

Review Article

Effectiveness of Behavioural Health Education Interventions in Improving Mental Health Help-Seeking Among Adult Men: A Systematic Review and Meta-Analysis

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ABSTRACT

Background: Adult men experience a disproportionate burden of mental health morbidity yet consistently demonstrate lower rates of help-seeking compared with women. Barriers such as stigma, limited mental health literacy, and masculine norms often prevent early recognition of distress and engagement with support, contributing to prolonged difficulties and poorer outcomes. Behavioural health education interventions have been proposed as a means to address these upstream barriers.

Objective: This systematic review and meta-analysis evaluated the effectiveness of behavioural health education interventions in improving mental health help-seeking among adult men.

Methods: Following PRISMA 2020, we searched PubMed, ScienceDirect, and Dimensions AI for studies published from 2015 to 2025 for intervention studies with adult men aged ≥ 18 years. Ten studies were included and synthesised narratively. Risk of bias was assessed using RoB 2 and ROBINS-I. A random-effects meta-analysis was conducted on three RCTs reporting help-seeking intentions using the Generic Inverse Variance method, with effects expressed as Standardised Mean Differences (SMD) and 95% CIs.

Findings: Narratively, interventions most consistently improved mental health awareness, stigma reduction, emotional openness, and help-seeking intentions. Evidence of direct behavioural change was limited. The pooled meta-analysis showed no statistically significant effect on help-seeking intentions (SMD = 0.02, 95% CI -0.19 to 0.24; $p = 0.85$; $I^2 = 79\%$). Sensitivity analysis using a fixed-effect model yielded a small significant effect (SMD = 0.08, 95% CI 0.00 to 0.17).

Conclusion: Behavioural health education interventions may improve psychological factors associated with help-seeking among adult men, particularly awareness, stigma-related outcomes, and readiness to seek support. However, the meta-analysis found no statistically significant pooled effect on help-seeking intentions, with substantial heterogeneity indicating variation according to intervention type, population characteristics, and delivery context.

Keywords: Mental Health; Help-Seeking; Adult Men; Behavioural Health Education; Stigma Reduction

Introduction

Mental health disorders remain a major global public health challenge, contributing to disability, reduced quality of life, impaired social functioning, occupational difficulties, and premature mortality. Despite the widespread occurrence of conditions such as depression, anxiety disorders, substance-related disorders, and suicidal distress, many individuals experiencing psychological difficulties do not seek timely support. This gap is particularly evident among adult men, who consistently demonstrate lower levels of mental health help-seeking compared with women. Men may delay disclosure of distress, minimise symptoms, rely on self-management, or avoid professional support because seeking help may be perceived as inconsistent with social expectations surrounding masculinity, emotional control, and self-reliance [1, 2]. These patterns may contribute to prolonged psychological difficulties and increased vulnerability to adverse mental health outcomes.

Mental health help-seeking is a progressive process involving recognition of psychological difficulties, understanding the need for support, developing positive attitudes towards assistance, overcoming personal and social barriers, and engaging with informal or professional sources of care. Although awareness and willingness to seek help are important steps, they do not always result in actual support-seeking behaviour because stigma, accessibility challenges, confidentiality concerns, previous healthcare experiences, and social expectations may influence decisions [3, 4]. Therefore, improving men's engagement with mental health support requires interventions that address both individual beliefs and broader social influences.

Several factors contribute to men's reduced engagement with mental health support, including limited mental health literacy, stigma, masculine norms, cultural expectations, and concerns about judgement. Limited understanding of psychological symptoms may prevent men from recognising difficulties or knowing when assistance is required, while stigma may discourage disclosure because of fears of negative evaluation. However, masculinity does not uniformly prevent help-seeking; instead, specific social expectations and personal experiences influence whether men view support-seeking as acceptable and beneficial [5, 6]. Consequently, interventions that use relatable communication, peer experiences, trusted messengers, and practical information may improve men's willingness to engage with mental health support [7-9].

Behavioural health education interventions have increasingly been recognised as an approach for

improving men's mental health help-seeking. These interventions aim to increase mental health knowledge, improve symptom recognition, reduce stigma, strengthen confidence in seeking assistance, and encourage engagement with available support systems. They differ from therapeutic interventions because their primary focus is modifying knowledge, beliefs, attitudes, and social influences that shape decisions about seeking help. Such approaches have been delivered through psychoeducation, workplace programmes, peer-led initiatives, digital platforms, community campaigns, media interventions, and combined educational strategies [5, 10].

The importance of these interventions lies in their ability to address barriers occurring before professional support is accessed. A man may need to recognise psychological distress, reconsider beliefs about mental health, develop confidence in discussing difficulties, and understand available support options before seeking assistance. However, improvements in knowledge, attitudes, or intentions may not always translate into actual help-seeking behaviour. Therefore, evaluating behavioural health education requires consideration of both psychological outcomes, such as literacy, stigma, and readiness, and behavioural outcomes, including informal or professional support engagement.

The effectiveness of behavioural health education interventions may also depend on delivery approach and intervention context. Digital programmes may provide privacy and accessibility, workplace interventions can reach men in settings where mental health discussions may be limited, and peer-based approaches may increase trust through shared experiences. Media-based interventions can challenge social narratives surrounding masculinity and emotional expression. However, intervention outcomes may vary according to cultural relevance, intensity, duration, accessibility of support pathways, and the extent to which programmes are tailored to men's experiences [4, 10].

