CEO of Healthy Male, for his contributions to the survey development, and Dr Katherine Owen, Senior Biostatistician at the Prevention Research Collaboration, Sydney School of Public Health, The University of Sydney, for her assistance in data analysis. Contributions made by medical, nursing and allied health advisors of Healthy Male in developing the survey, are also acknowledged.

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Chapter Five: Determinants of Young Men's Help-Seeking Behaviour: Insights from a National Australian Survey

5.1 Preface

This chapter addresses Thesis Objective 3: to investigate how psychosocial and practical determinants of young men's healthcare engagement operate and shape perceived barriers to accessing care.

Chapter 3 showed that while research has identified a range of potential determinants influencing young men's help-seeking, most of this evidence has been derived from qualitative studies. Although these studies have provided valuable insight into the types of influences shaping help-seeking, they are limited in their generalisability and in their capacity to clarify the relative contribution or interaction of determinants across domains. Chapter 4 subsequently established, at the population level, that younger men demonstrate a distinct help-seeking profile and face notable practical and psychosocial barriers.

Building on this foundation, the current chapter presents further analysis of the national men's health survey developed by healthy male to provide population-level evidence for key multi-level determinants previously identified in the literature, clarifying their relative and interacting influence on perceived barriers to healthcare engagement.

To achieve this, structural equation modelling was used. Structural equation modelling was selected as it enables for a more integrated examination of determinants across socio-ecological levels through the simultaneous estimation of multiple relationships and the examination of both direct and indirect pathways.

This research presented in press with the *American Journal of Men's Health*

Citation

Palmer R, Kite J, Phongsavan P, Owen KB, Moss TJ, Marshall B, Halim N, Smith BJ. (in press). Determinants of young men's help-seeking behaviour: Insights from a national Australian survey. *Am J Mens Health*. doi:10.1177/15579883251412964.

Additional materials relevant to this chapter are provided in the Appendix B and Appendix C. National Men's Health Survey Questionnaire is presented in Appendix B.1. The Monash University Human Research Ethics Committee Approval Certificate is included in Appendix B.3. Structural equation model showing direct and indirect associations between psychosocial factors and total barriers Appendix C (Figure C.1).

5.2 Manuscript (in press)

American Journal of Men's Health
January-February 1–12

DOI: 10.1177/15579883251412964
journals.sagepub.com/home/jmh
Sage

Determinants of Young Men's Help-Seeking Behavior: Insights From a National Australian Survey

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Abstract

Young men face unique barriers to accessing health care, contributing to poor health outcomes. We used data from 188 Australian men aged 18–34 years, who participated in a nationally representative cross-sectional survey, to examine the relationships between health literacy, health empowerment, social support, loneliness, and barriers to health care. Structural equation modeling was used to examine direct and indirect associations, adjusting for sociodemographic factors and health status. Loneliness and health literacy were consistently associated with barriers to help-seeking. Higher health literacy was linked to lower barriers ($\beta = -0.26$, $p = .001$), whereas higher loneliness was associated with higher barriers ($\beta = 0.24$, $p = .007$). Higher health empowerment was associated with lower concrete barriers and distrust of caregivers ($\beta = -0.20$, $p = .007$), and loneliness was found to be indirectly associated with concrete barriers and distrust of caregivers through health empowerment ($\beta = 0.07$, $p = .024$). Social support was not associated with barriers to help-seeking. These findings underscore the importance of health literacy and loneliness as consistent determinants of help-seeking and highlight the role of health empowerment in reducing practical and interpersonal access barriers. The results can inform the design of interventions to improve health care engagement among young men.

Keywords

young men, help-seeking behavior, loneliness, health literacy

Received: July 4, 2025; revised: December 12, 2025; accepted: December 17, 2025

On average, men experience nearly 5 fewer years of healthy life than women and face higher rates of mortality from preventable diseases and suicide (Australian Institute of Health and Welfare, 2020, 2022, 2023; Pirkis et al., 2016; World Health Organization, 2018, 2021). Across global contexts, including Australia, the European Union, the United Kingdom, the United States, and countries in Asia and Africa, men consistently demonstrate reduced engagement with health services and lower rates of help-seeking behavior (Australian Institute of Health and Welfare, 2023; Rosu et al., 2017; Smits et al., 2018; Tong et al., 2011; Wang et al., 2013; World Health Organization, 2018; Yeatman et al., 2018). A pattern of delayed and reduced engagement with health care is a crucial factor contributing to men's poorer health outcomes, with studies highlighting later diagnoses and reduced use of preventive and mental health services among men (Australian Institute of Health and Welfare,

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2023; P. Baker, 2016; Clarke et al., 2013; Juel & Christensen, 2008; Lyratzopoulos et al., 2013; Mursa et al., 2022; Schlichthorst et al., 2016). Deepening our understanding of factors that may influence how men engage with health services is important for enhancing the health system's capacity to support men's health.

Age has been identified as a significant factor influencing men's health help-seeking preferences and behaviors (McGraw et al., 2021; Palmer et al., 2025; Schlichthorst et al., 2016). Notably, attitudes and behaviors that reduce opportunities for engagement with health services appear to be prominent among young men, potentially contributing to lifelong disengagement from health care services (Palmer et al., 2024, 2025; J. A. Smith et al., 2006). Despite experiencing high rates of psychological distress and suicide, young men have among the lowest rates of professional help-seeking for mental health of any group across the lifespan (D. Baker & Rice, 2017; Burke & McKeon, 2007; Rickwood et al., 2005; B. Smith et al., 2023; Vincent et al., 2018). Understanding and addressing the factors that affect young men's engagement with health services is therefore essential for improving both immediate and long-term health outcomes (Marcell et al., 2007; B. Smith et al., 2023; J. A. Smith et al., 2006; Vincent et al., 2018).

Young men's help-seeking behaviors are influenced by a multifaceted set of determinants operating across socioecological levels (Palmer et al., 2024). Among these determinants, qualitative studies have highlighted the importance of psychosocial factors in shaping help-seeking behaviors. For instance, a study by Lynch et al. (2018) involving 17 young men in Ireland aged 18 to 24 years found that low health literacy, including difficulty identifying symptoms and understanding the need for treatment, was a significant barrier to accessing mental health services. The study found that concerns about losing status and facing ostracism from peers further discouraged help-seeking. Conversely, having knowledge of other men's help-seeking behaviors and receiving social support from peers were seen as key facilitators (Lynch et al., 2018). These findings are illustrative of the broader qualitative literature, highlighting health literacy and social support as important determinants of young men's help-seeking (Palmer et al., 2024).

The positive effects of social support appear to be most pronounced in contexts where peers and family members consider male help-seeking as legitimate and acceptable and endorse it as behavior that is congruent with masculine values (Palmer et al., 2024). This role of social support underscores the potential compounding impact of loneliness, a related but distinct component of social well-being (Lim et al., 2023; K. P. Smith & Christakis, 2008) with established links to health outcomes and health service engagement (Geboers et al., 2016; Vasan et al., 2023). Recent Australian population-level research shows that severe loneliness in men is associated with lower health literacy and health empowerment and less favorable attitudes toward preventive health practices (Lim et al., 2025). These findings raise concerns given the high prevalence of loneliness among young men (Australian Institute of Health and Welfare, 2025; Ending Loneliness Together, 2023) and highlight the need to better understand how loneliness interacts with other psychosocial determinants to influence help-seeking.

While qualitative research has identified a range of factors that influence young men's help-seeking, it remains unclear how these factors interact or their relative influence on help-seeking behaviors. Quantitative research in this area is also limited (Palmer et al., 2024). In one of the few quantitative studies, Boman and Walker (2010) investigated the role of general self-efficacy (GSE) in moderating the relationship between conformity to masculinity norms and perceived barriers to health care among 118 Australian university students (mean age 23.7 years). Their findings suggested that GSE might mitigate some of the barriers to help-seeking behaviors, highlighting the potential of psychological constructs like self-efficacy to shape health care engagement in young men (Boman & Walker, 2010).

These findings raise important questions about the related concept of health empowerment and its role in young men's help-seeking. Health empowerment extends the principles of self-efficacy into a health care context, emphasizing the skills and participatory behaviors necessary to navigate health care systems effectively (Wallerstein, 1992). Health empowerment is associated with improved health behaviors and outcomes (Laverack, 2006; Náfrádi et al., 2017; Wallerstein, 1992) and is closely connected with psychosocial factors that may influence young men's help-seeking, with studies showing that higher health empowerment is associated with greater health literacy, stronger social connections, and lower levels of loneliness (Çiftci et al., 2023; Demirel & Ayaz-Alkaya, 2024; Lin et al., 2019).

Health empowerment offers a theoretical and empirically grounded mechanism linking psychosocial factors to help-seeking by young men. For instance, loneliness has been consistently associated with heightened hypervigilance to threat, diminished trust in others, and reduced confidence in navigating social interactions (Cacioppo & Hawkley, 2009; Hawkley & Cacioppo, 2010). This may erode a young man's sense of control and capability in health care contexts, increasing the likelihood of perceiving help-seeking as difficult, unsafe, or unmanageable (Cacioppo & Hawkley, 2009; Hawkley & Cacioppo, 2010; Lim et al., 2025). Low health literacy may similarly reduce an individual's ability to recognize

symptoms, evaluate treatment options, and communicate effectively with providers, reducing perceived capacity to act on health concerns and lowering confidence in engaging with health care (Mursa et al., 2024; Oliffe et al., 2020). In contrast, social support may strengthen health empowerment by reinforcing self-efficacy, providing encouragement, modeling adaptive help-seeking, and signaling that accessing care is legitimate and acceptable (Palmer et al., 2024). Together, these pathways suggest that loneliness, health literacy, and social support may shape young men's perceived help-seeking barriers in part through their influence on health empowerment.

The described literature highlights a range of intrapersonal and social factors that may, in direct or combined ways, influence young men's help-seeking behaviors. It is notable that, while qualitative studies have revealed a range of potential determinants of men's help-seeking, quantitative research is limited and has largely concentrated on a narrow set of variables, such as masculine attitudes and self-stigma, without examining broader psychosocial factors (Palmer et al., 2024). Further, much of this research has been limited in scope, focusing primarily on population subgroups, such as university students or young men already engaged with health care (Palmer et al., 2024).

In this study, we aim to address these gaps by using population-level data to examine the influences of social support, loneliness, health literacy, and health empowerment on perceived barriers to help-seeking among young men. In doing so, we seek to build a broader conceptual framework, grounded in the existing literature, that explores whether health empowerment may serve as a mechanism through which psychosocial factors shape help-seeking barriers. By examining both the direct and indirect pathways, we aim to contribute to a more comprehensive understanding of the determinants influencing young men's health care engagement and provide insights to inform targeted intervention development.

Methods

Study Design

This study uses data from a national cross-sectional survey of Australian men. Ethics approval was acquired from the Monash University Human Research Ethics Committee (Approval No. 27289). The reporting of the study is based on the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines (Von Elm et al., 2007).

Participants and Sampling

Participants were recruited through the Life in Australia (LiA) panel (Dove & Smith, 2021). This panel consists of a probabilistic sample of approximately 4,000 Australian adults recruited through random digit dialing with a 30:70 distribution between landline and mobile phone numbers (Kaczmirek et al., 2019). To be eligible for the LiA panel, participants had to be aged 18 years or older, speak English, and have access to a telephone and an internet connection.

All men in the LiA panel ($N = 1.409$) received an invitation through email and text message to participate in the survey, with follow-up phone calls to those who did not respond. The invitations included an information statement about the study, and participants confirmed their consent by choosing to complete the survey. Participants were given a $10 gift-card for taking the survey. The online survey was conducted during March 2021.

Survey Measures

The survey (see Supplementary File 1) was developed by Healthy Male, which is a national men's health organization funded by the Australian Department of Health and Aging. Survey measures were selected based on consultation with medical and allied health advisors, as well as a review of Australian and international men's health surveys.

Participants provided their age, residential postcode (used to determine SEIFA) (Australian Bureau of Statistics, 2018), marital status, educational background, occupation, and country of birth. Participants were also asked about any disabilities and chronic physical or mental health conditions they might have.

Social support was measured with the Multidimensional Scale of Perceived Social Support, which consists of 12 items and has good internal reliability and satisfactory construct validity (Zimet et al., 1990). Loneliness was assessed using the 3-item version of the revised UCLA loneliness scale (UCLA-3), which demonstrates acceptable internal reliability and both discriminant and concurrent validity (Hughes et al., 2004). Health literacy was evaluated using the 16-item European Health Literacy Survey Questionnaire (HLS-EU-Q16) (Sørensen et al., 2013), selected for its suitability to general population contexts as opposed to health care-specific settings. This questionnaire emphasizes public health dimensions of health literacy, such as disease prevention and health promotion, and demonstrates a robust scale structure and strong concurrent validity in multiple populations. Health empowerment was measured using the 8-item Perceived Health Competence scale (M. Smith et al., 1995), which also demonstrates internal reliability and construct validity.

Barriers to help-seeking were measured using the 31-item Barriers to Help-Seeking Scale (BHSS; Mansfield et al., 2005). Using a 7-point scale, the BHSS asks participants to rate the significance of different reasons for not seeking help. These reasons are categorized

into five subscales: need for control and self-reliance; concrete barriers and distrust of caregivers; minimizing problems and resignation; privacy concerns; and emotional control. Higher scores on the BHHS indicate higher levels of barriers to help-seeking. Each subscale demonstrated robust internal reliability (see Table 2)

Statistical Analysis

Survey data were weighted using enrollment weights derived through design and post-stratification procedures to align the LiA sample with Australian population benchmarks (Kaczmirek et al., 2019). Generalized regression methods were applied for weighting, using non-linear optimization to minimize weight variability while matching known population totals (Deville et al., 1993; Dove & Smith, 2021). Weighting was based on the Australian Bureau of Statistics Census profile (2020; Dove & Smith, 2021) accounting for demographic variables, including age, country of birth, geographic location, educational level, Socioeconomic Index for Areas (SEIFA) score (a postcode-based socioeconomic index), telephone access, and duration at current place of residence (Australian Bureau of Statistics, 2020). Weighting was calculated for the full LiA male panel and was not recalibrated for the 18- to 34-year-old subsample used in the present analysis.

Bivariate associations between variables were examined using a Pearson correlation matrix. This included the total and subscale scores for barriers to help-seeking, psychosocial factors (health literacy, loneliness, health empowerment, and social support), relevant sociodemographic (country of birth and SEIFA quintile), and health status characteristics (disability status and mental and physical health status). Correlations were calculated separately for the total BHSS score and each of the five subscales.

Subsequent multivariable linear regression analyses were conducted to assess the associations between psychosocial factors and barriers to help-seeking. Each regression model was adjusted for relevant sociodemographic and health status variables, using forced-entry linear regression to account for potential confounding factors. Separate models were run for the total BHSS score and for each of the five BHSS subscales as dependent variables.

Structural equation modeling (SEM) was used to examine the direct associations between the psychosocial variables and barriers to help-seeking and to explore whether health empowerment functioned as a potential pathway linking health literacy, social support, and loneliness to these barriers. Six separate SEMs were specified, one for the total BHSS score and one for each of the five subscales as dependent variables. The model structure remained consistent across all six models; only the dependent variable (total or subscale barrier score) varied. Each model estimated direct paths from psychosocial variables to help-seeking barriers, as well as indirect paths from health literacy, social support, and loneliness to help-seeking barriers via health empowerment. All models were also adjusted for relevant sociodemographic and health status variables. All SEM models were estimated using maximum likelihood estimation in R's lavaan package (Rosseel, 2012). Model fit was assessed using Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC), Comparative Fit Index (CFI), Tucker–Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR). As all six SEMs were just-identified ($df = 0$), these indices indicate a perfect fit (CFI = 1.00, TLI = 1.00, RMSEA = 0.00, SRMR = 0.00), though this is not interpretable in the conventional sense. Multicollinearity was assessed using variance inflation factors (VIFs) across linear regression models corresponding to each SEM outcome. All VIFs ranged from 1.05 to 1.65, indicating low multicollinearity.

Statistical analyses were performed using R statistical computing software (version 4.4.1; R Core Team, 2024), within RStudio (Posit team, 2024). Missing data ranged from 1.6% to 8.5% across variables, with the highest proportion observed for the total barriers to help-seeking score. Correlation analyses were conducted using pairwise deletion, and listwise deletion was used for regression analyses and SEM. Although no formal sensitivity analysis was conducted, missing data were within an acceptable range (<10%; Bennett, 2001) and patterns of associations were consistent across analytic approaches.

Results

Sample Characteristics

Of the 1,409 men invited to participate in the survey, 1,282 completed the survey (91.0%). For this analysis, we selected the subset of 188 young men aged 18 to 34 years. Sociodemographic and health status characteristics for this group are presented in Table 1.

As shown in Table 2, participants reported moderate levels of health empowerment ($M = 27.45$, $SD = 4.88$) and social support ($M = 5.12$, $SD = 1.06$) with higher scores indicating greater perceived competence in managing health-related tasks and greater perceived social support. On average, health literacy scores fell within the lower end of the "sufficient" range ($M = 13.32$, $SD = 2.94$), with some participants scoring within the "inadequate" or "problematic" range. Participants reported moderate levels of loneliness ($M = 5.62$, $SD = 1.89$), with scores ranging from "low" to "severe." Minimizing

Table 1. Sociodemographic and Health Characteristics of Survey Participants, 18 to 34 Years (n = 188).

Demographic and health factors	n (%)
Residential location	
Urban	142 (76.5)
Rural	42 (22.3)
Marital status	
Never married	91 (48.4)
Married/partner	90 (47.9)
Divorced/widowed	2 (1.1)
SEIFA quintile	
Q1 (lowest)	23 (12.2)
Q2	26 (13.8)
Q3	37 (19.7)
Q4	40 (21.3)
Q5 (highest)	57 (30.3)
Education	
University	93 (49.5)
Vocational	36 (19.1)
High school	54 (28.7)
Occupation	
Manager/professional	104 (55.3)
Trades/manual	28 (14.9)
Sales/service	37 (19.7)
Other	16 (8.5)
Country of birth	
English speaking	143 (76.1)
Non-English speaking	42 (22.3)
Disability	
Living with a disability	24 (12.8)
Not living with a disability	161 (85.6)
Chronic disease	
Physical condition	45 (23.9)
Mental condition	29 (15.4)
No chronic disease	132 (70.2)

Note. Variables with totals less than 188 are due to missing data, which ranged from 1.6% to 2.7%, with the highest proportions observed for education level, SEIFA quintile, and marital status. SEIFA = Socioeconomic Index for Areas, a postcode-based index of socioeconomic position. Quintiles indicate relative socioeconomic position, with lower quintiles reflecting greater disadvantage.
[a]Participants reporting at least one physical or mental condition. The full list of conditions is provided in Supplementary File 1.

problems and resignation (M = 3.80, SD = 1.39) and the need for emotional control (M = 3.08, SD = 1.52) were the most prominent barriers to help-seeking, followed by privacy concerns (M = 2.75, SD = 1.33), concrete barriers and distrust of caregivers (M = 2.59, SD = 1.27) and need for control and self-reliance (M = 2.46, SD = 1.30).

Associations Between Psychosocial Factors and Help-Seeking Barriers

The correlation matrix of psychosocial variables with help-seeking barriers is presented in Table 3. Loneliness was positively correlated with total barriers (r = 0.27, p < .001), indicating a weak to moderate relationship, and with all barrier subscales except for the minimizing problems and resignation subscale (r = 0.15, p = .06). There were notable subscale correlations between loneliness and concrete barriers and distrust of caregivers (r = 0.29, p < .001; weak to moderate) and emotional control (r = 0.25, p = .001; weak). Health literacy was negatively correlated with total barriers (r = −0.32, p < .001; moderate) and all subscales, with the strongest correlations observed for concrete barriers and distrust of caregivers (r = −0.33, p < .001; moderate) and privacy (r = −0.29, p < .001; weak to moderate). Health empowerment was also negatively correlated with total barriers (r = −0.23, p = .003; weak), and with all subscales except for minimizing problems and resignation (r = −0.03, p = .712). The strongest correlation was observed for concrete barriers and distrust of caregivers (r = −0.32, p < .001; moderate). Social support was not correlated with total barriers (r = −0.09, p = .27) or any of the subscales.

Among the psychosocial factors, levels of health literacy were negatively correlated with loneliness (r = −0.18, p = .017; weak) and positively correlated with health empowerment (r = 0.22, p = .003; weak) and social support (r = 0.22, p = .004; weak). Levels of loneliness were negatively correlated with health empowerment (r = −0.40, p < .001; moderate) and social support (the r = −0.48, p < .001; moderate to strong). In addition, levels of health empowerment were positively correlated with social support (r = 0.18, p = .015; weak).

Multivariable regression analyses (Table 4) showed that health literacy was negatively associated with total barriers (β = −2.84, p = .002) and several subscales, including minimizing problems and resignation (β = −0.14, p < .001), concrete barriers and distrust of caregivers (β = −0.09, p = .003), privacy concerns (β = −0.11, p = .002), and emotional control (β = −0.10, p = .01). Loneliness was positively associated with total barriers (β = 4.29, p = .01) and specific subscales, such as minimizing problems and resignation (β = 0.19, p = .008), concrete barriers and distrust of caregivers (β = 0.11, p = .048), and emotional control (β = 0.16, p = .036). Health empowerment demonstrated a negative association with concrete barriers and distrust of caregivers (β = −0.05, p = .01) but was not associated with total barriers or other subscales. Social support was not associated with total barriers or any subscales.

Direct and Indirect Associations With Barriers to Help-Seeking

The SEMs show both the direct associations between psychosocial factors and help-seeking barriers, and the indirect associations between health literacy, social

Table 2. Psychosocial Factors and Barriers to Help-Seeking Among Young Men.