Although previous research has examined men's mental health literacy, stigma, masculinity, digital interventions, and awareness campaigns, the evidence remains fragmented. Existing studies have assessed different outcomes, including help-seeking attitudes, intentions, emotional openness, resource engagement, and professional support-seeking behaviour, using varied intervention approaches and measurement instruments. Consequently, uncertainty remains regarding the overall effectiveness of behavioural health education interventions in improving men's willingness to seek mental health

support. A quantitative synthesis of available evidence is therefore needed to estimate the overall magnitude of intervention effects, examine consistency across studies, and provide a clearer understanding of whether behavioural health education interventions produce measurable improvements in help-seeking outcomes among adult men.

Meta-analysis provides an opportunity to combine findings from comparable intervention studies, increase statistical precision, and generate an overall estimate of intervention effectiveness. This approach is particularly useful in behavioural health research where individual studies may have limited sample sizes and may report varying effect estimates.

Therefore, this systematic review and meta-analysis synthesised evidence on the effectiveness of

behavioural health education interventions in improving mental health help-seeking among adult men. The review examined intervention characteristics, delivery approaches, target populations, and outcomes related to mental health literacy, stigma reduction, help-seeking attitudes, intentions, confidence, informal support-seeking, and engagement with professional mental health services. Where sufficient quantitative data were available, a meta-analysis was conducted to estimate the pooled effect of behavioural health education interventions on help-seeking intentions among adult men. By examining different stages of the help-seeking process, this review provides insight into how behavioural health education interventions can support improved engagement with mental health assistance among adult men.

Methodology

Review Design and Reporting Framework

This study was conducted as a systematic review and meta-analysis to evaluate the effectiveness of behavioural health education interventions in improving mental health help-seeking among adult men. The review was reported according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines to ensure transparent reporting of the identification, selection, extraction, appraisal, and synthesis of evidence [11]. Due to variations in intervention approaches, populations, settings, and reported outcomes, findings were synthesised through narrative synthesis, with meta-analysis performed where studies reported sufficiently comparable quantitative outcomes.

The review examined different stages of the mental health help-seeking process, including recognition of mental health difficulties, stigma reduction, help-seeking attitudes, intentions, confidence, informal support-seeking, and engagement with professional mental health services. A review protocol was not prospectively registered in a public database. However, the eligibility criteria, search strategy, study selection procedures, risk-of-bias assessment methods, and synthesis approaches were predefined and applied consistently.

Eligibility Criteria

Eligibility criteria were developed using the Population, Intervention, Comparator, Outcome, and Study Design (PICOS) framework [12].

The population included adult men aged 18 years and above. Studies involving exclusively male participants were eligible, while studies involving mixed-gender populations were included only where male-specific findings were separately reported or could be extracted. No restrictions were applied

regarding geographical location, ethnicity, occupation, socioeconomic status, or cultural background.

Eligible interventions were behavioural health education interventions designed to improve mental health help-seeking. These included psychoeducation, mental health literacy programmes, stigma reduction interventions, workplace mental health education, peer-led programmes, digital mental health education, media-based campaigns, and interventions combining multiple educational components. Studies were eligible when the intervention contained an identifiable educational element intended to influence mental health knowledge, beliefs, attitudes, confidence, intentions, or behaviours related to seeking support.

Interventions focused exclusively on psychological treatment, pharmacological management, clinical therapy without an educational component, screening alone, or general health education unrelated to mental health were excluded.

Eligible outcomes included mental health help-seeking attitudes, intentions, willingness to seek support, confidence in accessing care, informal support-seeking, referral engagement, professional mental health contact, and treatment initiation. Secondary outcomes included mental health literacy, stigma, emotional openness, perceived barriers, and beliefs about mental health care.

The review included original research articles (randomised controlled trials, cluster randomised trials, controlled quasi-experimental studies, before-and-after intervention evaluations, and feasibility intervention studies). Reviews, protocols, editorials, commentaries, qualitative studies without intervention evaluation, and observational studies without an intervention component were excluded. Studies published between January 2015 and December 2025 were considered eligible.

Information Sources and Search Strategy

A comprehensive literature search was conducted across databases covering mental health, behavioural science, medicine, public health, and social sciences on May 17, 2026. Although the search was conducted in May 2026, eligibility was restricted to studies published between January 2015 and December 2025 because the review protocol defined the intervention evidence period as the preceding ten-year publication window. The databases searched included PubMed, ScienceDirect, and Dimensions AI.

The search strategy combined terms relating to four main concepts: mental health, adult men, behavioural health education interventions, and help-seeking outcomes. Search terms included combinations of title and abstract keywords. Reference lists of included studies and relevant reviews were also

screened to identify additional eligible studies. The full search strings adopted in this study are contained in the Supplement file.

Study Selection Process

All retrieved records were imported into Zotero reference management software, where duplicates were removed through automated and manual processes. Titles and abstracts were screened against the predefined eligibility criteria, followed by full-text assessment of potentially eligible studies.

Two reviewers independently conducted screening and resolved disagreements through discussion. Where consensus could not be achieved, a third reviewer was consulted. The study selection process was documented using a PRISMA 2020 flow diagram (Figure 1).

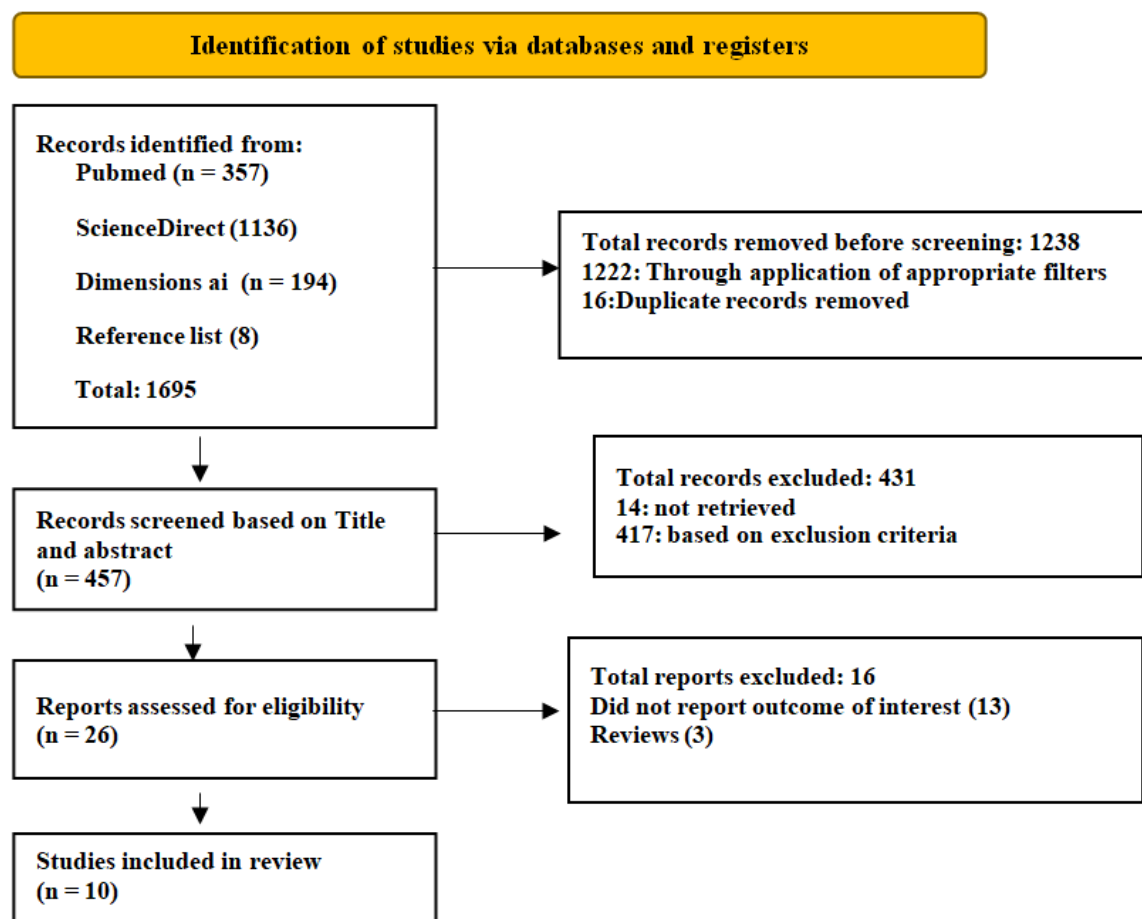


Figure 1: Preferred Reporting Items for Systematic reviews and Meta-Analysis (PRISMA) flow diagram

Data Extraction

Data extraction was conducted using a standardised form developed for this review. Extracted data were organised into two categories.

The first category captured characteristics of included studies. Data extracted under this category included:

- Study, country, and design;
- Participant characteristics;
- Intervention and comparator conditions;
- Follow-up period;
- Help-seeking stage assessed;
- Outcomes assessed;
- Main findings.

The second category captured quantitative data for meta-analysis. For studies reporting comparable continuous outcomes related to help-seeking intentions, data were extracted on the outcome measure, reported effect estimate, standardised mean difference (SMD), confidence intervals, and sample sizes. The quantitative synthesis focused on help-seeking intentions because intention represents an important stage between recognition of mental health difficulties and subsequent support-seeking behaviour. Improvements in intention may indicate increased readiness to consider or pursue mental health assistance, particularly among men who may experience psychological and social barriers to accessing care.

Quality Assessment

Methodological quality was assessed using design-appropriate risk-of-bias tools. Randomised controlled trials were assessed using the revised Cochrane Risk of Bias 2 (RoB 2) tool [13], while non-randomised intervention studies were assessed using the Risk Of Bias In Non-randomized Studies of Interventions (ROBINS-I) tool [14]. Two reviewers independently completed the assessments, with disagreements resolved through discussion.

Data Synthesis and Meta-analysis

Findings were synthesised using narrative synthesis and meta-analysis where sufficient quantitative information was available. Narrative synthesis was conducted by grouping studies according to intervention characteristics, delivery approaches, target populations, assessed help-seeking stages, and reported outcomes.