Psychosocial factor/barrier	Mean (*SD*)	Range*	Cronbach's α	Missing (*n*, %)
Health Empowerment	27.45 (4.88)	10–40	0.84	5 (2.66)
Health Literacy	13.32 (2.94)	0–16	0.83	12 (6.38)
Loneliness	5.62 (1.89)	3–9	0.81	15 (7.98)
Social Support	5.12 (1.06)	1.67–7	0.92	13 (6.9)
Total barriers	88.27 (33.63)	31–194	0.95	16 (8.51)
Need for Control and Self-Reliance	2.46 (1.30)	1–6.20	0.92	11 (5.85)
Minimizing Problems and Resignation	3.80 (1.39)	1–7	0.87	11 (5.85)
Concrete Barriers and Distrust of Caregivers	2.59 (1.27)	1–6.33	0.81	7 (3.72)
Privacy	2.75 (1.33)	1–6.20	0.79	10 (5.32)
Emotional Control	3.08 (1.52)	1–6.50	0.83	7 (3.72)

Note. *SD* = standard deviation. *Range represents the minimum and maximum scores for each variable. Higher scores indicate higher levels of each variable. Health literacy scores are categorized as inadequate (0–8), problematic (9–12), or sufficient (13–16). Loneliness scores are classified as low (3–5), moderate (6–7), or severe (8–9).

Table 3. Correlation Matrix of Psychosocial Variables and Help-Seeking Barriers.

Variable	1	2	3	4	5	6	7	8	9	10
1. Total barriers	—	0.91**	0.70**	0.78**	0.80**	0.86**	−0.32**	0.27**	−0.23*	−0.09
2. Need for control and self-reliance		—	0.53**	0.64**	0.69**	0.77**	−0.22*	0.20*	−0.16*	−0.09
3. Minimizing problems and resignation			—	0.44**	0.36**	0.56**	−0.26*	0.15	−0.03	0.01
4. Concrete barriers and distrust of caregivers				—	0.63**	0.58**	−0.33**	0.29**	−0.32**	−0.07
5. Privacy					—	0.69**	−0.29**	0.20*	−0.24*	−0.05
6. Emotional control						—	−0.23*	0.25*	−0.15*	−0.17*
7. Health literacy							—	−0.18*	0.22*	0.22*
8. Loneliness								—	−0.40**	−0.48**
9. Health empowerment									—	0.18*
10. Social support										—

Note. Interpretation of correlation size follows Cohen (1988): $r \approx 0.10$ (weak), 0.30 (moderate), 0.50 (strong).
*$p < .05$; **$p < .001$.

Table 4. Adjusted Associations Between Psychosocial Factors and Help-Seeking Barriers.

		Help-seeking barriers subscales				
Psychosocial factor	Total barriers (β)	Need for control & self-reliance (β)	Minimizing problems and resignation (β)	Concrete barriers and distrust of caregivers (β)	Privacy (β)	Emotional control (β)
Health empowerment	−0.67	−0.01	0.01	−0.05*	−0.04	−0.01
Health literacy	−2.84*	−0.06	−0.14**	−0.09*	−0.11*	−0.10*
Loneliness	4.29*	0.12	0.19*	0.11*	0.09	0.16*
Social support	2.53	0.02	0.23	0.18	0.10	−0.13

Note. Analyses adjusted for sociodemographic variables and health status. *$p < .05$; **$p < .001$.

support, and loneliness and help-seeking barriers via health empowerment (see Supplementary File 2 for full results).

Health literacy was negatively associated with total barriers ($\beta = -0.26$, $p = .001$) and most subscales, including concrete barriers and distrust of caregivers ($\beta = -0.23$, $p = .002$), privacy concerns ($\beta = -0.25$, $p = .001$), minimizing problems ($\beta = -0.30$, $p < .001$), and emotional control ($\beta = -0.21$, $p = .007$). These associations are presented in Figure 1. However, an indirect

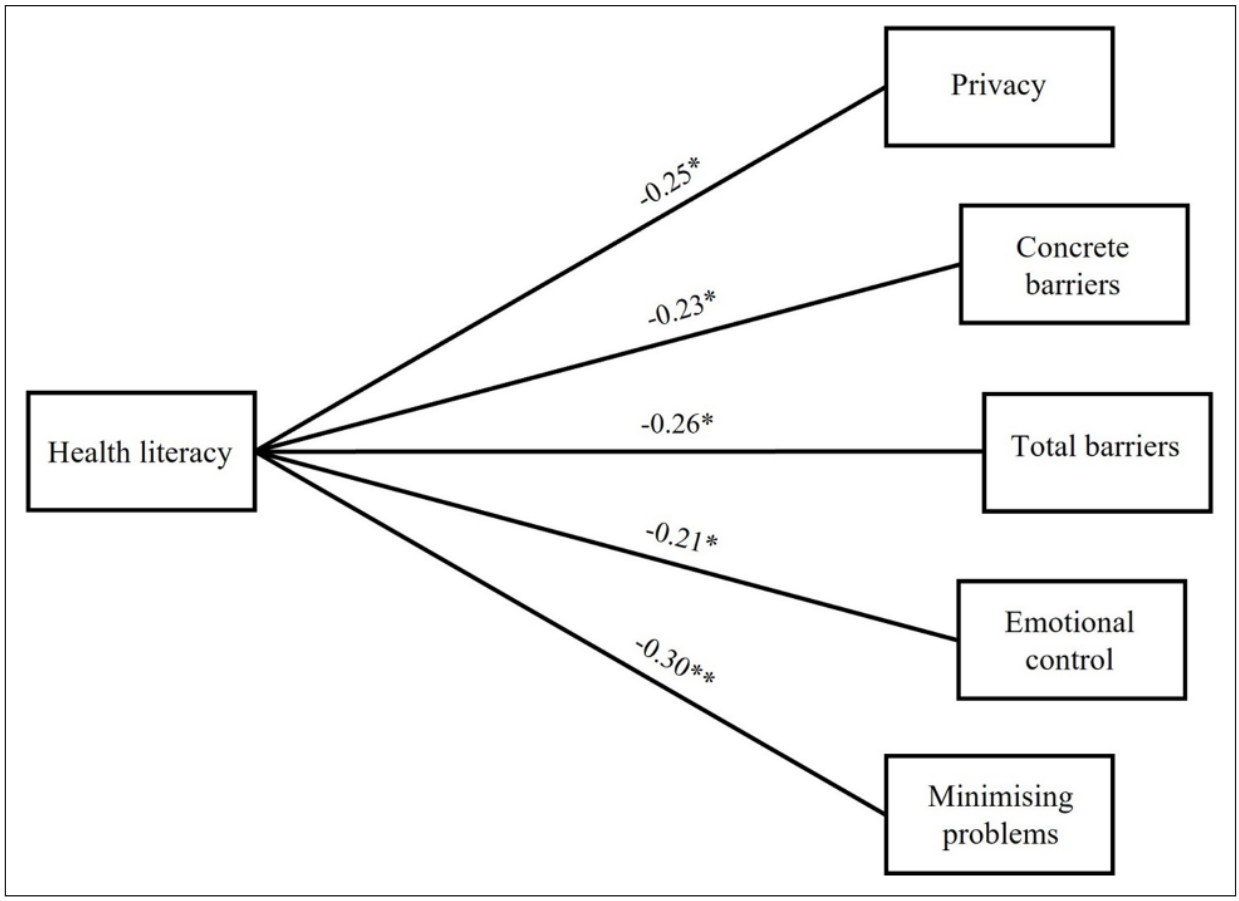

Figure 1. Significant Direct Associations Between Health Literacy, and Help-Seeking Barriers.
Note. Analyses adjusted for sociodemographic variables and health status (n = 188).
*$p < .05$. **$p < .001$.

effect of health literacy through health empowerment was not observed for total barriers or any subscales.

Loneliness demonstrated a positive association with total barriers ($\beta = 0.24$, $p = .007$) and specific subscales, including minimizing problems ($\beta = 0.26$, $p = .005$), concrete barriers and distrust of caregivers ($\beta = 0.17$, $p = .039$), and emotional control ($\beta = 0.20$, $p = .029$). These associations are illustrated in Figure 2. In addition, a small indirect association between loneliness and concrete barriers and distrust of caregivers was observed through health empowerment ($\beta = 0.07$, $p = .024$), indicating that health empowerment may partially mediate this relationship.

A direct association was observed between health empowerment and the concrete barriers and distrust of caregivers subscale ($\beta = -0.20$, $p = .007$), indicating that young men with higher levels of health empowerment reported fewer concrete barriers to seeking help. However, health empowerment was not associated with total barriers or any other subscales.

Social support was not associated with total barriers or any subscales, either directly or indirectly.

Discussion

This study provides insights into the psychosocial determinants of young men's barriers to help-seeking, identifying loneliness and health literacy as important factors, and highlighting health empowerment as having a direct relationship with concrete barriers and distrust of caregivers. These findings extend our understanding of the relative importance of these factors in shaping help-seeking behaviors.

The consistent association between loneliness and help-seeking barriers underscores its relevance to help-seeking. Young men experiencing greater loneliness reported higher total barriers and specific barriers, including minimizing problems and resignation, concrete barriers and distrust of caregivers, and emotional control. These findings suggest that loneliness may amplify practical, emotional, and relational challenges, discouraging help-seeking. This pattern is consistent with theoretical accounts linking loneliness to psychological states that may heighten perceptions of difficulty, danger, or stigma associated with accessing care

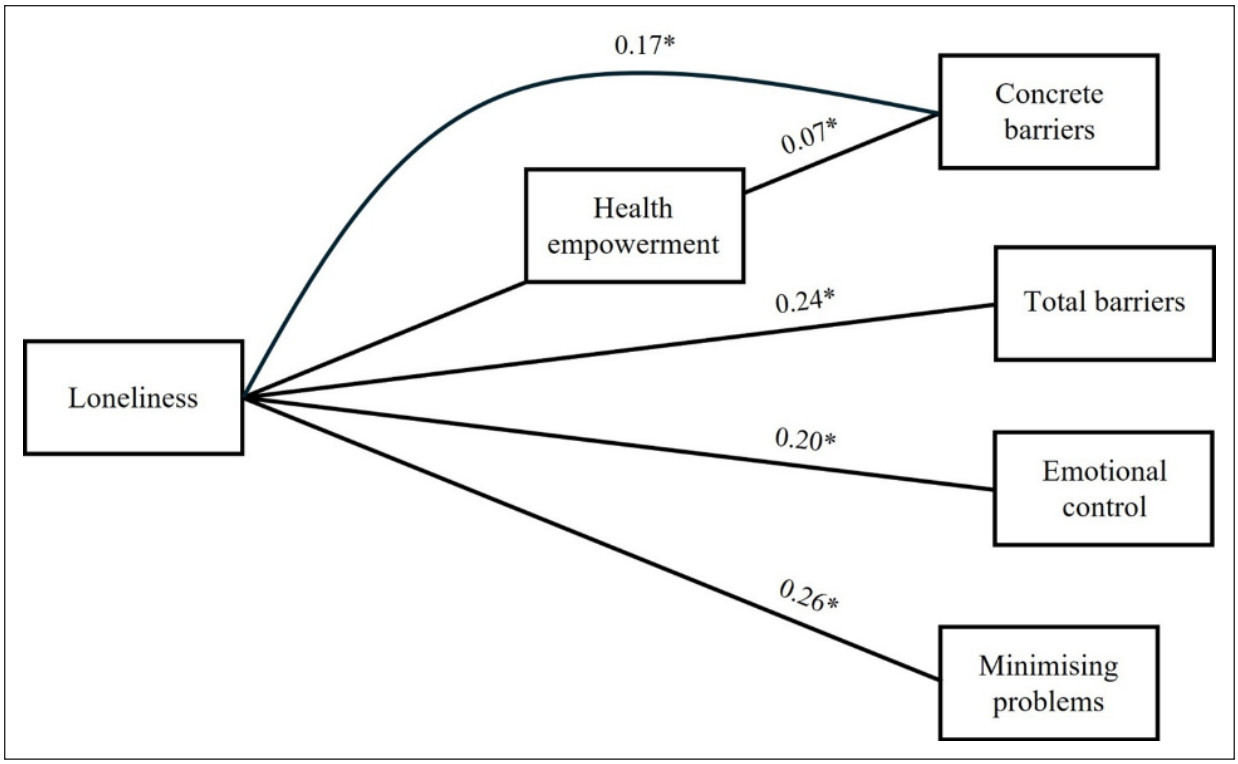

Figure 2. Significant Direct and Indirect Associations Between Loneliness, Health Empowerment, and Help-Seeking Barriers.
Note. Analyses adjusted for sociodemographic variables and health status ($n = 188$).
*$p < .05$. **$p < .001$.

(Cacioppo & Hawkley, 2009; Hawkley & Cacioppo, 2010). It was notable, that loneliness was not associated with control and self-reliance or privacy barriers, suggesting that these specific barriers are less influenced by feelings of relationship dissatisfaction and instead reflect broader personal or cultural attitudes toward autonomy and vulnerability.

The observed association between loneliness and higher help-seeking barriers among young men is consistent with established links between loneliness and poorer health behaviors (Lauder et al., 2006; Stickley et al., 2014) but differs from broader evidence indicating a positive association between loneliness and increased health care use (Christiansen et al., 2023; Sirois & Owens, 2023). Notably, evidence suggests that the health-seeking consequences of loneliness may be moderated by demographic factors, including gender and age: for example, loneliness predicts greater health care use among older women but not older men (Burns et al., 2020), and its association with primary care use is stronger in samples with a higher proportion of women (Sirois & Owens, 2023). The present findings add to existing evidence by showing that, among young men specifically, loneliness is associated with heightened barriers to help-seeking. This pattern highlights the importance of loneliness as a key determinant of health care engagement for young men and underscores the need for further research into the mechanisms through which loneliness shapes help-seeking in this demographic.

The importance of health literacy was affirmed in this study through its consistent negative associations with total barriers to help-seeking and all subscales except for control and self-reliance. These findings reinforce existing evidence that young men with higher health literacy are better able to identify symptoms, navigate health care systems, and access appropriate services (Mursa et al., 2024; Palmer et al., 2024). Lower privacy and emotional control barriers among men with higher health literacy suggest that increased understanding and confidence in health care contexts may reduce the perception that expressing vulnerability during help-seeking is problematic or unacceptable. However, the lack of an association with control and self-reliance suggests that health literacy may not influence masculine norms that emphasize autonomy. This finding contrasts with previous research suggesting that masculine traits such as self-reliance and emotional control may hinder the communicative and interactive aspects of health literacy, thereby discouraging men from openly discussing their health concerns (Milner et al., 2019).

The absence of an association between social support and barriers was unexpected, given its frequent identification in qualitative literature as a critical determinant of help-seeking (Palmer et al., 2024). One possible explanation is that the measure used in this study assessed the perceived availability of others who could provide emotional support and encouragement; the measure did not assess other recognized dimensions of social support such as practical assistance and information (Heaney & Israel, 2008), nor did it examine the normative attitudes within support networks that may have a bearing upon male help-seeking (Zimet et al., 1988). Research suggests that the impact of social support on young men's help-seeking is highly context-dependent (Palmer et al., 2024). Support from individuals with negative perceptions of male help-seeking may act as a barrier, discouraging engagement, whereas support from those with positive attitudes can serve as a facilitator, encouraging help-seeking behavior (Nagai, 2015; Palmer et al., 2024). These nuances could explain the divergence between qualitative and quantitative findings and warrant further investigation.

The finding that higher health empowerment was linked to lower concrete barriers and distrust of caregivers suggests that empowered young men feel more capable of navigating practical and interpersonal challenges involved in seeking help. This builds on prior research identifying a link between general self-efficacy and lower barriers to help-seeking (Boman & Walker, 2010). In addition, a small indirect association between loneliness and concrete barriers and distrust of caregivers was observed through health empowerment, suggesting that health empowerment may buffer the relationship between loneliness and help-seeking. These findings provide support for the theoretically proposed role of empowerment as a mechanism affecting help-seeking and suggest that strategies to promote social connection in young men may have greater impacts on service usage if they incorporate elements that foster empowerment, such as skill development, role modeling and problem solving.

A key strength of this study is its use of probabilistic sampling, enhancing the representativeness of findings for young Australian men. However, several limitations should be acknowledged. The use of cross-sectional data means that directionality of associations cannot be confirmed. The exclusion of non-English speakers, individuals without internet or phone access and low representation of men from rural locations also likely reduced our ability to explore cultural and geographical factors that could influence help-seeking behaviors. In addition, the reliance on self-reported data introduces the potential for social desirability biases (Althubaiti, 2016). However, this risk is reduced by the anonymous data collection process (Larson, 2019).

This study highlights the important roles of loneliness, health literacy and health empowerment in shaping help-seeking among young men. Loneliness and health literacy were identified as consistent predictors of barriers to help-seeking, while the relationship between health empowerment on lower concrete barriers and distrust of caregivers adds an important dimension to the evidence base. The absence of associations with social support suggests that future research must consider the types of support received in relation to male help-seeking barriers and practices. By clarifying the interactions and relative importance of these factors, it provides valuable evidence to inform the development of targeted interventions. Addressing loneliness and enhancing both health literacy and health empowerment should be central to strategies aimed at reducing barriers and improving health care engagement among young men.

Acknowledgments

The authors would like to acknowledge Simon von Saldern, CEO of Healthy Male, and Nicole Halim for their contributions to the survey development. Contributions made by medical, nursing, and allied health advisors of Healthy Male in developing the survey are also gratefully acknowledged.

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Ethical Considerations

Ethics approval for this study was acquired from the Monash University Human Research Ethics Committee (Approval No. 27289) on 05/03/2021. All participants provided written informed consent prior to participation.

Consent to Participate

Participants provided written informed consent to take part in the study.

Consent for Publication

Participants provided written informed consent for the publication of the data presented in this article.

Funding

The authors disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: The authors wish to acknowledge the funding support for the lead author from the Men of Malvern and Healthy Male. Healthy Male, the organization which conducted this national survey, is funded by the Australian Department of Health.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Data Availability Statement

The data underlying the results presented in this study will be made publicly available upon publication of this article in the Monash University Figshare Research Repository at DOI: 10.26180/28449137.

Supplemental Material

Supplemental material for this article is available online.

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Chapter Six: “Does That Make Me Less of a Man?”: Qualitative Insights for Supporting Help-Seeking Among Young Australian Men

6.1 Preface

This chapter addresses Thesis Objective 4: to understand young men’s attitudes and experiences (facilitators and barriers) in relation to help-seeking and accessing healthcare services.

Chapter 1 highlighted the predominance of individual-level determinants within the literature on young men’s help-seeking, alongside limited attention to the broader social and contextual forces shaping engagement with healthcare. Chapter 3 further identified gaps in the existing evidence, noting that much of the research has been conducted within specific mental and sexual health contexts and has frequently focused on specific subgroups such as university students or young men already engaged with services. As a result, there has been limited exploration of help-seeking in physical health contexts, and insufficient attention to how young men, particularly those not embedded within educational or healthcare institutions, understand and negotiate barriers to care in everyday contexts.

Chapters 4 and 5 provided population-level evidence clarifying the distinct help-seeking profile of young men and quantifying the relationships among key psychosocial and practical determinants. However, while these analyses clarify the relative and interacting influence of these factors, they are less able to capture how young men themselves interpret and navigate these influences within their everyday lives.

The present chapter addresses this gap through qualitative inquiry. Using reflexive thematic analysis, it explores young men’s direct accounts of help-seeking across different health contexts, with particular attention to how they describe barriers, facilitators, and decision-making processes. In doing so, it extends the quantitative findings by examining how

previously identified determinants are manifested in everyday situations and how young men describe responding to them.

As outlined in Chapter 2, this qualitative phase serves an explanatory and interpretive function within the sequential mixed-methods design. It adds nuance and contextual depth to the quantitative findings by exploring how perceived barriers and facilitators are understood, negotiated, and experienced in everyday contexts.

This research presented in this chapter is currently under review in *Health & Social Care in the Community.*

Additional materials relevant to this chapter are provided in the Appendix D. The Semi-structured interview guide used for participant data collection is presented in Appendix D.1. The University of Sydney Human Research Ethics Committee Approval Certificate is presented in Appendix D.2. The Completed COREQ checklist is presented in Appendix D.3. Participant demographic characteristics are summarised in Appendix D.4 (Table D.1).

6.2 Manuscript

Abstract

Young men face unique barriers to help-seeking that contribute to disengagement with healthcare and poorer health outcomes across the lifespan. Existing research has focussed on specific populations, overlooking young men not already engaged with healthcare or embedded within school and university communities. The present study used the social ecological model (SEM) to explore the factors influencing mental and physical healthcare engagement among a broader cohort of young Australian men. Purposive sampling was used to ensure diversity in residential location, education and occupation status and recent healthcare engagement. Semi-structured interviews were conducted with 29 English-speaking men aged 19-30 years, residing within Australia, and data were analysed using inductive reflexive thematic analysis. Seven themes were constructed capturing influences on young men's help-seeking across SEM levels: health literacy, strength and vulnerability, social context, service provider characteristics, service accessibility, cultural and environmental influences and the need for compassion. The findings highlight health literacy, service accessibility, social connection, and the need for clear messaging about strength and vulnerability as key areas for intervention. Central to these was the need for compassion, both self-directed and societal, which was critical yet traditionally under recognised as a determinant of young men's help-seeking. Together, the results highlight the need for multi-level strategies that engage young men with compassion across individual, interpersonal, organisational, and societal domains.

Keywords: young men, help-seeking behaviour, social ecological model, barriers and facilitators, compassion

Introduction

Globally, men face higher rates of mortality from preventable diseases and suicide, living on average nearly five fewer healthy years than women.[1-3] Across international contexts, including Australia, the United States, the European Union, the United Kingdom, and nations across Asia and Africa, men consistently demonstrate reduced help-seeking behaviour and lower engagement with healthcare services,[1,4-10] contributing to their poorer health outcomes.[11,12] Compared to older men, younger men encounter more practical and psychosocial barriers and more commonly exhibit attitudes and behaviours that reduce opportunities to engage with health services.[13] Understanding and addressing the factors that affect young men's engagement with health services is essential for improving both their immediate and long-term health outcomes.[14-17]

Most research in this area has focussed on clinical settings, especially sexual and mental health.[18] Help-seeking for physical health, an area where young men are prone to adopt norms and practices that hinder disease prevention and early detection,[15,17] has been largely overlooked.[18] Further, studies have tended to focus on populations already engaged with health services and educational institutions, neglecting young men disengaged with these systems and who may face distinct challenges.[18,19] These gaps in the research are notable because a trend of disengagement from health services for men often begins during adolescence and persists through adulthood.[14,16]

Lower engagement with health information and services among men has been linked to adherence to masculine ideals.[20-22] These traits such as the pursuit of strength, self-reliance and independence are often suggested to be incompatible with the expression of vulnerability required to engage in help-seeking behaviours.[21] However, a broader approach to the research inquiry is required, considering these attitudes and behaviours within the context in which

they occur.[23] Bronfenbrenner's Social Ecological Model (SEM) provides a means of understanding the complex and contextual factors that influence young men's help-seeking behaviours.[24] It allows for a nuanced examination of the dynamic interplay between individuals and their environment and emphasises the multiple levels of influence on health behaviours, including individual, interpersonal, organisational and societal factors.[25]

This study broadens existing research by examining the factors influencing mental and physical health service engagement among young Australian men, including those not currently engaged with healthcare or educational systems. Using SEM, this study explores how individual attitudes influence young men's health behaviours while considering the broader social, cultural, and environmental factors that impact help-seeking behaviours. Accordingly, this study addressed the following research question: how do young men understand and experience the personal, social and contextual barriers and facilitators shaping their help-seeking and access to healthcare services?

Methods

Study design

We conducted a qualitative study using semi-structured interviews to explore young men's attitudes, beliefs and experiences related to help-seeking. This approach provided flexibility to explore participants perspectives and capture the nuanced and complex factors influencing health service engagement. The analysis was informed by an understanding that participants accounts reflect their lived experiences and are also shaped by social and contextual factors. We engaged in ongoing reflexive practice throughout the study. Reflexivity is understood here as the continuous, multifaceted practice that researchers use to evaluate how their subjectivity and context shape the research process.[26]

Participants and recruitment

Purposive sampling was used to ensure diversity across key characteristics including residential location, education and occupation status and recent health-care engagement. Eligible participants were English-speaking males aged 18-30 years and residing in Australia during the study period. We excluded individuals who were currently institutionalised or with psychosocial needs that prevent them from seeking or accessing health care. We engaged with a national market research group to recruit study participants from a large population-based panel used extensively in health research in Australia.[27] Recruitment continued until the dataset held sufficient information power for the study aims.[28] Of the participants who consented to take part, two did not attend their scheduled interviews and could not be re-contacted.

Procedure

Ethical approval was granted by The University of Sydney Human Research Ethics Committee (Project: 2024/HE001014). Interested individuals were directed to a Qualtrics page to review study information, provide informed, written consent and contact details and complete a short demographic form (age, location, education/employment, recent health-care engagement).

Following a focused review of literature on young men's help-seeking, two vignette-based interview guides (physical health; mental health) were developed by the authors. The interview guides were piloted by R.P in two mock interviews with young men. The pilot data were excluded from the analysis and informed refinements before data collection began. Participants were alternately assigned to either the physical-health or mental-health interview guide in the order consent was received. Guides were identical in structure and prompts, only the vignette content and health domain framing differed (see Supplementary File 1).

All interviews were conducted by R.P via Zoom between June and August 2025. Each interview began with R.P introducing himself, his role and the study purpose. Interviews lasted approximately 60 minutes and only R.P and the participant were present during each interview. Participants were only interviewed once, and they received a $50 gift card on completion. R.P had no prior relationship with participants.

Researcher characteristics and reflexivity

R.P is a male PhD candidate and registered psychologist. He has training in sensitive interviewing and maintained a reflexive journal across design, data collection and analysis to document observations and analytic decisions. B.S is a male professor of public health with extensive experience in applied health promotion research examining the social and environmental factors influencing health behaviours. J.K is a public health researcher, with expertise in health communication and digital health and experience with qualitative research, especially thematic analysis. He is a middle-aged man of privileged background. P.P has expertise in behavioural science research and extensive experience conducting health promotion research through socio-ecological lens, examining the intersection between behaviour and context. P.P is a female migrant with a refugee background, having spent some of her adult years working in low-resource settings and conducting research on adolescent health.

These reflexive accounts were discussed within the research team to enhance coherence and explore how disciplinary background, experience, and personal beliefs may have shaped our interpretations.

Data analysis

Interview video and audio was recorded and transcribed verbatim using Zoom's transcription tool. Transcripts were checked against recordings for accuracy. They were then de-identified and imported into NVivo (version 15)[29] for data management.

We undertook an inductive reflexive thematic analysis attending to both semantic and latent meanings and following.[30] The process was iterative involving: (1) immersion in the dataset through repeated reading and re-listening; (2) generating initial codes across the dataset; (3) constructing candidate themes and subthemes by collating patterned meanings; (4) developing and reviewing themes against coded data and the full dataset; (5) refining, defining and naming themes and (6) selecting compelling extracts and developing an analytic narrative addressing the research question. Coding and theme development was led by R.P and refined through team discussion to support reflexive dialogue.

To strengthen the interpretive process, J.K independently coded a subset of four transcripts. This combined with subsequent discussions with the research team allowed for richer insights into the data and helped inform theme refinement. Reporting was guided by the COREQ checklist (Supplementary File 2).

Results

Description of Participants

The final sample consisted of 29 young men aged between 19 and 30 years (M = 25.88, SD = 3.18). Participants represented a diverse sample of educational backgrounds, occupational status and residential locations across Australia (Table 6.1 and Supplementary File 3). The majority lived in urban areas (79.3%) and just over half had completed university study (55.2%). Occupations were varied, with 37.9% holding professional/managerial roles. In the

12 months prior to interview, 58.6% had attended a healthcare provider for physical health, 17.2% for mental health, and 34.5% reported no healthcare contact.

Table 6.1. Participant Demographic Information (*n* = 29)

Characteristic	*n* (%)
Residential location	
Urban	23 (79.3)
Rural	6 (20.6)
Education	
University	16 (55.2)
Vocational	6 (20.6)
High school	7 (24.1)
Occupation	
Manager/professional	11 (37.9)
Trades/manual	5 (17.2)
Sales/service	6 (20.6)
Student	1 (3.4)
Unemployed	6 (20.6)
Recent healthcare contact*	
Physical health	17 (58.6)
Mental health	5 (17.2)
None	10 (34.5)

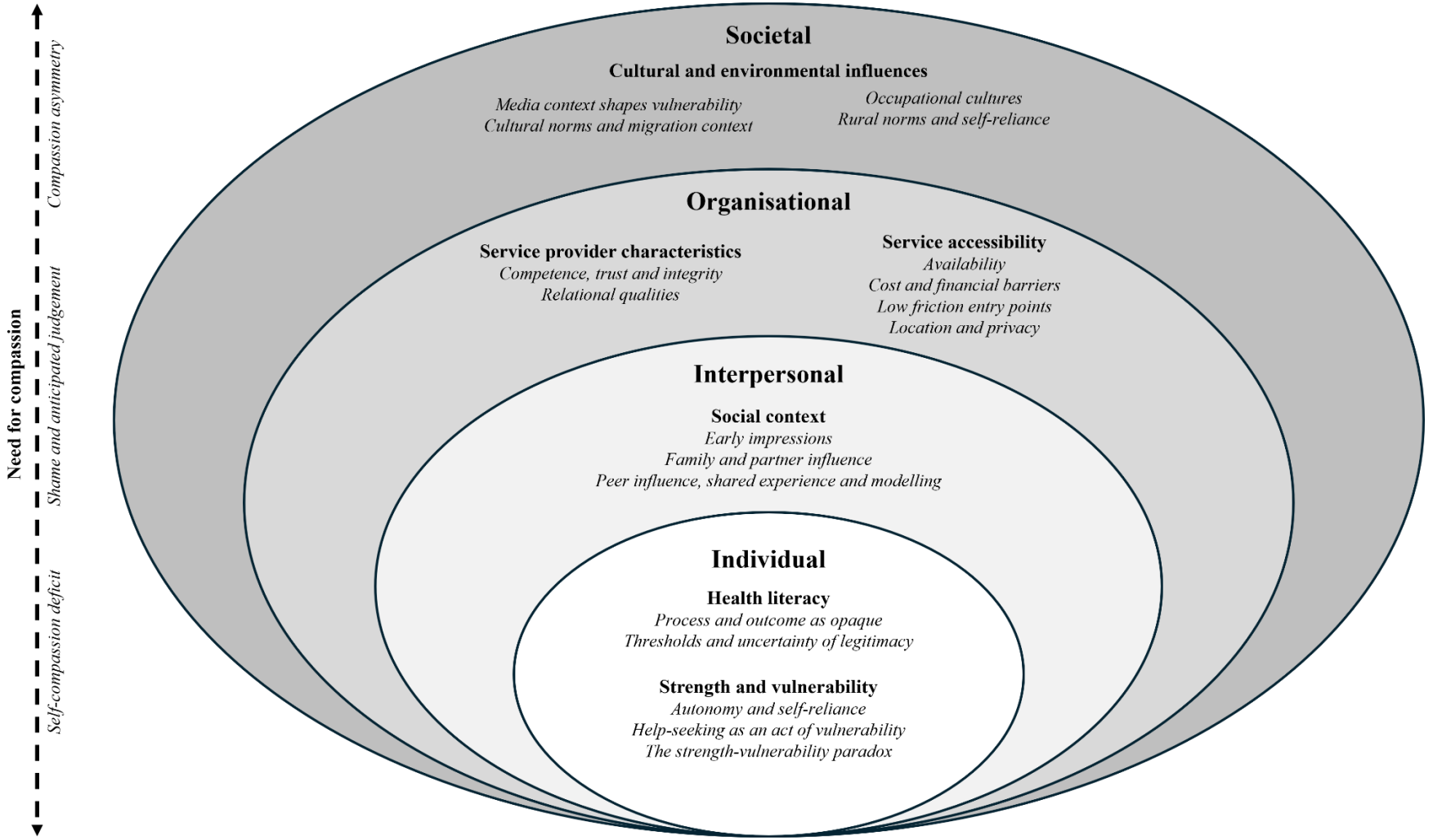
Note. * Participants were asked whether they had attended a healthcare provider in the past 12 months. Totals exceed 29 because some reported contact for both physical and mental health.

Thematic Analysis

Seven themes were constructed through the thematic analysis. To conceptualise how these themes interacted across multiple layers of influence, the SEM was used as an organising framework (Figure 6.1). Themes were situated within the individual, interpersonal, organisational, and societal levels of the SEM. One theme, *need for compassion*, was not

contained within a single level but instead permeated all domains, highlighting its cross-cutting significance in shaping young men's help-seeking experiences.

Figure 6.1. Themes organised within a socioecological model. The need for compassion is shown as a permeating theme across all levels



Individual Domain

Health Literacy

All participants emphasised that taking care of their health was important to them. However, they consistently expressed confusion about when, why, where, and how to seek help. For most, severe pain, significant functional impairment, or other explicit and observable symptoms were required before help-seeking was considered legitimate. This threshold meant that opportunities for preventive intervention were reduced, and for mental health the threshold was considered unclear and high. This contributed to an insidious situation in which young men may delay help-seeking until their mental health deteriorates to a point that they no longer have the insight or capacity needed to seek help.

> *I think I just left it too late… by the time I realised how bad I was I couldn't be bothered to get help because maybe I didn't feel like I was worth it*. (Participant 28, 25 years old)

Participants described uncertainty about how and where to seek help, what the process would involve and why help-seeking is beneficial, especially for mental health. There were also doubts about whether the financial and time costs of seeking mental health support would justify the benefits.

> *Where can I seek help? How much would it cost? Would it be effective? And will I be judged like, are they gonna, like, look down on me?* (Participant 9, 30 years old)

Strength and Vulnerability

Across the interviews, it was clear that the ideas young men held about strength and vulnerability shaped how and when they sought help. For most, the act of seeking help

required considerable vulnerability, with mental health disclosures requiring greater expressions of vulnerability than physical health concerns.

> *When men reach out for help, they're being very vulnerable.* (Participant 9, 30 years old)

It was recognised that vulnerability was often perceived to be antithetical to strength, particularly among participants who came from cultural or familial backgrounds where help-seeking was discouraged.

> *There's that toxic masculinity out there that you know, men have got to be strong. Men have got to be you know x, y and z. Men are not allowed to feel vulnerable.* (Participant 22, 29 years old)

Participants tended to either express a view that help-seeking was a sign of weakness, or that help-seeking was necessary in response to any distress. The first position appeared to reflect a preference to suppress or deny emotional and physical pain, while the latter conveyed a belief that any discomfort is always pathological and requires professional intervention. Despite appearing contradictory, both positions represent the same underlying belief that vulnerability is problematic and needs to be avoided or controlled rather than embraced as an essential part of human experience. Consequently, to demonstrate their 'strength', many participants emphasised the importance of autonomy and self-reliance in managing their health. This often manifested in a preference for self-management, symptom monitoring, and delaying help-seeking until problems became unmanageable.

> *You know am I weak? If I go and seek help does that make [me] less of a man? You know, if I don't just keep it to myself and try and deal with it myself."* (Participant 6, 25 years old)

Interpersonal Domain

Social Context

The social context of family, work, friendships and romantic relationships was influential in shaping young men's willingness to seek help. Some participants spoke of the encouragement and validation from trusted or influential people in their lives and how that acted as a catalyst for seeking help. Others, however, highlighted how experiences or expectations of judgement would curtail their desire to seek help. For instance, parents fostered openness to seeking support by normalising help-seeking in childhood, whereas dismissive or judgmental attitudes reinforced reluctance.

> *I judge myself for seeking the service because I know it's something my parents would judge me about.* (Participant 9, 30 years old)

Similarly, early interactions with services and informal sources of support also shaped expectations, with positive experiences encouraging future help-seeking and negative ones creating a learned expectation of dismissal.

> *I basically had no permanent family from when I was born until I was 15. I was in and out of many different homes [with] foster parents. Each male I came across, it was a judgmental thing, so whether it was me having issues at school [or] with my mental health, it was basically just they wouldn't care. And now to this day, I have that fear of going out and if I need to like seek help.* (Participant 19, 25 years old)

Shared experiences were powerful: hearing that others faced similar struggles dissolved shame and reassured young men that they were not alone or "broken." When help-seeking was modelled by a genuine, respected, and relatable peer, it was proof that help-seeking could lead to positive outcomes, while endorsement from senior or respected men carried additional weight.

If they can seek help, then I can seek help too. (Participant 12, 19 years old)

Open dialogue among friends normalised conversations about health, and many described informal help-seeking with peers as an important first step, particularly for mental health concerns. Mutual disclosure fostered trust and safety, and targeted messaging that named common male struggles, was seen as a useful way to encourage openness. At the same time, the social context could also act as a barrier. Social isolation and loneliness reduced opportunities for support, while judgemental peer cultures reinforced stigma. In some cases, reliance on informal peer support became limiting, delaying access to professional help when it was needed.

Organisational Domain

Service Accessibility

Service accessibility was a key concern across participants. This included the direct cost of the service and the lost income from taking time off from work. Services that weren't covered by public insurance were seen as unaffordable, especially for mental health services. Cost was more salient for younger men with lower incomes or those who were migrants and did not have access to public insurance.

> *When I was 25, I was similar to Sam [the vignette character] I thought about suicide a couple of times and I still didn't seek for mental health because of the cost.*
> (Participant 9, 30 years old)

Young men stressed the need for timely, flexible services and a preference for short wait times. Limited time and other priorities made seeking help challenging.

> *Having a busy life with two kids, it's fun to juggle. At the end of the day, I really just gotta… push through it whether that's physically or mentally.* (Participant 19, 25 years old)

Service hours often clashed with work or study, forcing young men to choose between health and other commitments. Further, participants, particularly those from rural areas, noted that mental health services were more scarce and therefore harder to access.

Making initial contact with a service was described as a point of significant resistance for young men. Many expressed that if this first step was easy, they were far more likely to engage.

> *I feel like as a man, the hardest thing is even going to a place like that [healthcare clinic].* (Participant 28, 25 years old)

Young men preferred easy, low-friction entry points to healthcare, valuing digital pathways for direct care, information, and reduced anxiety before meeting professionals. Familiar settings, like community or sporting venues, and drop-in services without appointments lowered barriers. Some favoured male-focused or male-only services for comfort and accessibility.

They expressed a desire for services that were convenient, discreet, and nearby, but emphasised the need for privacy and confidentiality. Anonymous options and telehealth were appreciated for balancing convenience with privacy concerns.

> *I just remember [the psychology clinic] being a 15-minute drive from my house, really peaceful surroundings. No traffic, it just made it so much easier to just focus on the psychologist and really describing what my issues were at the time.* (Participant 13, 29 years)

Service Provider Characteristics

Young men's willingness to seek help depended on multiple aspects of healthcare providers' characteristics and delivery models. They favoured informal, relaxed interactions with competent, pragmatic providers who built rapport and were perceived to prioritise client interests over financial gain or external obligations. Trust increased when providers acted with integrity and treated clients equally, regardless of background:

> *[Good service providers] don't marginalize you… they just treat you like another human being… The ones that go to the hospital, they want to know that they will be treated equally.* (Participant 14, 27 years old)

Authenticity, attentiveness, and compassion were highly valued. Young men wanted to feel listened to and supported without judgement, even for 'small' issues. Such care encouraged more open disclosures. While some preferred demographic similarity with providers, others did not consider it important.

> *[Service providers] were very friendly. They were very supportive and weren't very judgmental or pushy… like they let me speak about what I like when I felt comfortable with it.* (Participant 24, 22 years old)

Societal Domain

Cultural and Environmental Influences

Cultural and environmental influences strongly shaped young men's help-seeking attitudes. Recent migrants and children of migrants consistently reported having high levels of stigma toward male help-seeking, stating that they struggled with these expectations personally, even while recognising more progressive views in Australia. Many noted that while younger generations are less stigmatised, they felt some stigma remained.

> *[In Kenya] a man is seen as strong and head of the family, so when they see a man in the community constantly sick, they're like, 'this guy is not fit enough to handle manly activities'... But once I came here [Australia]… they're like 'oh this [male help-seeking] is normal.'* (Participant 14, 27 years old)

Young men living in rural areas and those in trades and manual labour jobs also reported normative barriers to help-seeking. Within these contexts, independence and self-reliance were prioritised, and seeking help was often difficult to justify.

> *He's your typical country guy... unless he's dying, he will not go to a hospital… he'll just bravado it until he drops dead pretty much.* (Participant 20, 23 years old)

This cultural emphasis made it harder for young men to acknowledge vulnerability or legitimise the need for professional support.

> *I came into the workplace thinking it was fine to go seek help. But then you hear the thoughts of these blokes and you realise, okay, so you don't agree with me going to seek help… And then you start thinking am I wrong and second guessing yourself.* (Participant 23, 26 years old)

In contrast, workplaces and study environments that actively promoted well-being, facilitated young men to feel that seeking help was legitimate and encouraged.

Media contexts also influenced perceptions, with social media being the most salient environment. For some, these platforms provided helpful health information, validation, or role models that normalised seeking help. For others, they reinforced stigma or confusion about help-seeking and how it relates to concepts of strength, weakness and vulnerability.

> *I feel like I've even seen stuff on social media where it's talking about, you know, it's weak to do that sort of stuff.* (Participant 28, 25 years old)

Need for Compassion

Compassion, or its absence, functioned as a thread running through all themes (Figure 6.1). At the individual level, self-compassion shaped how men judged their own legitimacy to seek care, while interpersonal relationships were critical to overcoming shame. Compassionate organisations, providers and systems were seen as essential to building trust and enabling vulnerability, and broader societal narratives about masculinity, stigma, and legitimacy influenced how male vulnerability was received.

Shame and fear of judgment were among the most frequently expressed barriers. Most participants were concerned that help-seeking would make them appear weak, exposing them to criticism from peers, family, romantic partners and even health professionals. They feared others finding out about their help-seeking could lead to rejection or abandonment, diminish their attractiveness as romantic partners, or undermine their credibility at work.

> *There's a sense of insecurity, you know, the people you know, may leave you or may not want anything to do with you.* (Participant 7, 28 years old)

There was also acknowledgement that shame and judgement give this issue an insidious and hidden quality: many young men are likely suffering in silence, afraid of the judgement they might face if they disclosed their experiences, making its true scale difficult to gauge.

Participants expressed a perception that society is more accepting of women's vulnerability than men's. For some, this led to coding and expressing feelings that signalled vulnerability as anger, which they perceived as the most socially permissible emotional expression for men. Many young men felt their suffering was taken less seriously and that masculinity was frequently portrayed negatively. They also reported perceiving that men's issues were typically acknowledged only in relation to women's wellbeing, rather than as important on their own.

> *The kind of messaging that those ads give is that either men do not require any kind of help, or men are the problem to begin with… quit with the idea that men are either not vulnerable at all, or that they are actually putting everybody else at risk at all times.* (Participant 5, 30 years old)

There was also an asymmetry in self-compassion and the compassion the participants afforded others. Almost universally, study participants explicitly disavowed the stigma around male help-seeking but did not apply this standard to themselves. This discrepancy points to a lack of self-compassion: young men struggled to extend to themselves the understanding and acceptance they readily offered to peers. For some, though, this appeared to be a culturally desirable script masking their true beliefs about male help-seeking.

> *If someone came to me and they were talking about how they're not doing well, I'd be like, 'That's fine I'm not going to judge you.' But I wouldn't expect that of myself. I put myself to a different standard than I do other people… I'd be harsher on myself than I would someone else.* (Participant 28, 25 years)

Discussion

This study provides important insights into the complex and interrelated factors that influence young men's help-seeking. The findings extend current understandings of established determinants of young men's help-seeking by clarifying how known barriers operate and identifying tangible directions for targeted intervention across individual, interpersonal, organisational, and societal levels.