A meta-analysis was conducted to estimate the effect of behavioural health education interventions on mental health help-seeking intentions among adult men. Help-seeking intention was selected as the quantitative outcome because it reflects an important psychological readiness stage that precedes actual support-seeking behaviour. Although intention does not confirm subsequent service utilisation, increased willingness to seek assistance represents a meaningful indicator of reduced psychological barriers and improved engagement with mental health support.

The pooled effect measure was expressed as the Standardised Mean Difference (SMD) with 95% confidence intervals. SMD was selected because it allows synthesis of continuous outcomes assessing help-seeking intentions across studies while accounting for differences in measurement variability [15]. SMD estimates were extracted directly from the included studies.

The meta-analysis was conducted using the Generic Inverse Variance method in Review Manager (RevMan) version 5.4.1 because the included studies reported standardised effect estimates with confidence intervals rather than complete summary statistics required for conventional continuous outcome analysis [16]. Where standard errors were not directly reported, they were calculated from the reported 95% confidence intervals using: $SE = (Upper\ CI - Lower\ CI) / 3.92$; where 3.92 represents twice the critical value of 1.96 for a 95% confidence interval.

A random-effects model was applied because the included interventions differed in delivery format [17], including documentary-based interventions, digital media interventions, and online psychoeducational programmes. This model accounts for potential variation in true intervention effects across different intervention approaches and contexts.

Statistical heterogeneity was assessed using the Chi-square test and the I^2 statistic. A sensitivity analysis was performed by repeating the meta-analysis using a fixed-effect model to examine whether the pooled estimate remained consistent under an alternative assumption that all studies estimated a common intervention effect [18].

Ethical Considerations

This review used data from previously published studies and did not involve direct contact with human participants or access to identifiable personal information. Therefore, ethical approval and informed consent were not required. Ethical standards were maintained through accurate citation of original studies, transparent reporting of methods, objective interpretation of findings, and acknowledgement of study limitations.

Results

Overview of included studies

A total of ten studies were included in this study, comprising seven randomised controlled trials and three non-randomised intervention evaluations. The studies were conducted across different geographical settings, including the United States, Australia, Canada, the United Kingdom, and Belgium, reflecting diverse social and cultural contexts in which

behavioural health education interventions have been implemented among adult men. The included studies involved a range of male populations, including university students, construction workers, refugee communities, culturally specific groups, and general adult male populations exposed to community and digital mental health campaigns.

The interventions varied considerably in their format, intensity, delivery method, and theoretical approach. Some interventions used direct educational approaches, including psychoeducation, motivational interviewing, acceptance and commitment training, and stigma-reduction programmes. Others used broader communication strategies, such as documentaries, online campaigns, digital platforms, public service announcements, and media-based narratives designed to challenge negative beliefs about masculinity, emotional expression, and mental health support. Several interventions incorporated male-responsive approaches by using relatable language, peer narratives, culturally adapted content, anonymous engagement, or strength-based messages to improve acceptability among men.

The outcomes assessed across studies reflected different stages of the mental health help-seeking process. Some studies focused on early outcomes, including mental health literacy, stigma, emotional openness, attitudes towards professional support, and intentions to seek help. Other studies examined behavioural outcomes, including disclosure to informal support networks, contact with new sources of help, engagement with online mental health resources, and professional help-seeking behaviours. This variation reflects the multidimensional nature of help-seeking,

where changes in awareness, beliefs, and willingness may represent important steps towards later engagement with mental health support.

Follow-up periods ranged from immediate post-intervention assessment to six months after intervention delivery. Most studies relied on self-reported outcomes, although some examined behavioural indicators such as reported contact with support sources or engagement with digital resources. The diversity of intervention designs, participant characteristics, outcome measures, and follow-up periods required a combined approach involving narrative synthesis and targeted quantitative synthesis. Three studies reporting comparable continuous measures of help-seeking intentions were included in a meta-analysis to estimate the pooled effect of behavioural health education interventions [19, 21, 27].

Table 1 presents the characteristics of the ten included studies, including study design, participant characteristics, intervention details, comparator conditions, follow-up periods, outcomes assessed, and main findings. The table categorises outcomes according to their position within the help-seeking pathway, distinguishing between changes in psychological readiness and observable engagement with mental health support.

Table 1. Characteristics of included studies

Study, country and design	Participants	Intervention and comparator	Follow-up	Help-seeking stage assessed	Outcomes assessed	Overall risk-of-bias judgement	Main findings
Syzdek et al. (2016) [19], USA. Pilot RCT	35 college men with internalising symptoms and no recent help-seeking	Single-session gender-based motivational interviewing with personalised feedback; compared with no-treatment control	2 months	Transition from psychological recognition to support-seeking behaviour	Professional and informal help-seeking	Some concerns	The intervention increased help-seeking from parents and showed a favourable trend towards professional help-seeking. The small sample size limited the precision of findings.
King et al. (2018) [20], Australia. Double-blind RCT	354 adult men	Man Up documentary presenting male narratives on masculinity, mental health, and suicide; compared with control documentary	4 weeks	Psychological readiness and intention to seek support	Help-seeking intentions measured using the General Help-Seeking Questionnaire (GHSQ)	Low risk	The intervention significantly increased intentions to seek help compared with control. Findings demonstrated improvement in willingness to seek support but did not directly measure service engagement.
Milner et al. (2018) [21], Australia. Two-arm RCT	682 male construction workers	Six-week smartphone-based stigma reduction programme;	6 weeks	Reduction of barriers affecting willingness to seek help	Depression self-stigma and help-seeking inhibition	Some concerns	No significant difference was observed between groups for stigma outcomes. Both groups showed reductions in

		compared with wait-list control					stigma, suggesting limited additional intervention effects.
Nickerson et al. (2020) [22], Australia. Two-arm RCT	103 refugee men with post-traumatic stress symptoms	<i>Tell Your Story</i> : online psychoeducation, social-contact narratives, and cognitive reappraisal; compared with wait-list control	1 month post-intervention	Movement from readiness towards actual help-seeking behaviour	Stigma, help-seeking intentions, and help-seeking behaviour	Some concerns	The intervention reduced increases in help-seeking self-stigma and increased the likelihood of seeking help from a new source.
Reidenberg and Berman (2022) [23], USA. Campaign evaluation	Adult male audience exposed to suicide prevention messaging	Male-focused suicide prevention public service announcement; compared with printed flyer	1 month	Awareness and initial engagement with support resources	Website visits and mental health resource engagement	Serious risk	The campaign generated some online resource engagement, although the effect compared with the flyer could not be confirmed because of methodological limitations.
Fung et al. (2022) [24], Canada. Randomised multi-group intervention	606 Asian Canadian men	Acceptance and commitment training, contact-based empowerment education, combined intervention, and psychoeducation comparator	6 months	Psychological readiness and reduction of barriers to help-seeking	Mental health stigma, empowerment, and psychological flexibility	Some concerns	Stigma was reduced and empowerment increased across intervention groups. No significant differences were found between intervention conditions.
Sagar-Ouriaghli et al. (2023) [25], UK. Three feasibility studies	24 male university students	Men-Tality, Psychological Strength, and Man Cave gender-sensitive interventions; no parallel control	Up to 4 weeks	Acceptability, readiness, and attitudes towards support	Help-seeking attitudes, behaviour, wellbeing, and acceptability	Serious risk	The interventions were acceptable to participants. Significant improvements in help-seeking or wellbeing were not demonstrated, although informal formats reached men with greater barriers to support.
Gilgoff et al. (2023) [26], USA. Secondary analysis of RCT	354 men aged 25–64 years at depression or suicide risk	<i>Man Therapy</i> plus Healthy Men Michigan website; compared with Healthy Men Michigan alone	12 weeks	Professional help-seeking behaviour	Professional and non-professional help-seeking	Some concerns	The intervention was associated with increased professional help-seeking. No significant effect was observed for non-professional help-seeking.
Stas et al. (2024) [27], Belgium. Pre-post evaluation	250 adult men from Flanders	Online male-targeted suicide prevention campaign; no control group	Immediate post-intervention	Psychological readiness and willingness to seek support	Help-seeking intention, emotional openness, and psychological outcomes	Serious risk	The intervention produced small improvements in help-seeking intention and emotional openness. Lack of control limited causal interpretation.
Nicholas et al. (2025) [28], Australia. Single-blind RCT	476 adult men	<i>Boys Do Cry</i> music video promoting emotional expression and help-seeking; compared with similar video	1 week and later follow-up	Help-seeking intention and reported support engagement	Help-seeking intention and reported health-service use	Low risk	Help-seeking intentions increased in both groups, but no significant difference was found between intervention and comparison groups.

Quality Appraisal

The methodological quality of the included studies was assessed using design-specific risk-of-bias tools. Randomised controlled trials were evaluated using the revised Cochrane Risk of Bias 2 (RoB 2) tool, while non-randomised intervention studies were assessed using the Risk Of Bias In Non-randomized Studies of Interventions (ROBINS-I) tool. Domain-level assessments and overall judgements are presented in the Supplement file.

The ten studies showed variation in methodological quality. Among the seven randomised controlled trials, two were judged to have a low overall risk of bias, while five raised some concerns. These concerns were mainly related to self-reported outcomes, missing data, secondary analyses, and limited sample sizes. No randomised trial was judged to have a high risk of bias.

King et al. (2018) [20] and Nicholas et al. (2025) [28] provided the strongest evidence, using randomised designs with appropriate comparison groups and standardised measures of help-seeking intentions. However, their outcomes primarily reflected psychological readiness to seek support rather than confirmed engagement with mental health services.

Studies assessing observable help-seeking behaviours, including Syzdek et al. (2016) [19], Nickerson et al. (2020) [22], and Gilgoff et al. (2023) [26], provided more direct evidence of behavioural change but were limited by factors such as self-reported outcomes, small samples, secondary analyses, and lack of participant blinding.

The three non-randomised evaluations demonstrated greater risk of bias due to the absence of randomisation, limited control conditions, possible participant selection effects, and difficulty separating intervention effects from external influences [23, 25, 27]. Nevertheless, these studies contributed useful evidence regarding intervention feasibility, acceptability, and potential mechanisms influencing help-seeking.