Health literacy was a critical determinant, consistent with previous research.[18] While much of the existing literature has focused on men's medical knowledge of specific diseases,[31] our findings highlight a fundamental confusion around the when, why, where, and how of seeking help that underpins everyday decision-making. As such, there is a clear opportunity,

particularly in the domain of mental health, for health promotion campaigns to clarify help-seeking thresholds and provide young men with simple, actionable frameworks that explain when to reach out and what they can expect from the process.

Social context was also highly influential, aligning with the existing body of research demonstrating that social influence can act as either a barrier or facilitator depending on the attitudes held by those around young men.[18] Our findings add nuance by highlighting the profound and enduring influence of early parental attitudes and identifying shared experience as a powerful antidote to shame and social isolation. Health promotion efforts should amplify relatable and authentic stories from men who have faced challenges and successfully sought help. This has the potential to normalise vulnerability, reframe help-seeking as an act of courage and growth and foster greater openness among young men to seek support when it is needed.

Congruent with existing research, practical and organisational barriers were significant impediments to help-seeking for young men.[18,13] Cost was a primary concern, encompassing the direct price of services, lost income from time off work, and doubts about whether the benefits of care justified the expense. Ensuring that essential services are affordable and where possible subsidised by public insurance, represents an important step in improving accessibility for young men. Notably, the findings highlight that initial contact with healthcare services can be a point of considerable resistance for young men. Making this first contact as low-friction as possible is an important step in facilitating appropriate engagement. Strategies such as offering after-hours appointments, digital entry points and services embedded in familiar community and sporting environments may be particularly effective.[18] Once young men do engage with services, the relational qualities of the provider are critical. Consistent with recent frameworks for gender responsive care,[32] participants expressed a

clear preference for service providers that were informal and relaxed in their approach but also competent, attentive and compassionate.

Cultural contexts further shaped how young men perceived help-seeking. Young men in rural settings faced higher levels of stigma, reflecting well described cultural expectations of self-reliance and productivity that make help-seeking hard to justify.[19] Public health messaging that frames appropriate help-seeking as compatible with, and even beneficial to productivity, may help reduce resistance in these contexts, alongside efforts to expand low-friction access points in rural communities. Participants from recent immigrant backgrounds also described high levels of stigma toward male help-seeking, underscoring the salience of cultural background as an important consideration in designing health promotion efforts. Although some research has noted that men from non-English speaking backgrounds may have unique help-seeking considerations,[13] further work is needed to identify how best to support them.

Environmental influences such as workplace and media messaging were also notable. The workplace was a key context, shaping young men's attitudes toward help-seeking reinforcing existing research showing that workplace culture is an important factor for men's wellbeing and openness to seek help.[33,34] Fostering cultures that prioritise wellbeing and actively support male employees to access help when needed therefore represents a notable opportunity to promote men's health at scale. Our findings also highlighted the significant impact that social media has on young men. This is consistent with recent research showing that young men are highly engaged with and influenced by social media contexts.[35] The impact of these platforms on perceptions of help-seeking cannot be ignored. It is vital that health promotion efforts embrace and harness the power of social media to deliver clear, relatable, and constructive messaging that models positive expressions of strength and vulnerability and encourages young men to engage in appropriate help-seeking.

Beyond clarifying established determinants, this study makes a distinctive contribution by revealing the central role of compassion as a critical and cross-cutting factor influencing young men's engagement with help-seeking. One of the most consistent findings, both in this study and the broader literature, is that young men are afraid to express the vulnerability required to seek help. Researchers have typically interpreted this as evidence that masculine values, particularly the pursuit of strength, are inherently problematic within the context of help-seeking, positioning them as primary barriers to men's engagement with care.[18] However, our findings introduce an important nuance showing that this fear has both internal and external dimensions which warrant consideration.

The internal dimension reflects an inward discomfort and scepticism toward vulnerability. This was seen in how participants commonly viewed strength and vulnerability as opposing constructs, seeing vulnerability as problematic and something that needs to be avoided or controlled, rather than embraced as part of human experience. This perception was a major barrier to appropriate seeking help. Importantly, this finding suggests that it is not the pursuit of strength itself that necessarily prevents help-seeking, but the incomplete way strength is understood in relation to vulnerability within the context of help-seeking. Self-compassion legitimises vulnerability as a necessary part of resilience and may therefore be an effective practice for achieving a more flexible and complete understanding of strength.[36] Emerging research supports this direction, showing that higher self-compassion is associated with lower self-stigma, which in turn is related to more positive attitudes and stronger intentions to seek help among young men.[37] Health promotion efforts that facilitate self-compassion and clarify that genuine strength involves openness to support allow help-seeking to be understood as an act of courage rather than weakness.

The external dimension of this fear relates to concerns about how expressions of vulnerability may be received by others. Participants described a pervasive anticipation of judgement and

rejection, fearing that their disclosures would not be met with understanding or acceptance. Addressing this external fear requires compassion beyond the individual level. However, aside from the emerging literature on self-compassion,[37] the need to extend compassion toward young men has been largely absent from help-seeking research.

Adopting compassion as a guiding framework across interpersonal, organisational, and societal levels offers a more strength-based and pragmatic path forward. It shifts the focus from deficit-based approaches toward creating environments that meet male vulnerability with understanding, acceptance and opportunities for growth. Doing so requires designing services and communicating with and about young men in ways that allow them to acknowledge and express vulnerability and fallibility without fear of being shamed, thereby laying the foundation for broader and systemic efforts to promote engagement and wellbeing.

A key strength of this research is the inclusion of young men not currently employed or engaged in health care or educational contexts, as these are voices that have been largely left out of the research to date. Another strength was the consideration of both mental and physical health, providing a more comprehensive picture of young men's help-seeking across domains. Limitations of the study include the use of Zoom to conduct the interviews remotely, which limited the interviewer's ability to attend to nonverbal cues such as body language and eye contact. In addition, the recruitment strategy introduces the possibility of self-selection bias, as young men who agreed to participate may differ from those less inclined to engage in research or discuss help-seeking, potentially attracting individuals with greater motivation or capacity to reflect on their experiences.

Conclusion

Overall, this study makes a significant contribution to the literature by applying a socioecological lens to further illuminate the complex determinants of help-seeking and identifying practical pathways for intervention. The findings highlight health literacy, service accessibility, social connection, and the need for clear messaging about strength and vulnerability as key areas for intervention. Together, they point to the need for multi-level approaches that engage young men with compassion across individual, interpersonal, organisational, and societal domains. Future research should build on these insights to design and test interventions that translate these principles into practice.

Data Availability Statement

The data underlying this article cannot be shared publicly due to privacy and ethical considerations related to the sensitive nature of the study. Data may be made available upon reasonable request to the corresponding author, in accordance with applicable ethical and privacy guidelines.

Conflicts of Interests

There are no conflicts of interest to report in relation to this manuscript.

Funding Statement

The authors wish to acknowledge the funding support for the lead author from the Men of Malvern and Healthy Male. Healthy Male is funded by the Australian Department of Health.

Acknowledgements

During the preparation of this work the lead author occasionally used ChatGPT (OpenAI) to improve grammar and clarity. After using this tool, the lead author reviewed and revised the content as needed and takes full responsibility for the content of the published article.

Supplementary Material

Supplementary File 1: Semi-structured interview guide used for participant data collection

Supplementary File 2: Completed COREQ checklist

Supplementary File 3: Table detailing participant demographic information

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Chapter Seven: Discussion and Conclusions

7.1 Chapter Overview

This thesis used a sequential, multi-phase, mixed-methods approach to examine the determinants of young men's help-seeking behaviours and to identify strategies that can support improved engagement with healthcare services, congruent with the goals of the National Men's Health Strategy (NMHS) 2020-2030. Four interrelated studies were conducted to address the research questions outlined in Chapter 1.

This chapter provides an integrated synthesis of the main findings from the four studies presented in Chapters 3-6 and discusses their significance using the social ecological model (SEM) as an interpretive framework. It examines how determinants across individual, interpersonal, organisational, and societal levels interact to shape young men's help-seeking and identifies implications for health practice and policy.

This chapter also considers the strengths and limitations of the methods used within the studies and reflects on how this influences interpretation of the findings. It concludes with recommendations for future research.

To support this overview, Table 1 summarises the main findings across the four studies presented in this thesis.

Table 7.1. Summary of main findings from studies presented in this thesis

Thesis Chapter	Study description	Main findings
Three	Systematic review synthesising qualitative and quantitative evidence on barriers and facilitators to help-seeking practices and healthcare access among young men (12-24 years), guided by the socio-ecological model.	Seven overarching themes were identified across SEM levels including: masculine attitudes, health literacy, social pressure, service accessibility, economic factors, service characteristics and cultural attitudes. The review highlighted the complex and multi-level nature of determinants shaping young men's help-seeking, while also revealing a limited focus within the existing literature on particular health contexts and populations.
Four	Cross-sectional analysis of nationally representative survey data (*n* =1282) examining age-related differences in men's help-seeking preferences and barriers to healthcare.	Age is a significant factor differentiating men's health help-seeking. Young men were less likely to choose professional sources of help for both physical and mental health and reported a higher burden of practical barriers to healthcare access. Younger age was also associated with higher psychosocial barriers to help-seeking.
Five	Cross-sectional analysis of nationally representative survey data (*n* =188) examining direct and indirect associations between psychosocial factors and perceived barriers to healthcare among men aged 18-34 years of age.	Loneliness and health literacy were found to be consistently associated with perceived barriers to help-seeking, with higher loneliness associated with greater barriers and higher health literacy associated with fewer barriers. Higher health empowerment was associated with lower concrete barriers and distrust of caregivers and loneliness was found to indirectly influence concrete barriers and distrust of caregivers through health empowerment. Social support was not associated with barriers to help-seeking.
Six	Qualitative study using semi-structured interviews to examine the socio-ecological factors influencing help-seeking behaviours among a diverse cohort of young men residing within Australia (*n* =29). Data were analysed using inductive reflexive thematic analysis.	The findings highlight health literacy, service accessibility, social connection, and the need for clear messaging about strength and vulnerability as key areas for intervention across SEM levels. The need for compassion, both self-directed and societal, was identified as a critical yet traditionally under recognised influence upon young men's help-seeking.

7.2 Significance and Implications of Findings

Drawing on population-level quantitative data and in-depth qualitative accounts from diverse samples, this research presents a more holistic consideration of the determinants shaping young men's engagement with healthcare, moving beyond single-level explanations of help-seeking. Application of the SEM facilitates exploration of the complex and interacting determinants influencing young men's help seeking across of individual, interpersonal, organisational and societal domains (1). The following sections discuss the significance of the findings within each level of the SEM framework.

7.2.1 Individual Domain

Masculine Attitudes

As outlined in the systematic review presented in Chapter 3, existing research has placed substantial emphasis on masculine attitudes as a key determinant of young men's help-seeking, often positioning traits such as stoicism, self-reliance, and the pursuit of strength as inherent barriers to accessing care (2, 3). Within this literature, including healthy and positive masculinities scholarship, endorsement of and conformity to these ideals are typically interpreted as discouraging help-seeking by stifling young men's willingness to express the vulnerability required to acknowledge need (3-6).

Quantitative research has consistently reported a negative association between adherence to masculine norms and help-seeking behaviours, attitudes and intentions among young men, although this body of work remains relatively limited in scope (7-10). When interpreting these findings, however, it is important to consider how masculine attitudes have been operationalised within this literature. Most studies rely on the Conformity to Masculine Norms Inventory (CMNI) and its abbreviated versions (11-13), which draw on hegemonic conceptions of masculinity (14) and primarily conceptualise masculinity through

endorsement of a set of socially problematic or risk-oriented behaviours, including violence, power over women, and disdain for homosexuality.

Notably, the CMNI also includes items that directly reflect help-seeking avoidance within its self-reliance subscale, such that higher endorsement of items such as “I hate asking for help” is treated as indicative of greater conformity to masculine norms. This complicates causal interpretation and suggests that observed associations between masculine norms and help-seeking may, at least in part, reflect how masculinity has been defined and measured, rather than the mechanisms through which masculine attitudes influence help-seeking behaviour.

Assumptions that masculine attitudes are inherently problematic within the domain of help-seeking are also prominent in the qualitative literature. This interpretive framing is illustrated in a highly cited study by Lynch, Long and Moorhead (15), who explored perceived barriers and facilitators to professional help-seeking for mental health concerns through focus groups and interviews with 17 young men recruited from a youth service in County Donegal, Ireland. Their analysis found that many participants held ideals of self-reliance and strength that were “in opposition to the expression of emotions and help-seeking” (15). Based on this finding, the authors interpreted traditional masculine ideals as acting as significant barriers to professional help-seeking among young men.

Findings from the quantitative analysis presented in Chapter 4, showing that younger men reported higher endorsement of psychosocial barriers linked to self-reliance, emotional control, and privacy, suggest that these attitudes remain salient during early adulthood and may contribute to reduced engagement with professional sources of support. By providing population-level evidence, these findings build on prior cross-sectional research, which has drawn on non-representative samples and has shown that endorsement of masculine attitudes among Australian men is strongest in young men and likely reduces with age (16). However,

while these quantitative findings establish the prominence of masculine attitudes at the population level, they provide limited insight into how such attitudes operate in practice or why they function as barriers for some young men but not others.

The qualitative findings presented in Chapter 6 extend and refine these understandings by providing a more nuanced consideration of the mechanisms underlying the influence of masculine attitudes. Participants described a belief system in which strength and vulnerability were frequently positioned as opposing constructs, with vulnerability perceived as problematic and needing to be avoided or tightly controlled. Importantly, these findings suggest that it is not the pursuit of strength itself that necessarily inhibits help-seeking, but the narrow and incomplete way in which strength is conceptualised in relation to vulnerability. When vulnerability is understood as an inevitable and even necessary component of the human experience, the act of seeking support can be reframed as consistent with, rather than contrary to masculine values such as strength. While prior research has long theorised that masculine attitudes related to strength and self-reliance discourage help-seeking by curtailing men's willingness to express vulnerability (2, 3, 15, 17), the present findings extend this literature by identifying the understandings and beliefs that underly this relationship. This not only deepens insights about the observed association between masculine attitudes and help-seeking but also offers a pathway to strength-based approaches without requiring the revolution of masculinity itself.

This contribution has important implications for interventions. Approaches that position masculine attitudes as inherently problematic risk adopting a deficits-based lens that may alienate young men (3). In contrast, strategies that explicitly clarify the relationship between strength and vulnerability, emphasising that genuine strength includes the capacity to recognise limits, acknowledge vulnerability, and seek support when needed, offer a more compelling and strength-based pathway to engagement.

Health Literacy

Health literacy has been frequently identified as a critical determinant in the broader help-seeking literature (18). However, this body of research remains limited in scope given its focus on mental and sexual health contexts or on medical knowledge related to specific conditions, and frequent reliance on student or otherwise non-generalisable samples (19, 20). As a result, less is known about the impact of health literacy on the everyday decision-making process informing young men's help-seeking across general mental and physical health contexts.

Additionally, our systematic review (Chapter 3) identified only one quantitative study that directly examined this relationship. That study, reported a weak positive association between mental health literacy and intentions to seek help in a sample of 1,242 male students at a single university in the United States (21). While these findings provide early support for the relationship between health literacy and help-seeking in young men, they are limited in generalisability. In contrast, our findings presented in Chapter 5, demonstrate a consistent and meaningful association between health literacy and help-seeking barriers in young men using population-level data and a general health measure (HLS-EU-Q16) designed to capture the factors informing every day decision making across mental and physical health contexts (22).

Beyond establishing this, the findings clarify how limited health literacy constrains help-seeking in practice. At the population level, lower health literacy was associated with higher concrete barriers and distrust of caregivers, indicating increased difficulty in identifying and accessing available supports (Chapter 5). Qualitative findings reinforced this result, with participants reporting experiences of confusion and discouragement when attempting to navigating healthcare systems, particularly in relation to mental health services (Chapter 6).

Young men were also uncertain about why help-seeking is important (Chapter 4), building on recent research suggesting that younger men face distinct health literacy related challenges when navigating healthcare systems (23). Our qualitative data revealed pervasive scepticism about the benefits of seeking help relative to the perceived financial, time, and emotional costs, which contributed to reluctance to engage in help-seeking (Chapter 6). In contrast, higher health literacy was associated with lower privacy and emotional control barriers (Chapter 5). This suggests that greater understanding of healthcare processes and the benefits of seeking help may reduce concerns that help-seeking necessarily causes a loss of self-respect and may make the expression of vulnerability required to seek help more acceptable.

Uncertainty about when help-seeking was warranted, further contributed to delay and avoidance of health-care engagement. Lower health literacy was associated with greater minimisation of problems and resignation, reflecting difficulty establishing thresholds for when a problem is serious enough to justify help-seeking (Chapter 5). This finding aligns with existing qualitative research highlighting that young men have difficulty identifying symptoms and often lack awareness of the need for treatment (4). Our own qualitative findings extend this literature by demonstrating how this uncertainty operates in practice. Many young men described holding high thresholds for seeking help, only considering accessing care as acceptable when experiencing considerable pain or significant functional impairments (Chapter 6). This was especially pronounced in mental health contexts, where thresholds were described as unclear and high, reducing opportunities for early intervention and likely contributing to a tendency among young men to only present in times of crises (24).

Brought together, these findings show a pervasive difficulty among young men in navigating the *when*, *why*, *where*, and *how* of seeking help that shapes everyday health-related decision-making. This thesis therefore extends existing health literacy research by moving beyond a

narrow focus on symptom recognition or disease-specific knowledge to identify the broader decision-making challenges that underpin help-seeking by young men across health contexts. Health promotion strategies that provide young men with clear, actionable guidance about when to seek help, what services are available, how they can be accessed, and why help-seeking is important may therefore support earlier and more effective engagement with care. Such interventions may take the form of targeted health literacy workshops and digital programs which have shown promise (20, 25) and warrant further development and evaluation.

7.2.2 Interpersonal Domain

Social Context

The population-level analyses reported in this thesis revealed a reluctance among young men for seeking professional help and a preference for seeking help from informal sources including friends and family, particularly for mental health concerns (Chapter 4). These findings position social networks as a primary entry point into the help-seeking process for young men, aligning with other qualitative accounts (4, 24).

Beyond help-seeking preferences, the analyses revealed that higher levels of loneliness were associated with greater overall barriers to help-seeking, including minimising problems and resignation, concrete barriers and distrust of caregivers, and emotional control (Chapter 5). These findings suggest that loneliness may amplify practical, emotional, and relational challenges, making the help-seeking process substantially more difficult. Notably, an indirect association between loneliness and concrete barriers and distrust of caregivers was observed through health empowerment, suggesting that reduced health empowerment may partially explain the negative impact of loneliness on help-seeking. This pattern aligns with theoretical accounts linking loneliness to heightened threat sensitivity and negative appraisals of social

interaction (26, 27) but contrasts with the broader body of research showing that loneliness is associated with increased healthcare utilisation among other demographic groups (28, 29). These findings build on recent work showing that loneliness in men is associated with less favourable attitudes toward preventative health practices (30) and represent, to the authors' knowledge, the first population-level evidence demonstrating a significant association between loneliness and help-seeking barriers among young men.

Surprisingly, no significant association was found between social support and help-seeking barriers at the population level (Chapter 5), despite being frequently identified as a critical determinant of help-seeking in the qualitative literature (4). This null finding highlights the complex and context-dependent nature of social support's influence on young men's help-seeking.

In-light of this, qualitative findings (Chapter 6) provided important insight into how social contexts shape help-seeking in practice. Consistent with broader men's health research (18, 31), participants described how encouragement and validation from trusted individuals could act as a catalyst for seeking help, while anticipated judgement or dismissive responses fostered reluctance and disengagement. Early familial attitudes toward male help-seeking were especially influential, shaping expectations that extended into adulthood. This finding builds on research showing that communicating about health with parents is associated with a higher likelihood of recent physical examinations (32). Shared experiences, in particular hearing of others who had successfully engaged in the help-seeking process, was a powerful facilitator and antidote to shame and stigma. This aligns with findings from the broader men's health literature, much of which has focused on male students and shows that peer testimonials and first-person narratives can normalise distress and reduce stigma, thereby increasing intentions to seek help (18, 33, 34). Consistent with the quantitative findings (Chapter 4) and prior qualitative research (24), informal peer support often functioned as a

first step in the help-seeking process, particularly for mental health concerns. However, reliance on informal support could also become limiting when it delayed accessing necessary professional care.

Overall, these findings highlight the complex role of social context as both a potential facilitator and barrier for young men's help-seeking. In particular, the results underscore the imperative of addressing loneliness, while also cautioning that initiatives aimed at fostering social support must attend to its nuanced and context-specific influence. Health promotion efforts that amplify relatable peer narratives, foster open dialogue, and create opportunities for shared experience can help reduce stigma and loneliness, while encouraging timely engagement with care. While such interventions have shown promise in workplace (e.g., construction and mining) and community (e.g., Men's Sheds and sporting clubs) settings among adult men (18, 35, 36), the present findings highlight the need for careful adaptation to young men's specific social contexts.

7.2.3 Organisational Domain

Service Accessibility

Building on the established qualitative literature identifying service accessibility as a concern for young men (4, 18), our population-level findings show that work commitments, cost and competing personal or family responsibilities were reported considerably more frequently by young and middle-aged men than by older men (Chapter 4). These findings indicate that younger men's lower engagement with healthcare is not entirely attitudinal but also reflects structural misalignment between health services and the realities of young adulthood and working-age life. Further insight was provided though our modelling of the determinants of help-seeking, which showed that higher health empowerment was linked to lower concrete barriers and distrust of caregivers (Chapter 5). This novel finding suggests that empowered

young men may feel more capable of navigating the practical and interpersonal challenges involved in accessing care, consistent with previous research linking self-efficacy to reduced help-seeking barriers (37). While health empowerment cannot compensate entirely for structural barriers, these results indicate that interventions facilitating the development of confidence, healthcare-specific problem-solving, and related skills may increase young men's capacity to navigate and be resilient to these barriers.

Qualitative findings deepened these insights by illuminating how service design shapes young men's willingness and ability to engage (Chapter 6). Consistent with previous qualitative studies (4, 18), participants emphasised the importance of timely and flexible services, short wait times, and opening hours that did not conflict with work or study. Notably, many described the initial point of contact with healthcare services as source of significant resistance, reporting that they would be far more likely to engage if this first step were easier. Within the context of this, young men described a clear preference for low-friction entry points to care, including digital options for information and appointments in the first instance. This finding aligns with our qualitative results showing a preference for online sources of support (Chapter 4) and builds on existing research showing that young men value the convenience and accessibility enabled by digital resources as an initial pathway into care (38, 39).

Services embedded in familiar community or sporting settings, drop-in models, and male-focused or male-only services were also perceived as more accessible. Across these preferences, young men consistently valued services in convenient but discreet locations that where nearby to them and easy to access, while still ensuring privacy and confidentiality. Taken together, these findings highlight that making the point of initial contact as low-friction as possible is a critical factor for improving engagement, with strategies such as after-hours

appointments, digital entry points, and community-embedded services likely to be especially effective for supporting young men (4, 18).

Qualitative accounts also identified cost as a major barrier to service accessibility (Chapter 6). Young men consistently expressed concern not just about the direct financial cost of services, but also the lost income from time off work, and uncertainty about whether the benefits of care justified the expense. Cost was especially salient for younger men with lower incomes and for services with limited Medicare coverage or rebates, particularly in mental health contexts.

Despite featuring as a prominent barrier in qualitative and quantitative findings of this thesis, our systematic review identified cost as a barrier primarily in United States contexts, likely reflecting the absence of universal healthcare (4, 40), with only one qualitative study reporting cost as a barrier in an Australian setting (Chapter 3). That 2014 study (41), conducted among male University of Melbourne students found that when considering accessing sexual health services, cost was reported as a barrier by international students but not by Australian students. While our findings similarly indicate that young men residing in Australia on temporary visas are particularly affected by cost barriers, they also demonstrate that cost represents a broader and more pervasive barrier across the population of young men. As such, these findings extend the existing literature by demonstrating that cost constitutes a meaningful barrier to healthcare access for young men in Australia across both physical and mental health contexts. Although comparisons with earlier studies should be interpreted cautiously given differences in study design and population focus, this discrepancy may, at least in part, reflect changing economic conditions and increasing financial pressure faced by young men in Australia.

Together, these findings reinforce that young men's reduced help-seeking cannot be understood as purely attitudinal or the result of health literacy deficits. Meaningful improvements in help-seeking will require coordinated efforts to reduce organisational and economic barriers alongside initiatives that support young men to navigate healthcare systems more effectively.

Service Provider Characteristics

Beyond service accessibility, the characteristics of the service providers themselves played an important role in young men's willingness to seek-help and engage. Our systematic review identified a lack of personal connection with clinicians as a commonly reported barrier to help-seeking, while providers perceived as respectful, male-friendly, and capable of building meaningful rapport were described as important facilitators of engagement (Chapter 2). These issues were especially salient in mental and sexual health contexts, where sensitivities about being judged negatively and feelings of vulnerability were heightened.

Population-level findings from the present thesis build on this, showing that younger men reported higher levels of concrete barriers and distrust of caregivers (Chapter 4). The latter suggests a baseline of scepticism toward healthcare providers among younger men, which helps contextualise why the quality of the relational connection may be particularly salient for engagement within this group. Consistent with this, existing research shows that even when young men do access mental health services, they are prone to prematurely disengage when they perceive a lack of connection with their therapist (42-44). The present thesis extends this work by demonstrating that these relational dynamics are not confined to mental health contexts but are also relevant to help-seeking for physical health concerns.

Qualitative findings provided greater depth of insight into how young men evaluated service provider characteristics (Chapter 6). Participants consistently expressed a preference for

informal, relaxed interactions with providers who were competent and pragmatic. Providers perceived as authentic, compassionate, and genuinely invested in their client's wellbeing fostered trust and encouraged more open disclosure. Importantly, young men valued feeling listened to and taken seriously, even when presenting with concerns they themselves described as "small". Such responsiveness reduced fears of being dismissed or judged and provided opportunities for further sharing of important personal and sensitive concerns. Trust was strengthened when providers were perceived to act with integrity, prioritising client interests over financial gain or external obligations. These findings are consistent with recent research on gender-responsive care for men (45, 46) and extend this work by demonstrating the relevance of these principles for younger men.

While some participants expressed a preference for demographic similarity with providers, this was not universal and relational qualities such as attentiveness, compassion, and competence were consistently seen as more important than shared identity. This pattern is consistent with existing research showing that although concerns about provider demographics may be present for some young men, particularly where there are fears of being misunderstood or experiencing discrimination, such concerns are typically secondary to a desire for relational and skills-based characteristics, including trust, rapport, and clinical competence (15, 47-50).

When considered together, these findings reinforce evidence from the broader literature (3, 4, 18) and show that the quality of the clinical relationship is highly influential for young men, functioning not only as a facilitator of ongoing engagement but, in some cases, as a corrective mechanism to prior negative help-seeking experiences. Even brief or seemingly routine interactions can leave a lasting impression, shaping expectations about whether healthcare settings are safe, respectful, and worth returning to. These findings highlight the opportunity and responsibility for service providers to implement the recommendations of recent

guidelines on gender-responsive care (45, 46), by adopting a deliberate relational stance that is welcoming, compassionate and clinically competent.

7.2.4 Societal Domain

Cultural and Environmental Influences

Findings from this thesis show the significance of cultural and environmental influences at the societal level in shaping men's help-seeking attitudes, preferences, and opportunities for engagement with healthcare. Population-level quantitative findings for adult men broadly (Chapter 4) revealed differences in help-seeking behaviours and barriers across occupational, educational, geographic, and cultural groups. While this points to the relevance of cultural and environmental factors, they do not in themselves establish how these influences operate specifically among young men. The qualitative findings (Chapter 6) address this gap, revealing that while participants perceived a trend toward more openness and reduced stigma around men's help-seeking, many of the challenges identified in the population-level data were replicated in the accounts of young men.

Young men living in rural settings described strong cultural expectations of self-reliance, productivity, and endurance which made help-seeking difficult to justify. These accounts align with well-documented rural norms (51-54) and may explain the help-seeking profile observed in population-level analyses. As such, public health messaging that frames help-seeking as compatible with, and even supportive of, productivity and functioning may be particularly important in these contexts, alongside efforts to expand low-friction and locally accessible services.

Workplace environments were identified as key settings shaping young men's perceptions of whether help-seeking was legitimate or risky. Workplaces that actively supported and normalised help-seeking reduced perceived barriers, whereas cultures that were dismissive

and critical reinforced reluctance and avoidance. These findings align with existing research showing the important role of workplace culture on men's wellbeing and openness to help-seeking (35, 55-57) and highlight workplaces as a critical and scalable setting for fostering supportive environments that can meaningfully improve men's health.

Media environments, particularly social media, also played a prominent role. For some young men, social media provided access to information, validation, and relatable narratives that normalised help-seeking. For others, it contributed to confusion or reinforced stigma by circulating narrow or contradictory messages about masculinity and help-seeking. Given the ubiquity of social media in young men's lives (3, 58), these findings underscore the necessity of engaging with these platforms to deliver clear, credible, and constructive health messaging.

Notably, young men from recent immigrant backgrounds described particularly high levels of stigma toward male help-seeking within their cultural communities. Many reported struggling to reconcile these expectations personally, even while recognising more accepting and progressive attitudes toward help-seeking within the broader Australian context. These findings build on those in the quantitative research by demonstrating that cultural background is a salient determinant of help-seeking among young men, and that stigma may be especially pronounced for those from immigrant communities. This aligns with the broader qualitative literature showing that men from immigrant backgrounds may face significant barriers to professional help-seeking due to strong stigma surrounding male vulnerability (59-61). Despite this, the help-seeking experiences and needs of young men from immigrant backgrounds remain comparatively underexamined and further research is warranted to better understand factors influencing help-seeking and health-care engagement in this demographic group.

7.2.5 Need for Compassion

Building on this synthesis of the study findings, this thesis proposes that compassion is a cross-cutting influence shaping young men's help-seeking. At the individual level, self-compassion influenced how men appraised their own legitimacy to seek care, while at the interpersonal, organisational and societal levels, compassionate responses from others were critical in allowing men to overcome shame and fear of judgement.

Consistent with the broader literature (4, 18), findings from this thesis show that fear is a central and pervasive barrier to young men's help-seeking. Population-level analyses demonstrated that young men struggle with psychosocial barriers reflecting concerns that seeking help may damage their self-perception or cause them to be judged negatively by others (Chapters 4 and 5). Qualitative accounts reiterated these findings, with young men frequently describing shame, embarrassment, and fear of negative evaluation as key reasons for delaying or avoiding care (Chapter 6). Existing research has typically interpreted this well-documented fear as evidence of an incompatibility between masculine norms and the expression of vulnerability required when seeking help (4, 18, 62). The present qualitative findings show that this fear operates across both internal and external dimensions. Internally, young men described harsh self-judgement, scepticism toward vulnerability, and difficulty extending compassion toward themselves. Externally, they expressed concerns about how expressions of vulnerability may be received by others and reported expectations of judgement, dismissal, or rejection. This distinction has implications for how young men's help-seeking is understood and addressed, as it suggests that reducing these pervasive, fear-based barriers requires not only changes in men's internal attitudes but also changes in the social and institutional environments in which help-seeking occurs.

At the individual level, self-compassion has consistently been associated with lower self-stigma, reduced perceived disclosure risk, and more favourable help-seeking attitudes, and has been shown across studies to both mediate and moderate the relationship between masculine norm adherence and help-seeking barriers in young men (7-10, 63, 64). Research also suggest that self-compassion and masculine attitudes are not necessarily mutually exclusive (7, 64, 65). Rather self-compassion may offer a framework through which those who hold masculine attitudes can integrate understandings of strength and vulnerability, enabling engagement in help-seeking without self-condemnation (64, 66). These findings align with those of the present thesis while warranting careful interpretation given their frequent reliance on measures of masculine norm adherence (e.g., the CMNI and its abbreviated forms (11-13)) that adopt a deficit-oriented framing and embed help-seeking avoidance within their operationalisation, as discussed above in *Masculine Attitudes*.

Beyond this recognition at the individual level, the need to extend compassion toward young men has received comparatively little attention in the broader help-seeking literature (4, 18). Large-scale reviews of men's health literature have repeatedly documented men's reluctance to disclose distress due to perceived stigma, anticipated negative social evaluation, and fear of judgement (18, 62). Yet, despite acknowledging the intensity of men's fear and the serious consequences of delayed help-seeking, and the ubiquity of calls for men to change harmful norms or attitudes, there has been remarkably little emphasis on the reciprocal responsibility of services, institutions, and societies to respond with compassion.

Framing help-seeking challenges through the lens of compassion therefore represents a foundational shift in how barriers to young men's engagement with care are understood and addressed. This approach is congruent with prominent perspectives in global health that acknowledge compassion as a foundational driver of quality care within primary health care (67). Compassion offers a strength-based, relational pathway that acknowledges fear as a

rational response to social conditions, rather than solely as evidence of individual failure. It also provides a unifying principle through which interventions across individual, interpersonal, organisational, and societal levels can be aligned. Embedding compassion within health communication, service design, professional practice, and public discourse may therefore represent a critical avenue for supporting young men to engage with care in a timely and meaningful way.

7.3 Strengths and Limitations

The specific strengths and limitations of each individual study are addressed in detail within their respective chapters. The overarching strengths and limitations of the body of work constituting this thesis are discussed in this chapter.

7.3.1 Strengths

A key strength of this thesis is its multi-phase sequential mixed-methods design, which enabled a comprehensive and nuanced examination of young men's help-seeking across multiple levels of influence. Population-level quantitative analyses were used to identify age-related differences in men's help-seeking preferences and attitudes (Chapter 4), and to examine key psychosocial determinants of help-seeking barriers among young men (Chapter 5). These population-level findings were then extended through qualitative research (Chapter 6) which provided nuanced consideration of the influences effecting young men help-seeking, identifying novel insights.

The use of methodological and data triangulation strengthened the robustness and credibility of findings by enabling areas of convergence, divergence, and complementarity to be identified and critically examined. Importantly, this integrative design enhanced the ecological validity and translational relevance of the thesis, supporting the development of multi-level, pragmatic directions for intervention and policy.

A further strength lies in the use of population-level and diverse samples in Chapters 4 and 5, which improved generalisability across age groups and sociodemographic contexts. Further, the qualitative study (Chapter 6) deliberately recruited a diverse sample of young men with variation in education, occupation, cultural background, and prior engagement with healthcare services, addressing a gap in the previous research. Importantly, this thesis examined help-seeking in relation to both mental and physical health concerns, in contrast to much of the existing literature which has focused on sexual and mental health contexts (4).

The use of a socio-ecological framework represents an additional strength. The SEM provided a coherent structure for integrating findings across studies and supported the identification of intervention opportunities operating at multiple levels of the health system and broader social context.

7.3.2 Limitations

Several limitations should be kept in perspective when considering the findings of this thesis. First, the studies included varying age ranges of young men. The systematic review focused on adolescents and young adults aged 12-24 years (Chapter 3), the age-related differences analysis included men aged 18-29 years (Chapter 4), the determinants study examined men aged 18-34 years (Chapter 5), and the qualitative study included participants aged 19-30 years (Chapter 6). These differences were the consequence of methodological and practical constraints, including how age was coded in the datasets used for secondary analysis. While this variability may limit precise age-specific comparisons, particularly given that men in their late 20s and early 30s likely having different life circumstances to those aged 25 and under, the results presented in Chapter 4 showed broadly similar help-seeking profiles for men aged 18-29 and 30-39 years, suggesting a degree of consistency across these age groups.

Second, the studies presented in Chapters 4 and 5 used data which was collected in March 2021. The COVID-19 pandemic was ongoing during this time period, and findings should therefore be interpreted considering this context. It is possible that some patterns of help-seeking, perceived barriers, loneliness, social support, and healthcare engagement may have been influenced by pandemic-related conditions and may not be entirely reflective of young men's experiences outside this period.

Third, all quantitative data used in this thesis were cross-sectional and self-reported. As a result, directionality of associations reported in these studies cannot be confirmed. Self-report data is also inherently vulnerable to recall bias or social desirability effects (68). However, because the data process was anonymous, this risk is reduced (69). Further, most constructs were assessed using established and validated measures, strengthening the reliability and construct validity of the findings. In addition, self-report methods were appropriate and necessary given the focus of this thesis on subjective experiences, perceptions, and attitudes toward help-seeking, which cannot be readily captured through objective measures alone.

Fourth, some measures used in the quantitative studies were developed or validated primarily in US or European contexts. Although these measures were selected because they are widely used, psychometrically established, and relevant to the constructs examined in this thesis, their use in an Australian sample should be interpreted with some caution.

Fifth, although this thesis focused on young men in Australia, it did not provide a detailed or specific examination of the needs and experiences of young Aboriginal and Torres Strait Islander men. This is an important limitation given the distinct considerations that shape health and healthcare access for Aboriginal and Torres Strait Islander people. The findings of this thesis should therefore not be assumed to fully represent the experiences, priorities, or help-seeking contexts of young Aboriginal and Torres Strait Islander males.

Finally, the thesis focused on young men's perspectives and did not include data from other relevant stakeholders such as family members, partners, or healthcare providers. While this focus was intentional and aligned with the aims of prioritising young men's lived experiences, future research would benefit from incorporating multiple perspectives to further understand how help-seeking is shaped within broader relational and service contexts.

7.4 Directions for Future Research and Policy Implications

While this thesis identified compassion as a critical and cross-cutting influence, empirical work is now needed to more clearly operationalise and test the impact of self-compassion and compassion from others on help-seeking attitudes, intentions, and behaviour. In particular, intervention studies examining whether compassion-based approaches can reduce self-stigma, fear of judgement, and perceived social risk represent an important next step. Research that evaluates compassion-informed messaging, service models, or training for providers would further clarify how compassion can be embedded at interpersonal, organisational, and societal levels.

Beyond compassion, future research should prioritise intervention-focused studies targeting determinants consistently identified in this thesis. Interventions aimed at reducing loneliness among young men, increasing the availability and accessibility of health services, and reducing practical barriers to care warrant particular attention. Digital interventions and workplace-based initiatives were identified as especially promising avenues for scalable impact, given their reach and alignment with young men's daily environments. Improving health literacy should also be considered a priority. Although health literacy was primarily considered at the individual level in this thesis, future research may benefit from examining health literacy across socio-ecological levels, including the role of interpersonal support, service communication, health system navigation, and broader health literacy environments

in shaping young men's capacity to access, understand, appraise, and use health information and services (23).

The profound, yet highly context-dependant, influence of social connection on young men's help-seeking identified throughout this thesis highlights social context as an important domain for further investigation. In particular, there is a need to clarify the conditions under which social connection facilitates help-seeking for young men, including how support relationships can be cultivated in practical ways and how young men perceive, value, and engage with social support.

Further, future research should continue to examine the role of cultural and environmental influences on young men's help-seeking. Findings from this thesis consistently highlighted the salience of cultural background, particularly among young men from non-English speaking backgrounds, as well as contextual factors such as rurality and occupational culture. These groups remain underrepresented in help-seeking research, and further work is needed to better understand how these cultural and environmental norms and contexts inform help-seeking. Future research should also look to elaborate on the influence of relevant demographic characteristics that were not investigated in detail in this thesis, including sexual orientation, relationship status and parental status.

Finally, longitudinal and multi-informant research designs would strengthen future work in this field. Longitudinal studies could clarify the causality between determinants and help-seeking behaviour, while incorporating perspectives from families, partners, employers, and healthcare providers may offer a more comprehensive understanding of the relational and systemic contexts in which young men seek help.

The findings also have implications for the implementation and future development of men's health policy, including the NMHS. In particular, the thesis supports policy approaches that

move beyond solely individualised explanations of young men's disengagement and instead address help-seeking across socio-ecological levels. First, health promotion and service design should avoid framing masculine attitudes as inherently problematic. Instead, policy and program responses may be more effective when they clarify understandings of strength and vulnerability, demonstrating that acknowledging vulnerability and seeking timely help can be consistent with strength. Second, the findings suggest that improving young men's health literacy, reducing loneliness, strengthening appropriate social support, and improving the accessibility and affordability of services should be central priorities. Finally, the cross-cutting role of compassion suggests that policy responses should focus on communicating with and about young men in ways that reduce shame, fear of judgement, and perceived social risk.

7.5 Conclusion

This thesis advances understanding of young men's help-seeking and contributes to the goals of the NMHS by clarifying how established determinants operate across socio-ecological levels and by identifying concrete, actionable targets for intervention. Through the integration of population-level quantitative analyses and in-depth qualitative insights, the findings demonstrate that young men's lower engagement with healthcare is shaped not by a lack of concern for health, but by a complex interplay of psychosocial, relational, organisational, and cultural influences. Beyond consolidating and extending existing knowledge, this thesis makes a distinctive contribution by identifying compassion as a critical and cross-cutting influence shaping how fear, shame, and vulnerability are negotiated throughout the help-seeking process. By reframing help-seeking through a compassion-informed lens, this work offers a strength-based and pragmatic pathway forward, one that moves beyond deficit-based interpretations and toward more empowering, effective, and scalable approaches to supporting young men's health and wellbeing.

7.6 References

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Appendix A: Supplementary Material to Chapter 3

The materials included in this appendix were previously published as online supplementary material accompanying the published manuscript presented in Chapter 3(1). The content has not been altered; however, minor formatting adjustments have been made to ensure consistency with the thesis document. The materials include:

- Appendix A.1 – Qualitative study characteristics (Table A.1; referred to as Supplementary Table S1 in the published manuscript)

Reference

1. Palmer R, Smith BJ, Kite J, Phongsavan P. The socio-ecological determinants of help-seeking practices and healthcare access among young men: a systematic review. *Health Promot Int*. 2024;39(2).