Narrative synthesis

The ten included studies demonstrated that behavioural health education interventions influence different stages of mental health help-seeking among adult men. While quantitative synthesis was possible for help-seeking intentions among three randomised controlled trials, the remaining studies were synthesised narratively because of differences in outcomes, measurement approaches, and intervention characteristics. However, the evidence did not show a uniform effect across all outcomes. The interventions differed substantially in their delivery methods, intensity, theoretical foundations, target populations, and outcome measures. Therefore, findings were

synthesised according to three interconnected levels of help-seeking outcomes: changes in knowledge and social perceptions of mental health, development of psychological readiness to seek support, and observable help-seeking behaviours involving engagement with informal or professional support.

The included studies suggest that behavioural health education interventions may contribute to improved help-seeking by addressing factors that commonly prevent men from accessing support, including stigma, limited mental health knowledge, discomfort with emotional disclosure, and concerns regarding masculinity and self-reliance. However, improvements in attitudes and intentions were more frequently reported than confirmed behavioural changes, indicating that movement from willingness to actual support-seeking remains an important challenge.

Behavioural Health Education as a Pathway to Improved Mental Health Awareness and Understanding

Several studies demonstrated that behavioural health education interventions improved factors that support recognition and understanding of mental health difficulties among adult men. These interventions commonly used psychoeducation, personal narratives, digital information, and male-responsive communication strategies to challenge misconceptions about mental health and increase awareness of available support.

King et al. (2018) [20] examined the impact of the Man Up documentary, which presented personal accounts of masculinity, emotional expression, suicide prevention, and mental health support. The intervention increased men's intentions to seek help compared with the comparison documentary, suggesting that educational narratives addressing male experiences can influence perceptions about the acceptability of seeking support.

Similarly, Nicholas et al. (2025) [28] evaluated the Boys Do Cry music video intervention, which encouraged emotional expression and help-seeking among Australian men. Although both intervention and comparison groups showed increased help-seeking intentions, the intervention did not produce a statistically significant difference between groups. This finding indicates that brief educational exposure may influence general readiness to consider support but may have limited effects when compared with another emotionally engaging control condition.

Other interventions used more structured educational approaches. Fung et al. (2022) [24] found that stigma reduction and empowerment-based interventions improved psychological factors related to mental health acceptance among Asian Canadian men.

Although the intervention did not directly assess professional service use, reductions in stigma and improvements in empowerment represent important conditions that may support later help-seeking.

Reducing Stigma and Addressing Barriers to Men's Help-Seeking

Stigma was a common target across several interventions because negative beliefs about mental health remain a major barrier to men seeking assistance. The included studies indicate that behavioural health education can reduce some forms of stigma, although the strength of effects varied.

Milner et al. (2018) [21] evaluated a smartphone-based stigma reduction intervention among male construction workers. Despite the intervention's strong focus on reducing self-blame, shame, and help-seeking inhibition, the study did not identify statistically significant differences between intervention and wait-list groups. This suggests that brief digital stigma-reduction programmes may require additional components or longer exposure periods to produce measurable changes.

Nickerson et al. (2020) [22] provided stronger evidence from a randomised controlled trial among refugee men with post-traumatic stress symptoms. The Tell Your Story intervention combined psychoeducation, social-contact narratives, and cognitive reappraisal. The intervention reduced help-seeking self-stigma and increased the likelihood that participants sought help from a new source compared with the control group.

Fung et al. (2022) [24] similarly reported improvements in stigma-related outcomes among Asian Canadian men following acceptance and commitment therapy, contact-based empowerment education, and psychoeducation approaches. However, these findings mainly demonstrate changes in psychological barriers rather than direct evidence of professional service engagement.

Gender-Responsive Communication and Male-Focused Intervention Approaches

Several studies indicated that interventions designed around men's social experiences and communication preferences may improve acceptability and engagement. Male-focused approaches commonly addressed masculinity, emotional expression, self-reliance, and concerns about judgement.

The Man Up documentary evaluated by King et al. (2018) [20] used male narratives and public health messaging to challenge restrictive beliefs surrounding masculinity. The intervention demonstrated that culturally relevant storytelling can improve willingness to seek assistance.

Sagar-Ouriaghli et al. (2023) [25] examined three gender-sensitive interventions for male university students. These included formal psychoeducation, strength-based mental health education, and an informal drop-in format. The interventions were acceptable to participants and demonstrated potential for improving engagement with mental health discussions. However, the feasibility design, absence of a control group, and small samples limited conclusions regarding effectiveness.

The findings suggest that interventions may be more acceptable when they avoid presenting help-seeking as a sign of weakness and instead frame support-seeking as a practical and constructive response to mental health difficulties.

Digital and Media-Based Behavioural Health Education Interventions

Digital interventions represented an important delivery approach across the included studies. Online programmes, smartphone applications, websites, documentaries, and media campaigns provided opportunities to reach men who may avoid traditional mental health services.

Nickerson et al. (2020) [22] demonstrated that an online psychoeducational intervention could improve help-seeking outcomes among refugee men by combining accessible information with social-contact narratives. Gilgoff et al. (2023) [26] also reported that Man Therapy, an online suicide prevention intervention incorporating education, humour, screening, and service navigation, was associated with increased professional help-seeking.