Appendix A.1

Table A.1 Qualitative study characteristics

Author/country	Aim(s)	Participants	Health service setting	Data collection and analysis	Quality rating	Summary of findings
Buzi and Smith (2014) United States	To identify the health needs of young men and the barriers they face in accessing care and to obtain input on strategies to attract young men to sexual and reproductive health services.	48 men aged 18-27 years of African American (77%) and Hispanic ethnicity (23%)	Low-cost family planning and reproductive health services	Thematic analysis of focus group data	6 moderate	Feeling pressure to be strong, denial about need to seek help, concern about confidentiality, and having limited opening hours were identified as barriers to accessing care.
Clark, Hudson, Dunstan, and Clark (2018) Australia	Investigate the barriers and facilitating factors to help-seeking behaviour for clinical anxiety in Australian	Purposive sample of 29 men (12 - 18 years) across New South Wales	Mental health services for clinical anxiety	Grounded theory analysis of data collected in focus groups and interviews	7 high	Key barriers to seeking help included stigma (mainly related to masculinity norms), effort, inadequate awareness/knowledge of anxiety symptoms, and discomfort in confronting private

Author/country	Aim(s)	Participants	Health service setting	Data collection and analysis	Quality rating	Summary of findings
	adolescent men.					emotions. Facilitating factors involved enhancing accessibility of school-based mental health literacy programs and offering a diverse array of help-seeking choices, both formal and informal.
Ewert, Collyer, and Temple-Smith (2016) Australia	Examine factors that inhibit young men from using GP services for sexual health needs, and to identify strategies to promote sexual health to young men.	28 men (18-25 years) who are University of Melbourne students	General practitioners for sexual health care	Thematic analysis of data collected during semi-structured interviews	7 high	Masculinity, privacy, low health literacy and embarrassment were identified as barriers to accessing general practitioners for sexual health care. Improved sexual health education at university was identified as a potential facilitator.
Ferrari et al. (2018) Canada	Explore how gender influences the pathways	13 men (mean age of 26 years) of African (n=3),	Early intervention services	Thematic analysis of data collected during	3 low	Fear of looking weak or vulnerable was found to be a barrier to men disclosing

Author/country	Aim(s)	Participants	Health service setting	Data collection and analysis	Quality rating	Summary of findings
	to care for early psychosis.	Caribbean (n=3) and European (n=7) origin	for psychosis	focus groups and in-depth interviews		psychotic symptoms and engaging in help-seeking. Physicality of men was felt to influence the response they received when seeking help, with police being called to restrain them during psychotic episodes.
Garcia, Ptak, Stelzer, Harwood, and Brady (2014) United States	Gather insights from professionals on enhancing the effectiveness of a sexual health clinic in reaching out to, involving, and catering to adolescent men.	9 professionals in adolescent health	Community sexual health clinic	Thematic analysis of semi-structured interviews	7 high	Identified barriers included stigma, embarrassment, and the absence of established societal expectations related to men undergoing sexually transmitted infection testing. Facilitators included crisis situations and the encouragement of partners.
Griffin, Krause, Kapadia, and Halkitis (2018)	To explore young adult gay men's experienc	40 young adult gay men (22-25 years)	'Usual source of care', emergency room, dental	Framework analysis of semi-structured	8 high	Identified barriers included lack of insurance and the high cost of healthcare, lack

Author/country	Aim(s)	Participants	Health service setting	Data collection and analysis	Quality rating	Summary of findings
United States	e and engagement with the healthcare system.		and mental healthcare services	interview		of motivation to seek medical attention, the fear of provider judgment based on homophobic attitudes, and the presence of stigma surrounding seeking care. Potential facilitators included health providers who possess knowledge about the unique healthcare needs of young adult gay men, exhibit open-mindedness without being judgmental, and have personal experience with marginalized identities.
Hutchinson and Winsome (2012) Australia	Explore the processes and strategies used to promote boys' access to and engagement with	10 school-based youth nurses	School-based health services	Grounded theory analysis of semi-structured interview	8 high	Barriers to help-seeking included perception of help-seeking as sign of weakness, fear of being bullied, inadequate understanding of available services, concerns about

Author/country	Aim(s)	Participants	Health service setting	Data collection and analysis	Quality rating	Summary of findings
	school-based youth health nurse services.					privacy, and the fear that seeking help might lead to disciplinary actions. Facilitators included integrating appropriate curriculum to normalize help-seeking behaviours, using engagement for physical health to promote mental health discussions, friendly and supportive staff, incorporating games and outdoor activities when suitable, appealing to the desire for independence among adolescent boys and encouragement from friends.
Kalmuss and Austrian (2010) United States	Explore the factors that influence the sexual health	74 men (18-30 years), 54% of the men were Latino,	Sexual and reproductive health services	Thematic analysis of focus groups	6 moderate	Barriers to help-seeking included perception that sexual health concerns are only relevant

Author/country	Aim(s)	Participants	Health service setting	Data collection and analysis	Quality rating	Summary of findings
	care services utilization of young adult Latino and Black men in northern Manhattan.	43% were African American, and 3% were both.				when something is amiss, pressure to appear strong, self-reliance, and the fear of stigma impacting status, fears of uncovering incurable conditions, economic constraints, and limited sexual health knowledge. Facilitators for help-seeking were tied to tangible evidence prompting action, such as experiencing symptoms or having an infected partner and encouragement from friends.
Lindberg, Lewis-Spruill, and Crownover (2006) United States	Explore the attitudes and perceptions of minority urban adolescen	18 young men (15-18 years) who self-identified as black	Sexual and reproductive health services	Thematic analysis of focus group data	7 high	Barriers to help-seeking among young men included stigma associated with STIs leading to damage to reputation and feelings of

Author/country	Aim(s)	Participants	Health service setting	Data collection and analysis	Quality rating	Summary of findings
	t men regarding the availability of and access to reproductive healthcare in their community.					embarrassment and shame, ignorance about the necessity for treatment, lack of awareness regarding treatment locations, concerns about confidentiality and privacy, encounters with disrespectful or impersonal staff and prolonged waiting times. Facilitators were linked to positive service experiences, including welcoming staff, a comfortable and enjoyable atmosphere, the option to have a support person or friend present, engaging activities in the waiting area, respectful interactions with healthcare workers, the convenience of local clinics, and the availability of clinics

Author/country	Aim(s)	Participants	Health service setting	Data collection and analysis	Quality rating	Summary of findings
						offering a range of services.
Lindsey et al. (2006) United States	Explore the help-seeking behaviours and mental health attitudes of African American adolescent men with depression.	18 African American young men (14 -18 years)	Mental health services	Thematic analysis of semi-structured interview responses	7 high	Stigma, pride, reluctance to express emotion and ethnicity of provider were identified as barriers to help-seeking. Support from friends in family was identified as an important facilitator for help-seeking.
Lynch, Long, and Moorhead (2018) Republic of Ireland	Explore barriers to professional help seeking for mental health problems among young men and to explore solutions proposed by them that are relevant to their lived realities.	17 men (18-24 years) living in County Donegal, northwest Ireland.	Mental health services	Thematic analysis of focus groups and interviews	10 high	Low mental health literacy and stigma associated with having a mental health problem are common barriers. More accessible healthcare services that take into account masculine norms could be beneficial.

Author/country	Aim(s)	Participants	Health service setting	Data collection and analysis	Quality rating	Summary of findings
MacDonald, Burton, Carachi, and O'Toole (2021) United Kingdom	Investigate adolescent men's knowledge and experience of testicular health issues to understand why presentation with a painful scrotum is routinely delayed in adolescent men.	16 men (11-18 years) from a broad socioeconomic spectrum	Hospital emergency department	Thematic analysis of semi structured Interview	8 high	Lack of knowledge about testicular torsion may delay help-seeking for symptomatic young men.
Marcell et al. (2017) United Sates	Explore young men's perceptions of the facilitators and barriers to sexual and reproductive healthcare use.	70 men (15-24 years), 49% of the men were Latino, 51% were African American	Sexual and reproductive health services	Content analysis of focus groups	7 high	Identified barriers included perceiving that healthcare culture is centred around women's health need, costs, long appointments, concerns about confidentiality and fears about STI/HIV testing.
Meechan, John, and Hanna (2021)	Examine how young black men in the United	10 young men (16-18 years) who self-	Mental health services	Thematic analysis of semi-structured	10 high	Masculine traits, cultural factors and fear of stigma were

Author/country	Aim(s)	Participants	Health service setting	Data collection and analysis	Quality rating	Summary of findings
United Kingdom	Kingdom understand mental health and associated systems of support.	identified as black		interview		identified as key barriers.
Omura, Hills, and Ritchie (2006) New Zealand	Investigate the knowledge and views of Asian sojourners on sexual health.	66 men who are Asian student sojourners 7 health practitioners or educators who deal with Asian clients	Sexual health services	Content analysis of interview and online survey data	1 low	Cultural factors play a significant role in facilitating or limiting engagement with sexual health care among Asian sojourners.
Pearson (2003) United Kingdom	Explore young men's use of sexual health services.	75 young men (13 - 21 years) from different locations across England	Sexual health services	Thematic analysis of focus group data	6 moderate	Fear of losing social status, unwillingness to expose weakness and travel and time costs and perception that services are women-orientated were identified as barriers to service. The use of incentives (free condoms) was identified as a facilitator.

Author/country	Aim(s)	Participants	Health service setting	Data collection and analysis	Quality rating	Summary of findings
Rasmussen, Hjelmeland, and Dieserud (2018) Norway	Investigate what prevented young men who suicided from consulting a health professional prior to deciding to end their lives.	61 persons closely connected to 10 young men (18-30 years) who died by suicide	Mental health services	Thematic analysis of interviews and suicide notes.	6 moderate	Primary barriers to engaging in help-seeking were a sense of defeat or failure, pressure to not appear 'weak', and fear of mental disorders.
Rice, Telford, Rickwood, and Parker (2018) Australia	Identify barriers and facilitators to mental health care use for young men.	25 men (12 - 25 years) and 4 service providers	Early intervention on mental health services	Thematic analysis of interview and focus group data	7 high	The identified barriers were men's role expectations, talk therapy as unknown territory, difficulties navigating the system and intake processes. The identified facilitators were positive initial contact, effective cross-sector partnerships, availability of men practitioners and use of targeted messaging.

Author/country	Aim(s)	Participants	Health service setting	Data collection and analysis	Quality rating	Summary of findings
Sagar-Ouriaghli, Brown, Tailor, and Godfrey (2020) United Kingdom	Highlight key features that could be integrated into mental health programs aiming to promote the engagement of students who are men in seeking assistance for mental health challenges.	24 men (18-31 years) attending a London university	Mental health services	Thematic analysis of focus group data	8 high	The analysis revealed five themes: 1) safeguarding vulnerability of men, 2) presenting a masculine perspective on seeking help, 3) variations in preferences for intervention formats, 4) challenges in determining when and how to seek help, and 5) strategies to sensitively engage students who are men.
Samuel (2015) United States	Investigate how cultural factors impact the attitudes and help-seeking actions of African American adolescent men who have undergone mental health	54 African American men (15-17 years) who have been released from juvenile detention	Mental health services	Thematic analysis of interview transcripts	6 moderate	Stigma, shame, fear and mistrust of service providers were common barriers to mental healthcare.

Author/country	Aim(s)	Participants	Health service setting	Data collection and analysis	Quality rating	Summary of findings
	treatment following detention.					
Su, Belton, and Ryder (2016) Australia	Investigate why young men are less tested for sexually transmitted infections (STI) in remote Indigenous communities.	25 men (16-29 years) living in a remote Indigenous community in the Northern Territory and 5 remote area clinicians	Community sexual health clinic	Thematic analysis of interviews and focus group discussions	7 high	Major barriers to men's seeking STI testing included shame, lack of understanding of STIs and the need for testing, and inadequate access to clinicians who are men. Facilitators of access to healthcare and STI testing were offering testing at gender-sensitive and separate locations, and community-based sexual health promotion to increase knowledge of STIs.
Tang, Oliffe, Galdas, Phinney, and Han (2014) Canada	Explore the relationship between masculinities and college	21 college men (19 - 25 years) who were diagnosed or self-identified	Mental health services for depression	Thematic analysis of interviews	8 high	Denying weakness, limiting self-disclosure and mustering autonomy where identified as barriers to help-

Author/country	Aim(s)	Participants	Health service setting	Data collection and analysis	Quality rating	Summary of findings
	men's help-seeking for depression.	as depressed				seeking for depression. Redefining strength was identified as a facilitator.
Timlin-Scalera, Ponterotto, Blumberg, and Jackson (2003) United States	Identify the factors involved with adolescent men's decisions to seek or not to seek help for mental health stressors.	35 total: 22 men (14-18 years) 4 women students 4 parents of participants 5 guidance department staff members	Mental health services	Grounded theory analysis of semi-structured interviews	8 high	Masculine ideals acted as barriers to help seeking. Familiarity with mental health services was a facilitator.
Wilson, Cruickshank, and Lea (2012) Australia	Identify barriers preventing young rural men from accessing early intervention mental health services.	13 young men living in a rural community New South Wales, Australia (12-24 years) 10 participant parents	Early intervention mental health services	Thematic analysis of interview data	6 moderate	Identified barriers included low mental health literacy, stigma and uncertainty around appropriate health-services. Supportive parents was a facilitator for engagement with health services.

Appendix B: Supplementary Material to Chapter 4

The materials included in this appendix were previously published as online supplementary material accompanying the published manuscript presented in Chapter 4(1). The content has not been altered; however, minor formatting adjustments have been made to ensure consistency with the thesis document. The materials include:

Appendix B.1 – National Men's Health Survey Questionnaire (referred to as S1 Appendix in the published manuscript)

Appendix B.2 – Logistic regression analyses results (Table B.1; Referred to as S2 Table in the published manuscript)

Appendix B.3 – Monash University HREC Approval Certificate

Reference

1. Palmer R, Kite J, Phongsavan P, Moss TJ, Marshall B, Halim N, Smith BJ. Age-related differences in men's preferences and barriers to healthcare: insights from a national Australian survey. *PLoS One*. 2025;20(5).

Appendix B.1 – National Men's Health Survey Questionnaire

Appendix B.1 2650 National men's health survey – Questionnaire – March 2020

PROJECT NOTES

- Data collection in Life in Australia™ (Project number = 2650)
- Online only (i.e., no CATI)
- Males only

GENERAL PROGRAMMING NOTES

- Display all grid questions as a grid (i.e., table). Where grids have more than 6 statements, split on separate screens, with 6 statements per screen. Ensure question text and response scale is repeated on each screen.
- For INTERVIEWMODE=WEB, unless specified, hide options 98 and 99. If respondent does not answer, please then add them to the frame
    - MESSAGE ON POP-UP: You have not provided a response. Is that because you're not sure, or you would prefer not to answer?

***CALL OUTCOMES AND RR1**

**USE STANDARD CALL OUTCOMES

**USE STANDARD RR1

*(INTERVIEWMODE=WEB AND p_gender=males).

MODULE A: Healthy Males questions

*(ALL)

HM Welcome to the National Men's Health section of the survey. This section is on behalf of Healthy Male and aims to understand your attitudes towards men's health.

The ethical aspects of this research have been approved by the Monash Research Ethics Committee (Project ID 27289).

To gain information about this survey and decide whether to take part, please read the Explanatory Statement before starting the survey: [INSERT LINK TO EXPLANATORY STATEMENT].

Please click 'Next' to complete the survey.

MODULE A: CURRENT HEALTH

*(ALL)
HM_A1. To start with, we would like to ask about your current health.

In general, how would you describe your **physical** health?

1. Poor
2. Fair
3. Very good
4. Excellent
98. Not sure [SHOW ON SCREEN]
99. Prefer not to say [SHOW ON SCREEN]

*(ALL)
HM_A2. In general, how would you describe your **mental** health?

1. Poor
2. Fair
3. Very good
4. Excellent
98. Not sure [SHOW ON SCREEN]
99. Prefer not to say [SHOW ON SCREEN]

*(TS1)

MODULE B: HEALTH AND WELL-BEING ISSUES

*(ALL)
HM_B1. We would now like to ask about health and well-being issues that might concern you.

Below is a list of possible health concerns for men. Which of the three are most concerning to you?

Please select three responses.

[MULITIPLE] [MUST SELECT 3] [RANDOMISE 1-19]
1. Smoking
2. Alcohol intake
3. Depression
4. Anxiety
5. Overweight and obesity
6. Lack of exercise
7. Poor diet
8. Erectile difficulty
9. Premature ejaculation
9. Loneliness
10. Stress
11. Strains in personal relationships
12. Challenges in parenting children
13. Body image
14. Fertility
15. Sexually transmitted infections
16. Recreational drug use
17. Performance-enhancing drug use
18. Health and safety at work
19. Managing anger
96. Other issue (Please specify)

98. Not sure
99. Prefer not to say

*(HM_B1=1-96, HAVE CONCERNS)

HM_B2. How satisfied or dissatisfied are you with the information available on the following health issues?

Please rate your level of satisfaction using a 1 to 7 scale, where 1=not at all satisfied, 4=moderately satisfied, 7=completely satisfied.

[STATEMENTS] [ONLY SHOW CODES SELECTED AT B1]

a. Smoking
b. Alcohol intake
c. Depression
d. Anxiety
e. Overweight and obesity
f. Lack of exercise
g. Poor diet
h. Erectile difficulties
i. Premature ejaculation
j. Loneliness
k. Stress
l. Strains in personal relationships
m. Challenges in parenting children
n. Body image
o. Fertility
p. Sexually transmitted infections
q. Using recreational drugs
r. Using performance-enhancing drugs
s. Health and safety at work
t. Managing anger
u. <PIPE IN ANSWER FROM Q3=96>

[RESPONSE FRAME]

1. 1 – Not at all satisfied
2. 2
3. 3
4. 4 – Moderately satisfied
5. 5
6. 6
7. 7 – Completely satisfied

98. Not sure
99. Prefer not to say

*(ALL)

HM_B3. When you have health concerns or begin to experience symptoms of ill health, how likely are you to do each of the following?

On a scale of 1-7, please indicate how likely you are to do each of these things, where 1=not at all likely; 4=somewhat likely; 7=extremely likely.

[STATEMENTS]

a. Call a telephone helpline
b. Visit a trusted website
c. Search the internet (using Google or another search engine)
d. Talk to a friend/colleague before deciding whether to visit a Doctor
e. Talk to a pharmacist/allied health professional to assess the need to visit a Doctor
f. Wait until symptoms are unbearable or prevent you from functioning before visiting a Doctor
g. Monitor the symptoms and try to self-diagnose
h. Monitor the symptoms in hopes they will go away on their own
i. Make an appointment with the Doctor right away
j. Talk to a partner or family member to assess the need to visit a Doctor

[RESPONSE FRAME]
1. 1 – Not at all likely
2. 2
3. 3
4. 4 – Somewhat likely
5. 5
6. 6
7. 7 – Extremely likely
98. Not sure [SHOW IN GRID]
99. Prefer not to say [SHOW IN GRID]

*(ALL)

HM_B4. Now, imagine that you begin to experience pain that is not so overwhelming that you cannot function. However, it continues for more than a few days and you notice it regularly.

How likely would you be to seek help for this health problem?

Please select a number to indicate your answer, where 1=not at all likely, 4=somewhat likely, 7=extremely likely.

1. 1 – Not at all likely
2. 2
3. 3
4. 4 – Somewhat likely
5. 5
6. 6
7. 7 – Extremely likely
98. Not sure [SHOW ON SCREEN]
99. Prefer not to say [SHOW ON SCREEN]

*(ALL)

HM_B5. Below are some reasons why you might not seek help. Please read each reason and decide how important it is in preventing you from seeking help.

If you think that a reason is very important in preventing you from seeking help, you should select 5. If you think that a reason is not at all important, you should select 1. Or you can select any number in between to indicate how important that reason is for not seeking help.

[STATEMENTS]
a. I would think less of myself for needing help.
b. The problem wouldn't seem worth getting help for.
c. People typically expect something in return when they provide help.
d. Privacy is important to me, and I don't want other people to know about my problems.
e. I don't like to get emotional about things.
f. I don't like other people telling me what to do.
g. The problem wouldn't be a big deal; it would go away in time.
h. I would have real difficulty finding transportation to a place where I can get help.
i. This problem is embarrassing.
j. I don't like to talk about feelings.
k. Nobody knows more about my problems than I do.
l. I wouldn't want to overreact to a problem that wasn't serious.
m. I wouldn't know what sort of help was available.
n. I don't want some stranger touching me in ways I'm not comfortable with.
o. I'd rather not show people what I'm feeling.
p. I'd feel better about myself knowing I didn't need help from others.
q. Problems like this are part of life; they're just something you have to deal with.
r. Financial difficulties would be an obstacle to getting help.
s. I don't like taking off my clothes in front of other people.
t. I wouldn't want to look stupid for not knowing how to figure this problem out.

u. I don’t like feeling controlled by other people.
v. I’d prefer just to tolerate it rather than dwell on my problems.
w. I don’t trust doctors and other health professionals.
x. I wouldn’t want someone of the same sex touching my body.
y. It would seem weak to ask for help.
z. I would prefer to wait until I’m sure the health problem is a serious one.
aa. A lack of health insurance would keep me from seeking help.
ab. I like to make my own decisions and not be too influenced by others.
ac. I like to be in charge of everything in my life.
ad. Asking for help is like surrendering authority over my life.
ae. I do not want to appear weaker than my peers.
af. I would prefer not to find out that I have a health problem

[RESPONSE FRAME]
1. 1 – Not at all a reason
2. 2
3. 3
4. 4
5. 5
6. 6
7. 7 – Very important reason

98. Not sure [SHOW IN GRID]
99. Prefer not to say [SHOW IN GRID]

*(ALL)

HM_B6. Below is a list of reasons why some people might find it difficult to access health care when they need it.

During the **<u>past 12 months</u>**, have you been prevented from accessing health care for any of the following reasons?

Please select all that apply.

[MULITIPLE] [RANDOMISE 1-15]
1. No service available in my area at the time needed
2. Waiting time too long/no appointments
3. Not taking new patients
4. Cost
5. Decided not to seek care/didn't bother
6. Personal or family responsibilities/too busy
7. Work commitments
8. Transportation problems
9. Difficult to talk with my doctor
10. Doctor does not provide information I understand
11. Cannot find a doctor who speaks my preferred language (if not English)
12. Not enough time in an appointment to discuss my concerns
13. Not able to leave the house due to coronavirus restrictions
14. Availability of services restricted due to the coronavirus
15. Lack of telehealth options for the health care needed
96. Other (Please specify)

98. Not sure [SHOW ON SCREEN]
99. Prefer not to say [SHOW ON SCREEN]

*(ALL)

HM_B7. A comprehensive health check involving blood tests and other assessments would allow your Doctor to determine your health status and risk of disease.

How much (in dollars) do you think would be the maximum you would be willing to pay in out-of-pocket expenses for a comprehensive health check?

1. $ [ENTER NUMERIC RESPONSE, NO DECIMAL PLACES, LIMIT TO 4 DIGITS]

98. Not sure
99. Prefer not to say

*(TS2)

MODULE C: EMOTIONAL OR PSYCHOLOGICAL HEALTH

*(ALL)
HM_C1. Now, we would like to ask about seeking help for emotional or psychological difficulties.

When you experience a personal emotional or psychological problem, how likely would you be to seek help from the following?

Using a 1 to 7 scale, where 1=not at all likely, 4=somewhat likely, 7=extremely likely, please indicate how likely you are to use each of these sources of support or information.

[STATEMENTS]
a. Intimate partner (e.g. girlfriend, boyfriend, husband, wife, de facto)
b. Work colleague
c. Friend
d. Parent
e. Other relative/family member
f. Mental health professional (i.e. psychologist, social worker, counsellor)
g. Lifeline
h. Headspace
i. MensLine Australia
j. Doctor/GP
k. Religious leader (e.g. priest, rabbi, chaplain)
l. A trusted website (e.g. BeyondBlue)
m. Searching the internet (using Google or another search engine)
n. Would not seek help

[RESPONSE FRAME]
1. 1 – Not at all likely
2. 2
3. 3
4. 4 – Somewhat likely
5. 5
6. 6
7. 7 – Extremely likely

98. Not sure [SHOW ON SCREEN]
99. Prefer not to say [SHOW ON SCREEN]

*(ALL)
HM_C2. The next questions concern your views about seeking professional help for psychological problems.