Reidenberg and Berman (2022) [23] examined a male-focused suicide prevention public service announcement and measured engagement with online resources. The study provided evidence that targeted messaging could generate interaction with mental health resources, although methodological limitations prevented firm conclusions regarding effectiveness compared with the alternative communication approach.

Stas et al. (2024) [27] evaluated an online suicide prevention campaign targeting men in Flanders. The intervention produced improvements in some help-seeking-related psychological outcomes, including emotional openness and willingness to seek support. However, the absence of a control group limited causal interpretation.

Overall, digital and media-based approaches appear promising for increasing reach and reducing barriers, but evidence of sustained behavioural change remains limited.

Movement from Psychological Readiness to Observable Help-Seeking Behaviour

A smaller number of studies examined whether behavioural health education interventions translated into actual help-seeking actions. These outcomes provide stronger evidence of behavioural change but were less frequently assessed.

Syzdek et al. (2016) [19] evaluated gender-based motivational interviewing among college men with internalising symptoms. The intervention increased help-seeking from parents and showed a positive trend towards professional help-seeking. However, the small sample size limited confidence in the findings.

Nickerson et al. (2020) [22] provided evidence that educational interventions can influence movement beyond attitudes and intentions. Participants receiving the intervention were more likely to seek help from a new source compared with controls, demonstrating behavioural change following intervention exposure.

Gilgoff et al. (2023) [26] reported that Man Therapy was associated with increased professional help-seeking among men. This finding provides some evidence that male-responsive online interventions combined with practical service navigation may assist men in moving from awareness towards accessing support.

Reidenberg and Berman (2022) [23] also examined a behavioural indicator through online resource engagement. However, website activity represents an intermediate outcome and does not necessarily confirm attendance at mental health services.

Influence of Intervention Context, Delivery Format, and Population Characteristics

The effectiveness of behavioural health education interventions appeared to depend on intervention context, population characteristics, and delivery methods. Interventions developed for specific male populations, including construction workers, university students, refugee men, and culturally defined groups, often incorporated communication strategies designed to address the social experiences of those groups.

Culturally adapted interventions, such as Nickerson et al. (2020) [22] among refugee men and Fung et al. (2022) [24] among Asian Canadian men, demonstrated the importance of considering language, identity, social context, and community expectations when designing mental health education programmes.

Workplace and community-based approaches may provide opportunities to reach men who are unlikely to seek mental health information independently. Digital interventions may also reduce barriers related to privacy and accessibility, although

they may require additional support pathways to encourage sustained engagement.

Overall Effectiveness of Behavioural Health Education Interventions

Across the included studies, behavioural health education interventions demonstrated the greatest consistency in improving psychological factors associated with help-seeking, including mental health awareness, stigma reduction, emotional openness, attitudes, and intentions. Evidence for direct behavioural outcomes, such as professional help-seeking or engagement with new support sources, was available from fewer studies but suggested that some interventions can support movement towards actual help-seeking.

The strongest evidence came from controlled trials, particularly those involving structured psychoeducation, male-responsive communication, and interventions that included practical pathways to support. However, differences in intervention design, outcome measurement, and methodological quality limit direct comparison across studies.

Overall, behavioural health education interventions appear to contribute to improved mental health help-seeking among adult men by addressing barriers at multiple stages of the help-seeking process. Further research using longer follow-up periods and objective measures of support engagement is needed to determine whether improvements in readiness consistently translate into sustained use of mental health services.

Meta-analysis of behavioural health education interventions on help-seeking intentions among adult men

Three randomised controlled trials involving adult men were included in the quantitative synthesis of help-seeking intentions. The included interventions consisted of a documentary-based intervention (Man Up), a music-based media intervention (Boys Do Cry), and an online psychoeducational intervention (Tell Your Story). Help-seeking intentions were assessed using continuous outcome measures, including the General Help-Seeking Questionnaire (GHSQ). Effect estimates were extracted as standardised mean differences (SMDs) with corresponding 95% confidence intervals. Table 2 presents the characteristics and effect estimates of studies included in the meta-analysis.

Table 2. Effect of behavioural health education interventions on help-seeking intentions among adult men

Study	Intervention	Comparator	Outcome measure	Sample size at follow-up	Effect estimate
King et al. (2018) [20]	<i>Man Up</i> documentary focusing on masculinity, emotional expression, mental health, and help-seeking	<i>Test Your Brain</i> documentary unrelated to mental health	General Help-Seeking Questionnaire (GHSQ)	Intervention: 169; Control: 168	Standardised Mean Difference (SMD) = 0.13 (95% CI 0.03 to 0.23); SE = 0.051
Nicholas et al. (2025) [28]	<i>Boys Do Cry</i> media intervention promoting emotional expression and mental health help-seeking	<i>Redesign My Brain</i> documentary	General Help-Seeking Questionnaire (GHSQ)	Intervention: 224; Control: 207	SMD = 0.14 (95% CI -0.04 to 0.33); SE = 0.094
Nickerson et al. (2020) [22]	<i>Tell Your Story</i> online psychoeducational intervention	Wait-list control	General Help-Seeking Questionnaire (GHSQ)	Intervention: 44; Control: 47	SMD = -0.27 (95% CI -0.51 to -0.03); SE = 0.122

Pooled effect estimate

A meta-analysis was conducted using a random-effects model because the included interventions differed in delivery format, including documentary-based communication, music-based media messaging, and online psychoeducation. The pooled effect estimate showed no statistically significant overall effect of behavioural health education interventions on help-seeking intentions among adult men. As shown in Figure 2, the pooled SMD was 0.02 (95% CI -0.19 to 0.24; $p = 0.85$).