The term ‘professional’ refers to individuals such as psychologists, psychiatrists, social workers, and general practitioners, who have been trained to help people deal with psychological problems such as mental health concerns, emotional problems, mental troubles, and personal difficulties.

For each statement below, please indicate how much you agree or disagree.

[STATEMENTS]
a. I would not want my significant other (spouse, partner, etc.) to know if I were suffering from psychological problems
b. Having a psychological problem carries with it a burden of shame
c. Important people in my life would think less of me if they were to find out that I was experiencing psychological problems
d. I would be uncomfortable seeking professional help for psychological problems because people in my social or business circles might find out about it
e. Having been diagnosed with a psychological problem is a blot on a person's life
f. I would feel uneasy going to a professional because of what some people would think
g. Had I received treatment for psychological problems, I would not feel that it ought to be "covered up"
h. I would be too embarrassed if my neighbour saw me going into the office of a professional who deals with psychological problems

[RESPONSE FRAME]
1. Strongly disagree
2. Disagree
3. Neither agree nor disagree
4. Agree
5. Strongly agree
98. Not sure [SHOW ON SCREEN]
99. Prefer not to say [SHOW ON SCREEN]

*(ALL)
HM_C3. We would now like to ask about the personal support that is available to you.

Please rate each statement below, using the following scale to indicate whether you: 1=very strongly disagree; 2=strongly disagree; 3=disagree; 4=neither agree nor disagree; 5=agree; 6=strongly agree; 7=very strongly agree.

[STATEMENTS]
a. There is a special person who is around when I am in need
b. There is a special person with whom I can share my joys and sorrows
c. My family really tries to help me
d. I get the emotional help and support I need from my family
e. I have a special person who is a real source of comfort to me
f. My friends really try to help me
g. I can count on my friends when things go wrong
h. I can talk about my problems with my family
i. I have friends with whom I can share my joys and sorrows
j. There is a special person in my life who cares about my feelings
k. My family is willing to help me make decisions
l. I can talk about my problems with my friends

[RESPONSE FRAME]
1. Very strongly disagree
2. Strongly disagree
3. Disagree
4. Neither agree nor disagree
5. Agree
6. Strongly agree
7. Very strongly agree

98. Not sure [SHOW ON SCREEN]
99. Prefer not to say [SHOW ON SCREEN]

*(ALL)

HM_C4. The next questions are about how you feel about different aspects of your life. For each one, please indicate how often you feel that way, where 1=hardly ever, 2=some of the time; and 3=often.

[STATEMENTS]
a. How often do you feel that you lack companionship?
b. How often do you feel left out?
c. How often do you feel isolated from others?

[RESPONSE FRAME]
1. Hardly ever
2. Some of the time
3. Often

98. Not sure [SHOW ON SCREEN]
99. Prefer not to say [SHOW ON SCREEN]

*(TS3)

MODULE D: MANAGING HEALTH

*(ALL)

HM_D1. The next questions relate to how you manage physical or mental health issues.

On a scale from 1=very difficult to 4=very easy, how easy would you say it is for you to…

[STATEMENTS]
a. Find information on treatments for illnesses that concern you?
b. Find out where to get professional help when you are ill?
c. Understand what your doctor says to you?
d. Understand your doctor's or pharmacist's instruction on how to take a prescribed medicine?
e. Judge when you may need to get a second opinion from another doctor?
f. Use information the doctor gives you to make decisions about your illness?
g. Follow instructions from your doctor or pharmacist?
h. Find information on how to manage mental health problems like stress or depression?
i. Understand health warnings about behaviour such as smoking, low physical activity and drinking too much?
j. Understand why you need health screenings?
k. Judge if the information on health risks in the media is reliable?
l. Decide how you can protect yourself from illness based on information in the media?
m. Find out about activities that are good for your mental well-being?
n. Understand advice on health from family members or friends?
o. Understand information in the media on how to get healthier?
p. Judge which everyday behaviour is related to your health?

[RESPONSE FRAME]
1. Very difficult
2. Difficult
3. Easy
4. Very easy

98. Not sure [SHOW ON SCREEN]
99. Prefer not to say [SHOW ON SCREEN]

*(ALL)

HM_D2. From the list of health information sources below, please select the **three (3)** that are most useful for you.

Please select three responses.

[MULITIPLE] [MUST SELECT 3] [RANDOMISE 1-18]

1. Websites of health organisations (e.g. Department of Health)
2. Web browsing (e.g. using Google)
3. Facebook
4. Twitter
5. Reddit
6. Instagram
7. Telephone helplines
8. Face-to-face talks/seminars
9. Fact sheets
10. Brochures/booklets
11. Apps (on mobile phone/tablet device)
12. Videos (e.g., YouTube)
13. Podcasts
14. Magazines
15. Advice from a Doctor
16. Advice from partner
17. Advice from family members
18. Advice from friends/colleagues
96. Other (Please specify)

98. Not sure
99. Prefer not to say

*(HM_D2=1-96, FIND INFORMATION USEFUL)

HM_D3. Please rank the following in order of use to you, where '1' is the **most useful**, '2' is the next most useful, and '3' is the third most useful.

[STATEMENTS] [RANDOMISE] [ONLY SHOW CODES SELECTED AT D2]

1. Websites of health organisations (e.g. Department of Health)
2. Web browsing (e.g. using Google)
3. Facebook
4. Twitter
5. Reddit
6. Instagram
7. Telephone helplines
8. Face-to-face talks/seminars
9. Fact sheets
10. Brochures/booklets
11. Apps (on mobile phone/tablet device)
12. Videos (e.g., YouTube)
13. Podcasts
14. Magazines
15. Advice from a Doctor
16. Advice from partner
17. Advice from family members
18. Advice from friends/colleagues
96. <PIPE IN ANSWER FROM Q3=96>

[RESPONSE FRAME]

1. 1 – Most useful

2. 2
3. 3

98. Not sure
99. Prefer not to say

*(ALL)
HM_D4. The following questions are about how you manage your personal health and well-being.

Thinking about your own health now, please indicate the importance of each of these factors, using a scale from 1=not at all important, 4=somewhat important, to 7= extremely important.

[STATEMENTS]
a. Keeping a healthy body weight
b. Regular physical activity
c. Being in a long-term relationship
d. Visiting your Doctor at least once per year
e. Eating vegetables and fruit every day
f. Discussing prostate checks with my Doctor
g. Getting my blood pressure checked
h. Limiting alcohol intake
i. Having regular skin checks
j. Speaking with a professional if my mental health is bad
k. Screening for colon cancer from age 50 years
l. Having friends to talk about personal things with

[RESPONSE FRAME]
1. 1 – Not at all important
2. 2
3. 3
4. 4 – Somewhat important
5. 5
6. 6
7. 7 – Extremely important

98. Not sure [SHOW ON SCREEN]
99. Prefer not to say [SHOW ON SCREEN]

*(ALL)
HM_D5. To what extent to you think it is possible to prevent the following health issues occurring in your life?

[STATEMENTS]
a. Heart disease
b. High blood pressure
c. Skin cancer
d. Stroke
e. Back pain
f. Road traffic accidents
g. Lung cancer
h. Type 2 diabetes
i. Asthma
j. Erection difficulty
k. Prostate cancer
l. High cholesterol
m. Depression
n. Colon cancer
o. Dementia/memory loss

[RESPONSE FRAME]
1. Not at all preventable

2. Rarely preventable
3. Sometimes preventable
4. Mostly preventable
5. Totally preventable

98. Not sure [SHOW ON SCREEN]
99. Prefer not to say [SHOW ON SCREEN]

*(ALL)

HM_D6. The next statements are about your ability to take care of your health. Please indicate how much you agree or disagree with each.

[STATEMENTS]
a. I manage myself well with respect to my health
b. No matter how hard I try, my health just doesn't turn out the way I would like
c. It is difficult for me to find effective solutions to the health problems that come my way
d. I succeed in the projects I undertake to improve my health
e. I'm generally able to accomplish my goals with respect to my health
f. I find my efforts to change things I don't like about my health are ineffective
g. Typically, my plans for my health don't work out well
h. I am able to do things for my health as well as most other people

[RESPONSE FRAME]
1. Strongly disagree
2. Disagree
3. Neither agree nor disagree
4. Agree
5. Strongly disagree

98. Not sure [SHOW ON SCREEN]
99. Prefer not to say [SHOW ON SCREEN]

*(TS4)

MODULE E: STRESS

*(ALL)

HM_E1. The following questions are about your current wellbeing.

This is a list of different stressful events you might have experienced. For each statement, please indicate how much you agree or disagree.

[STATEMENTS]
a. There have been more problems than positive experiences with my health status in the past 3 months
b. There have been more problems than positive experiences with my finances in the past 3 months
c. There have been more problems than positive experiences with my family/friends in the past 3 months

[RESPONSE FRAME]
1. Strongly disagree
2. Disagree
3. Neither agree nor disagree
4. Agree
5. Strongly disagree

98. Not sure [SHOW ON SCREEN]
99. Prefer not to say [SHOW ON SCREEN]

*(ALL)
HM_E2. The following is list of things that could be contributing to stress in your life.

For each statement, please indicate how much you agree or disagree.

[STATEMENTS]
a. Finding time to relax is difficult for me
b. My needs to work or study keep me from my family or leisure more than I would like
c. My work or school often disrupts other parts of my life (home, health, leisure etc.)
d. Overwork and stress, caused by a need to achieve on the job or in school, affects/hurts my life

[RESPONSE FRAME]
1. Strongly disagree
2. Disagree
3. Neither agree nor disagree
4. Agree
5. Strongly disagree

98. Not sure [SHOW ON SCREEN]
99. Prefer not to say [SHOW ON SCREEN]

*(TS5)

MODULE Z: DEMOGRAPHICS

*(ALL)
HM_Z1. Lastly, we want to know a bit about you to understand the characteristics of our survey respondents.

Could you please select your age group below?

1. 18-24 years
2. 25-29 years
3. 30-34 years
4. 35-39 years
5. 40-44 years
6. 45-49 years
7. 50-54 years
8. 55-59 years
9. 60-64 years
10. 65-69 years
11. 70-74 years
12. 75 years and over

98. Not sure
99. Prefer not to say

*(ALL)
HM_Z2. Are you currently…?

1. Married
2. Living together with a partner
3. Divorced
4. Separated
5. Widowed
6. Never married

98. Not sure

99. Prefer not to say

*(ALL)
HM_Z3. Do you have any children?

In your answer, please consider any biological, step or adopted children you may have.

1. Yes
2. No

98. Not sure
99. Prefer not to say

*(Z3=1, HAVE CHILDREN)
HM_Z4. Please indicate the number of children you have in each of the age groups below:

[STATEMENTS]
a. Children aged under 18 years
b. Children aged 18 years and above

[RESPONSE FRAME] [SHOW AS DROP-DOWN MENU]
1. 1
2. 2
3. 3
4. 4
5. 5 Or more

99. Prefer not to say

*(ALL)
HM_Z5. Please select the option which best describes your current employment status.

1. Employed full-time
2. Employed part-time/casual
3. Looking for work/employment
4. Home duties
5. Student
6. Retired
7. Unable to work due to health problems
96. Other (Please specify)

98. Not sure
99. Prefer not to say

*(ALL)
HM_Z6. What has been your main occupation for most of your life?

1. Manager
2. Professional
3. Technician or trades worker
4. Community or personal service worker
5. Clerical or administrative worker
6. Sales worker
7. Machinery operator or driver
8. Labourer
96. Other (Please specify)
97. Have not worked

98. Not sure

99. Prefer not to say

*(ALL)
HM_Z7. Which language do you mainly speak at home?

If more than one language, indicate the one that is spoken most often.

1. English
2. Mandarin
3. Italian
4. Arabic
5. Cantonese
6. Greek
7. Vietnamese
8. Spanish
9. Hindi
10. Tagalog (Filipino)
11. An Aboriginal language (Please specify)
12. A Torres Strait Islander language (Please specify)
96. Other (Please specify)

98. Not sure
99. Prefer not to say

*(ALL)
HM_Z8. Do you have any of the following physical or mental health conditions, disabilities or illnesses that have lasted or are expected to last 12 months or more?
[STATEMENTS]
a. Autism or autism spectrum condition
b. Breathing problem, such as asthma
c. Blindness or partial sight
d. Cancer
e. Dementia or Alzheimer's disease
f. Deafness or hearing loss
g. Diabetes
h. Heart problem, such as angina
i. Joint problem, such as arthritis
j. Kidney or liver disease
k. Learning disability
l. Mental health condition
m. Neurological condition
n. Stroke related illnesses (which affects your day-to-day life)

[RESPONSE FRAME]
1. Yes
2. No
99. Prefer not to say

*(ALL)
HM_Z9. What is your gender?

1. Male
2. Female
96. Other (Please specify)

98. Not sure
99. Prefer not to say

*(ALL)
HM_Z10. Do you think of yourself as…?

1. Straight
2. Gay
3. Bisexual
96. Other (Please specify)

98. Not sure
99. Prefer not to say

*(TS6)

CLOSING SCRIPT

*(ONLINE)

Thank you for taking the time to participate. This survey was conducted by the Social Research Centre on behalf of Healthy Male.

[DISPLAY IF INCENTIVE=1-3] Your reward will be processed and sent in the next few weeks.

This research study has been carried out in compliance with the Privacy Act and the Australian Privacy Principles, and the information you have provided will only be used for research purposes. Our Privacy Policy is available via our website, www.srcentre.com.au/research-participants#privacy

For further information you can contact the Social Research Centre on 1800 023 040 or LifeinAus@srcentre.com.au.

If you would like to talk to someone about any issues that have arisen from participating in this survey, about how you have been feeling, or if you have any concerns about your mental health, please seek support from one of the services listed below:

beyondblue	www.beyondblue.org.au
	Phone: 1300 22 4636
Lifeline	www.lifeline.org.au
	Phone: 13 11 14

If you have been affected by the ongoing Coronavirus pandemic, please contact one of the agencies above if you have concerns about your mental health, or contact Services Australia for other types of assistance:

Services Australia: https://www.servicesaustralia.gov.au/individuals/subjects/affected-coronavirus-covid-19

Your answers have been submitted. You may now close the page.

Appendix B.2 – Logistic regression analyses on association between socio-demographic characteristics and practical barriers to healthcare engagement for men.

Population segment	Waiting time/no appointments		Cost		Decided not to seek care		Personal responsibilities/too busy		Work commitments		Restricted services due to COVID		3 or more obstacles	
	n (%)	OR (95% CI)	n (%)	OR (95% CI)	n (%)	OR (95% CI)	n (%)	OR (95% CI)	n (%)	OR (95% CI)	n (%)	OR (95% CI)	n (%)	OR (95% CI)
All men	271 (21%)		251 (20%)		276 (22%)		188 (15%)		290 (23%)		198 (16%)		311 (24%)	
Age group														
70+	30 (17%)	Ref	12 (7%)	Ref	23 (13%)	Ref	10 (6%)	Ref	4 (2%)	Ref	20 (12%)	Ref	16 (9%)	Ref
18-29	52 (22%)	1.72 (0.90-3.29)	68 (28%)	13.29 (5.82-30.38)**	85 (35%)	2.80 (1.49-5.27)**	49 (20%)	5.31 (2.29-12.29)**	76 (32%)	33.44 (10.36-107.91)**	38 (16%)	0.92 (0.45-1.91)	77 (32%)	7.56 (3.74-15.29)**
30-39	68 (25%)	2.17 (1.19-3.93)*	67 (25%)	8.79 (3.95-19.53)**	59 (22%)	1.48 (0.80-2.75)	55 (20%)	4.42 (1.97-9.91)**	84 (31%)	30.74 (9.71-97.34)**	43 (16%)	1.07 (0.54-2.11)	86 (32%)	7.00 (3.57-13.71)**
40-49	53 (26%)	2.13 (1.18-3.84)*	38 (18%)	5.83 (2.60-13.05)**	42 (20%)	1.43 (0.78-2.65)	38 (18%)	3.94 (1.75-8.83)**	65 (31%)	26.04 (8.25-82.25)**	37 (18%)	1.40 (0.72-2.72)	65 (31%)	5.86 (3.00-11.44)**
50-59	42 (21%)	1.52 (0.86-2.71)	44 (22%)	6.22 (2.85-13.55)**	36 (18%)	1.17 (0.63-2.15)	24 (12%)	2.21 (0.97-5.05)	45 (23%)	15.77 (5.02-49.55)**	28 (14%)	1.14 (0.58-2.22)	47 (24%)	3.34 (1.73-6.47)**
60-69	27 (14%)	0.88 (0.48-1.62)	21 (11%)	2.56 (1.13-5.80)*	30 (16%)	1.08 (0.59-2.00)	13 (7%)	1.17 (0.48-2.84)	15 (8%)	4.39 (1.32-14.67)*	32 (17%)	1.54 (0.81-2.91)	20 (11%)	1.25 (0.60-2.57)

Location														
Urban	181 (21%)	Ref	171 (20%)	Ref	195 (23%)	Ref	144 (17%)	Ref	212 (25%)	Ref	147 (17%)	Ref	229 (27%)	Ref
Rural	88 (21%)	0.90 (0.64-1.26)	80 (19%)	1.28 (0.89-1.83)	81 (19%)	0.88 (0.63-1.23)	44 (10%)	0.76 (0.50-1.15)	78 (18%)	0.70 (0.50-1.00)*	51 (12%)	0.63 (0.42-0.92)*	82 (19%)	0.71 (0.51-1.00)*
Marital status														
Never married	63 (22%)	Ref	70 (25%)	Ref	82 (29%)	Ref	46 (16%)	Ref	75 (26%)	Ref	56 (20%)	Ref	79 (28%)	Ref
Divorced/widowed	26 (21%)	1.17 (0.64-2.14)	24 (19%)	1.27 (0.68-2.39)	26 (21%)	1.25 (0.70-2.24)	7 (6%)	0.41 (0.16-1.06)	13 (10%)	0.67 (0.33-1.37)	13 (10%)	0.34 (0.16-0.72)**	22 (18%)	0.92 (0.49-1.74)
Married/defacto	179 (21%)	1.10 (0.74-1.63)	156 (18%)	1.06 (0.71-1.56)	167 (19%)	0.84 (0.58-1.21)	134 (16%)	1.21 (0.79-1.86)	201 (23%)	1.28 (0.89-1.86)	128 (15%)	0.63 (0.42-0.96)*	209 (24%)	1.29 (0.89-1.87)
SEIFA quintile														
Q1 (most disadvantaged)	54 (22%)	Ref	46 (19%)	Ref	50 (20%)	Ref	38 (16%)	Ref	59 (24%)	Ref	33 (13%)	Ref	59 (24%)	Ref
Q2	73 (29%)	1.29 (0.83-1.98)	47 (18%)	1.00 (0.60-1.64)	54 (21%)	0.96 (0.61-1.52)	34 (13%)	0.84 (0.49-1.45)	62 (24%)	0.94 (0.60-1.49)	43 (17%)	1.30 (0.77-2.19)	72 (28%)	1.15 (0.73-1.79)
Q3	46 (18%)	0.64 (0.39-1.03)	56 (22%)	1.50 (0.93-2.42)	57 (22%)	1.04 (0.66-1.65)	38 (15%)	1.02 (0.60-1.73)	56 (22%)	0.67 (0.42-1.07)	51 (20%)	1.81 (1.09-3.00)*	65 (26%)	1.00 (0.64-1.58)
Q4	45 (17%)	0.66 (0.42-1.05)	48 (18%)	1.10 (0.68-1.79)	53 (20%)	0.85 (0.54-1.34)	29 (11%)	0.56 (0.32-0.97)*	49 (19%)	0.51 (0.32-0.81)**	32 (12%)	0.80 (0.46-1.37)	55 (21%)	0.69 (0.44-1.08)
Q5 (least disadvantaged)	49 (19%)	0.66 (0.41-1.07)	54 (21%)	1.38 (0.84-2.28)	63 (25%)	0.98 (0.61-1.56)	49 (19%)	0.99 (0.59-1.67)	62 (24%)	0.68 (0.42-1.08)	38 (15%)	0.89 (0.52-1.54)	60 (23%)	0.67 (0.42-1.08)
Education														
University	95 (23%)	Ref	84 (20%)	Ref	115 (28%)	Ref	82 (20%)	Ref	121 (29%)	Ref	74 (18%)	Ref	122 (30%)	Ref

Trade/vocational	77 (16%)	0.62 (0.41-0.93)*	91 (19%)	1.23 (0.82-1.85)	96 (20%)	0.71 (0.49-1.03)	66 (14%)	0.88 (0.57-1.36)	104 (22%)	0.90 (0.62-1.32)	64 (13%)	0.70 (0.45-1.08)	94 (20%)	0.72 (0.49-1.05)
High school	84 (24%)	1.17 (0.78-1.74)	66 (19%)	1.27 (0.84-1.95)	59 (17%)	0.46 (0.31-0.70)**	34 (10%)	0.63 (0.39-1.03)	60 (17%)	0.72 (0.48-1.09)	55 (16%)	0.90 (0.58-1.40)	83 (24%)	1.07 (0.73-1.57)
Occupation														
Manager/professional	131 (22%)	Ref	119 (20%)	Ref	141 (23%)	Ref	102 (17%)	Ref	156 (26%)	Ref	97 (16%)	Ref	164 (27%)	Ref
Trades/manual	78 (20%)	0.97 (0.67-1.42)	62 (16%)	0.79 (0.53-1.18)	68 (17%)	0.96 (0.66-1.40)	48 (12%)	0.97 (0.62-1.49)	80 (21%)	0.84 (0.57-1.22)	56 (14%)	0.96 (0.63-1.46)	79 (20%)	0.74 (0.51-1.06)
Sales/service	58 (24%)	1.21 (0.81-1.81)	65 (27%)	1.59 (1.06-2.37)*	53 (22%)	1.10 (0.73-1.63)	34 (14%)	1.07 (0.67-1.71)	51 (21%)	0.81 (0.54-1.23)	41 (17%)	1.10 (0.70-1.71)	61 (25%)	0.95 (0.64-1.41)
Country of birth														
English speaking	206 (21%)	Ref	173 (18%)	Ref	214 (22%)	Ref	129 (13%)	Ref	227 (23%)	Ref	145 (15%)	Ref	224 (23%)	Ref
Non-English speaking	65 (22%)	1.06 (0.73-1.53)	78 (27%)	2.21 (1.53-3.19)**	61 (21%)	0.72 (0.50-1.04)	59 (20%)	1.35 (0.90-2.03)	62 (21%)	0.62 (0.42-0.90)*	53 (18%)	1.38 (0.93-2.04)	87 (30%)	1.27 (0.90-1.81)
Disability														
No disability	210 (21%)	Ref	178 (18%)	Ref	224 (23%)	Ref	153 (15%)	Ref	232 (23%)	Ref	154 (15%)	Ref	238 (24%)	Ref
Lives with disability	61 (21%)	1.08 (0.74-1.58)	73 (26%)	2.50 (1.71-3.67)**	51 (18%)	0.83 (0.56-1.21)	34 (12%)	0.97 (0.61-1.53)	58 (20%)	1.30 (0.88-1.93)	44 (15%)	0.98 (0.65-1.48)	73 (26%)	1.43 (0.98-2.07)

Note. a Occupation category ‘Other’ not included due to small sample size. All analyses adjusted for all socio-demographic variables and self-reported physical and mental health status. *p < 0.05; **p < 0.001.

Appendix B.3 – Monash University HREC Approval Certificate

MONASH University

Monash University Human Research Ethics Committee

Approval Certificate

This is to certify that the project below was considered by the Monash University Human Research Ethics Committee. The Committee was satisfied that the proposal meets the requirements of the *National Statement on Ethical Conduct in Human Research* and has granted approval.

Project ID: 27289
Project Title: National Mens Health Survey 2021
Chief Investigator: Assoc Professor Ben Smith
Approval Date: 05/03/2021
Expiry Date: 05/03/2026

Terms of approval - failure to comply with the terms below is in breach of your approval and the *Australian Code for the Responsible Conduct of Research*.

1. The Chief Investigator is responsible for ensuring that permission letters are obtained, if relevant, before any data collection can occur at the specified organisation.
2. Approval is only valid whilst you hold a position at Monash University.
3. It is responsibility of the Chief Investigator to ensure that all investigators are aware of the terms of approval and to ensure the project is conducted as approved by MUHREC.
4. You should notify MUHREC immediately of any serious or unexpected adverse effects on participants or unforeseen events affecting the ethical acceptability of the project.
5. The Explanatory Statement must be on Monash letterhead and the Monash University complaints clause must include your project number.
6. Amendments to approved projects including changes to personnel must not commence without written approval from MUHREC.
7. Annual Report - continued approval of this project is dependent on the submission of an Annual Report.
8. Final Report - should be provided at the conclusion of the project. MUHREC should be notified if the project is discontinued before the expected completion date.
9. Monitoring - project may be subject to an audit or any other form of monitoring by MUHREC at any time.
10. Retention and storage of data - The Chief Investigator is responsible for the storage and retention of the original data pertaining to the project for a minimum period of five years.

Kind Regards,

Professor Nip Thomson

Chair, MUHREC

CC: Assoc Professor Timothy Moss, Professor Robert McLachlan, Prof Bernie Marshall, Ms Nicole Halim

List of approved documents:

Document Type	File Name	Date	Version
Explanatory Statement	Healthy Male Mens Health Survey Explanatory Statement	17/02/2021	1
Supporting Documentation	Life in Australia HM Mens Health Survey invitations and reminders	17/02/2021	1
Supporting Documentation	Research protocol - National mens health survey - Feb 2021	17/02/2021	1
Questionnaires / Surveys	Healthy Male Mens Health Survey_16-Feb_2021	17/02/2021	1
Explanatory Statement	Healthy Male Mens Health Survey Explanatory Statement V2	03/03/2021	2

Appendix C: Supplementary Material to Chapter 5

The materials included in this appendix are currently in press to be published as online supplementary material accompanying the published manuscript presented in Chapter 5 (1). The content has not been altered; however, minor formatting adjustments have been made to ensure consistency with the thesis document. The materials include:

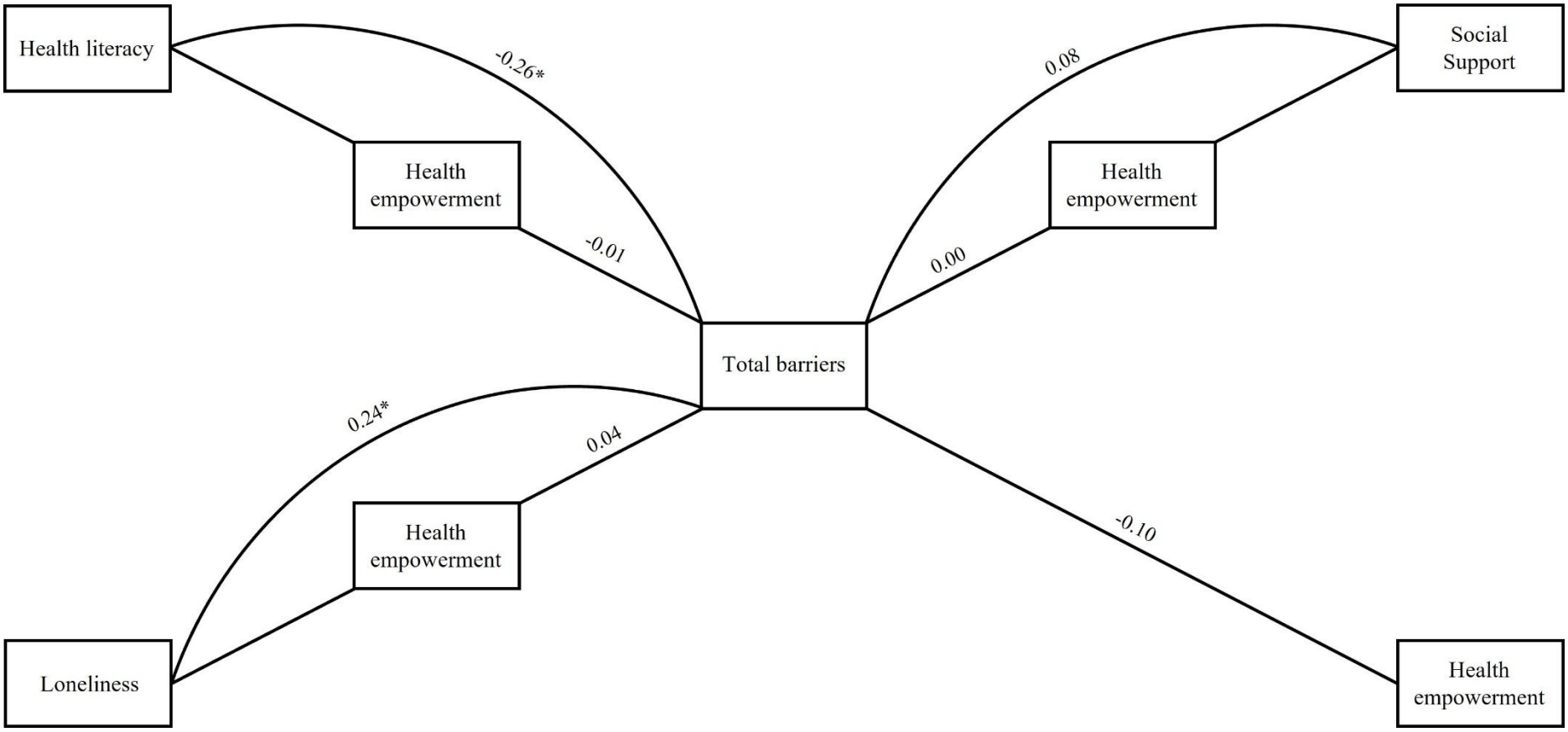
- Appendix C.1 –Structural equation model showing direct and indirect associations between psychosocial factors and total barriers (Figure C.1; referred to as Supplementary File 2 in the manuscript)

Reference

1. Palmer R, Kite J, Phongsavan P, Owen KB, Moss TJ, Marshall B, Halim N, Smith BJ. (in press). Determinants of young men's help-seeking behaviour: Insights from a national Australian survey. *Am J Mens Health*. DOI: 10.1177/15579883251412964

Appendix C.1

Supplementary Figure C.1. Structural equation model showing direct and indirect associations between psychosocial factors and total barriers



Note. Analyses adjusted for socio-demographic variables and health status. *p< 0.05; **p< 0.001.

Appendix D: Supplementary Material to Chapter 6

The materials included in this appendix were submitted as online supplementary material accompanying the manuscript presented in Chapter 6 (1). The content has not been altered; however, minor formatting adjustments have been made to ensure consistency with the thesis document. The materials include:

- Appendix D.1 – Interview Guide (Referred to as Supplementary File 1 in the manuscript)
- Appendix D.2 – The University of Sydney HREC Approval Certificate
- Appendix D.3 – COREQ checklist (Referred to as Supplementary File 2 in the manuscript)
- Appendix D.4 – Participant demographic characteristics (Table D.1; referred to as Supplementary File 3 in the manuscript)

Reference

1. Palmer R, Phongsavan P, Smith BJ, Kite J. "Does that make me less of a man?": Qualitative insights for supporting help-seeking among young Australian men. *Health Soc Care Community*, under review

Appendix D.1 – Interview Guide

Introduction

1. **Introduce Self**
2. **Explain Purpose and Confidentiality:**
    - We're talking to young men like you to understand your experiences with health services. We want to know what makes it easier or harder for you to use these services. Your input will help us improve health services to make them more appealing and accessible for young men.
    - This interview will take about 60 minutes and will be audio recorded and transcribed, so we have an accurate record of what you say. The recordings and transcripts will be kept confidential and only the research team will have access to them. Our study has ethics approval and once your interview has been transcribed, any information linking you to the transcript will be destroyed.
    - After the interview, if you want, you can ask for a copy of your transcript to review or edit your answers before we start analysing the data.
    - You may skip any questions you don't want to answer.
    - Feel free to talk as much as you want on any topic; I'll keep track of the time.
    - Do you have any questions for me?
    - If you need to contact me at any time after the interview to ask any questions, my contact details are: [blinded for review].
3. **Icebreaker discussion**
    - Before we get into the main part of the interview, I'd like to get to know you a little better. Can you tell me a bit about yourself? What are you doing now, are you working, studying, or something else?
    - Do you spend much time thinking about your health? What kind of health issues, if any, are on your mind these days?

Mental health vignette and interview guide

Vignette: Sam is a 25-year-old man who has been feeling increasingly anxious and stressed over the past year. He has difficulty sleeping, feels constantly on edge, and finds it hard to concentrate at work. Sam often worries about his performance and fears that he is not meeting expectations. These feelings have started to affect his social life; he has begun to isolate himself, avoiding gatherings with friends and family because he does not have the energy or motivation to socialise. Sam feels that he will not be fun to be around and worries that his presence will bring others down. His friends have noticed that he is less active, often cancels plans, and seems distracted when they do see him, but he brushes off their concerns, saying he's just busy with work. Although he recognises that he might benefit from talking to a mental health professional, Sam hesitates to seek help. He feels that he should be able to handle his problems on his own.

Questions:

1. **Empathy and Identification:**
    - What would you do if you were in Sam's situation?
    - Can you relate to Sam's feelings about seeking help for mental health issues? Why or why not?
2. **Barriers to Seeking Help:**
    - What do you think are the things that get in the way or stop young men like Sam from seeking help for mental health issues?
3. **Facilitators to Seeking Help:**
    - What might encourage someone like Sam to seek help for his anxiety and stress?
    - What changes can mental health services make to better accommodate young men who might be in similar situations as Sam?

- How can mental health services address the concerns and barriers that young men face when it comes to seeking help?

4. **Health Promotion Efforts:**
    - What kind of messages do you think would be effective in encouraging young men to seek help for mental health issues?
    - How do you prefer to receive health-related information (e.g., social media, websites, community events)?
5. **Miracle Question:**
    - What would the ideal scenario be if it was up to you? If you could give a tip to policymakers and healthcare professionals, what would it be? How would you do it if you were in charge of mental healthcare?
6. **Comparison with Physical Health:**
    - Do you think your responses or feelings would be different if this was about a physical health issue, like cancer or a sport injury, instead of a mental health issue? If so, how?
7. **Final Thoughts:**
    - Is there anything else you would like to share about your experiences or opinions on this topic?

Physical health vignette and interview guide

Vignette: Alex is a 22-year-old man who has been experiencing persistent back pain for the past six months. The pain affects his ability to focus at work and participate in social activities, like playing sports with friends. Alex works a physically demanding job and worries that seeking help might make him appear weak or incapable to his coworkers. To cope with the pain, Alex often takes over-the-counter painkillers and tries to push through his day. Despite the ongoing discomfort, Alex has avoided visiting a doctor because he believes that he should be able to handle the pain on his own. He fears that seeking medical help might make others see him as less strong and independent. Alex's friends and family have noticed that he seems more withdrawn and less active than usual, but he brushes off their concerns, saying he's fine.

Questions:

1. **Empathy and Identification:**
    - What would you do if you were in Alex's situation?
    - Can you relate to Alex's feelings about seeking help? Why or why not?
2. **Barriers to Seeking Help:**
    - What do you think are the things that get in the way or stop young men like Alex from seeking help for physical health issues?
3. **Facilitators to Seeking Help:**
    - What might encourage someone like Alex to seek help for his back pain?
    - What changes can health services make so that they are easier for young men in similar situations to Alex to use of them?
    - How can health services address the concerns and barriers that young men face when it comes to seeking help?
4. **Health Promotion Efforts:**

- What kind of messages do you think would be effective in encouraging young men to seek help for physical health issues?
- How do you prefer to receive health-related information (e.g., social media, websites, community events)?

5. **Miracle Question:**
    - What would the ideal scenario be if it was up to you? If you could give a tip to policymakers and healthcare professionals, what would it be? How would you do it if you were in charge of healthcare?
6. **Comparison with Mental Health:**
    - Do you think your responses or feelings would be different if this was about a mental health issue, like depression or anxiety, instead of a physical health issue? If so, how?
7. **Final Thoughts:**
    - Is there anything else you would like to share about your experiences or opinions on this topic?

CLOSING

1. **Review:**
    - Check if every topic has been reviewed (interviewer and participant).
    - Announce the closing of the interview.
    - Verify information and ask for any missing details.
2. **Thank You and Questions:**
    - Thank the participant for their time and contribution.
    - Ask if they have any questions about the research or the interview process.

Appendix D.2 – The University of Sydney HREC Approval Certificate

THE UNIVERSITY OF SYDNEY

RESEARCH INTEGRITY
& ETHICS ADMINISTRATION

HUMAN RESEARCH ETHICS APPROVAL

The University of Sydney confirms that this project meets the requirements of the National Statement on Ethical Conduct in Human Research.

Project identifier:	2024/HE001014
Project title:	Facilitators of Health Service Engagement for Young Australian Men
Application version:	1.03
Chief Investigator:	Professor Philayrath Phongsavan
Project team:	Professor Benjamin Smith Dr James Kite Mr Robert Palmer
Project start date:	11 Sep 2024
Project end date:	10 Sep 2028
Date of issue:	Friday, 13 December, 2024

Project summary

Many young men don't seek help when they need it. This research project aims to understand how young Australian men can be encouraged to engage with health services for both mental and physical health. We will talk to a diverse group of young men to learn about their experiences and what makes it easier or harder for them to access health services. By doing this, we hope to find ways to improve health services and make them more appealing and accessible to young men. The goal is to support better health outcomes for young men and contribute to the Australian Government's efforts to improve men's health.

Summary of amendments

Two additional recruitment approaches will be used to broaden participant reach for the study on young men's health service engagement. First, companies and community organisations that work with young men will be contacted to distribute the study flyer to their employees or participants. Second, PureProfile, a data and insights company, will be used to advertise the study to young men within the target age range via a research opportunity notification (or 'feed') distributed to members of their research panel. These additional recruitment channels aim to increase visibility and do not alter any other aspect of the study. Advertisement materials will remain the same as approved, the survey will continue to be hosted on the Qualtrics page created by the research team for this study, and all procedures for consent, participant information, study completion, data storage, handling, and gift card distribution will continue as outlined in the original study protocol.

Documents approved

Document type	File name	Document version	Application version
Application Attachment	Project Description.pdf	3	1.02
Recruitment or advertising material	Recruitment Email.pdf	2	1.03

Appendix D.3 – COREQ checklist

No. Item	Description	Section #
Domain 1: Research team and reflexivity		
Personal Characteristics		
1. Interviewer/facilitator	Which author/s conducted the interview or focus group?	Procedure
2. Credentials	What were the researcher's credentials?	Researcher characteristics and reflexivity
3. Occupation	What was their occupation at the time of the study?	Researcher characteristics and reflexivity
4. Gender	Was the researcher male or female?	Researcher characteristics and reflexivity
5. Experience and training	What experience or training did the researcher have?	Researcher characteristics and reflexivity
Relationship with participants		
6. Relationship established	Was a relationship established prior to study commencement?	Procedure
7. Participant knowledge of the interviewer	What did the participants know about the researcher?	Procedure

8. Interviewer characteristics	What characteristics were reported about the interviewer/facilitator?	Procedure and Researcher characteristics and reflexivity
Domain 2: study design		
Theoretical framework		
9. Methodological orientation and Theory	What methodological orientation was stated to underpin the study?	Study design
Participant selection		
10. Sampling	How were participants selected?	Participants and recruitment
11. Method of approach	How were participants approached?	Participants and recruitment
12. Sample size	How many participants were in the study?	Description of participants, Table 1 and Supplementary File 3
13. Non-participation	How many people refused to participate or dropped out? Reasons?	Participants and recruitment
Setting		
14. Setting of data collection	Where was the data collected?	Procedure
15. Presence of non-participants	Was anyone else present besides the participants and researchers?	Procedure

16. Description of sample	What are the important characteristics of the sample?	Description of participants, Table 1 and Supplementary File 3
Data collection		
17. Interview guide	Were questions, prompts, guides provided by the authors? Was it pilot tested?	Procedure and Supplementary File 1
18. Repeat interviews	Were repeat interviews carried out? If yes, how many?	Procedure
19. Audio/visual recording	Did the research use audio or visual recording to collect the data?	Data analysis
20. Field notes	Were field notes made during and/or after the interview or focus group?	Researcher characteristics and reflexivity
21. Duration	What was the duration of the interviews?	Procedure
22. Data saturation	Was data saturation discussed?	Participants and recruitment
23. Transcripts returned	Were transcripts returned to participants for comment and/or correction?	Not applicable
Domain 3: analysis and findings		
Data analysis		
24. Number of data coders	How many data coders coded the data?	Data analysis

25. Description of the coding tree	Did authors provide a description of the coding tree?	Data analysis
26. Derivation of themes	Were themes identified in advance or derived from the data?	Data analysis
27. Software	What software, if applicable, was used to manage the data?	Data analysis
28. Participant checking	Did participants provide feedback on the findings?	Not applicable
Reporting		
29. Quotations presented	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified?	Results
30. Data and findings consistent	Was there consistency between the data presented and the findings?	Results
31. Clarity of major themes	Were major themes clearly presented in the findings?	Results
32. Clarity of minor themes	Is there a description of diverse cases or discussion of minor themes?	Results

This COREQ Checklist is developed from: Allison Tong, Peter Sainsbury, Jonathan Craig, Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups, International Journal for Quality in Health Care, Volume 19, Issue 6, December 2007, Pages 349–357, https://doi.org/10.1093/intqhc/mzm042

Appendix D.4 – Participant demographic characteristics (*n* = 29)

ID	Age (years)	Residential location	Occupation	Education	Recent healthcare engagement	Interview focus
1	23	Rural	Machinery operator	Year 12	None	Mental health
2	24	Urban	Unemployed	University	Physical and mental	Physical health
3	29	Urban	Labourer	Year 12	None	Mental health
4	24	Urban	Professional	University	Physical only	Physical health
5	30	Urban	Professional	University	Physical only	Mental health
6	25	Urban	Healthcare worker	University	Physical only	Physical health
7	28	Urban	Labourer	Vocational	Physical only	Mental health
8	26	Urban	Professional	University	None	Physical health
9	30	Urban	Administrative worker	University	Physical only	Mental health
10	29	Urban	Professional	University	None	Physical health
11	30	Urban	Service industry worker	University	None	Mental health
12	19	Urban	Unemployed	University	Physical only	Physical health
13	29	Urban	Professional	University	Mental and physical	Mental health
14	27	Urban	Labourer	University	Physical only	Physical health
15	27	Rural	Service industry worker	University	Physical only	Mental health
16	30	Urban	Professional	University	None	Physical health
17	29	Urban	Service industry worker	Vocational	Physical only	Mental health
18	30	Urban	Professional	University	Mental only	Physical health
19	25	Urban	Machinery operator	Vocational	None	Mental health
20	23	Rural	Student	University	Physical only	Physical health
21	30	Urban	Healthcare worker	Vocational	Mental and physical	Mental health
22	29	Rural	Service industry worker	Year 12	None	Mental health
23	26	Rural	Professional	Year 12	None	Physical health
24	22	Urban	Unemployed	Vocational	None	Mental health
25	30	Rural	Unemployed	Year 12	Mental and physical	Physical health
26	25	Urban	Professional	University	Physical only	Physical health
27	22	Urban	Service industry worker	Vocational	Physical only	Mental health
28	25	Rural	Unemployed	Year 12	Physical only	Physical health
29	21	Urban	Unemployed	Year 12	None	Mental health

Note. * Participants were asked whether they had attended a healthcare provider in the past 12 months.