Sensitivity analysis using a fixed-effect model produced a small statistically significant effect favouring intervention exposure (SMD = 0.08, 95% CI 0.00 to 0.17; $p = 0.04$). However, this difference between models should be interpreted cautiously because substantial heterogeneity was observed among the included studies. Fixed-effect models assume that all studies estimate one common underlying intervention effect, whereas the random-effects model accounts for variation in true effects across different populations, intervention approaches, and contexts.

Under conditions of substantial heterogeneity, fixed-effect models may give greater influence to larger

studies because weighting is largely determined by study precision. In this analysis, King et al. (2018) [20], which had the largest sample size, received substantial statistical weight under the fixed-effect model. Therefore, the statistically significant fixed-effect estimate may partly reflect the influence of larger studies and the assumption of a common effect across studies. Given the observed heterogeneity ($I^2 = 79\%$), the random-effects model was considered more appropriate as the primary analysis because it provides a more conservative estimate that recognises differences between interventions and study populations.

Although King et al. (2018) [20] and Nicholas et al. (2025) [28] demonstrated small positive effects favouring intervention exposure, Nickerson et al. (2020) [22] reported a negative effect estimate favouring the comparator group. The variation in effect directions and magnitude across studies contributed to the substantial heterogeneity and indicates that the impact of behavioural health education interventions may depend on intervention characteristics, target populations, and delivery contexts.

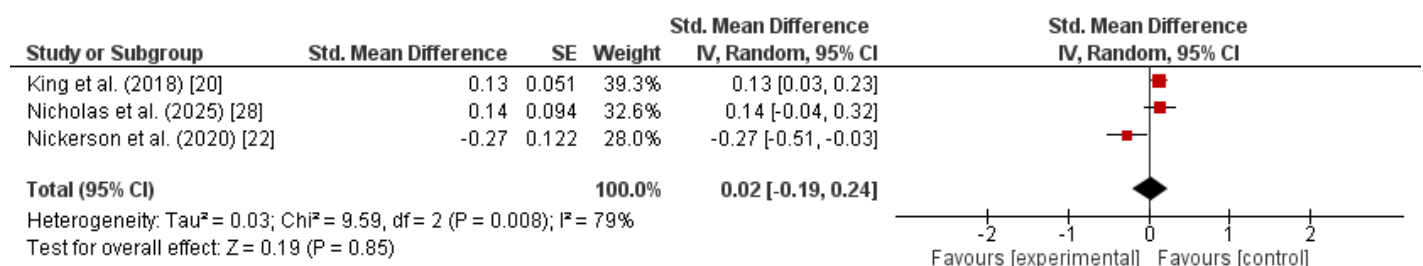


Figure 2: Forest plot from Random Effect Model showing the pooled effect of behavioural health education interventions on help-seeking intentions among adult men

Heterogeneity assessment

Statistical heterogeneity was substantial with $I^2=79\%$ ($\chi^2=9.59$, $df=2$, $p=0.008$).

This indicates considerable variability between study effect estimates beyond chance variation. The heterogeneity is likely related to differences in intervention design, delivery format, target populations, and contextual factors influencing men's responses to mental health messaging.

The observed heterogeneity may reflect several methodological and contextual differences across studies. King et al. (2018) [20] evaluated a documentary-based narrative intervention among general adult men, Nicholas et al. (2025) [28] used a music-based emotional expression intervention, while Nickerson et al. (2020) [22] assessed an online psychoeducational programme among refugee men with post-traumatic stress symptoms. These differences represent variation in intervention mechanisms, participant characteristics, baseline psychological needs, and outcome responses. Therefore, the random-effects model was selected because it assumes that intervention effects may differ across populations and settings instead of estimating one common effect size.

Sensitivity analysis

A sensitivity analysis was conducted by repeating the meta-analysis using a fixed-effect model to examine whether the pooled estimate was influenced by the choice of statistical model. Under the fixed-effect assumption as shown in Figure 3, the pooled effect estimate remained positive and favoured behavioural health education interventions, with a statistically significant effect observed (SMD = 0.08, 95% CI 0.00 to 0.17, $p = 0.04$). However, this finding differed from the primary random-effects analysis, which showed no statistically significant overall effect (SMD = 0.02, 95% CI -0.19 to 0.24, $p = 0.85$).

The difference between models is likely related to the substantial heterogeneity observed among studies ($I^2 = 79\%$, $\chi^2 = 9.59$, $p = 0.008$). Because the included interventions varied considerably in delivery format, including documentary-based messaging, media interventions, and online psychoeducation, the random-effects model was considered more appropriate for the primary analysis. The fixed-effect findings should therefore be interpreted cautiously, as they assume that all included studies estimate a single common intervention effect despite observed variability between studies.

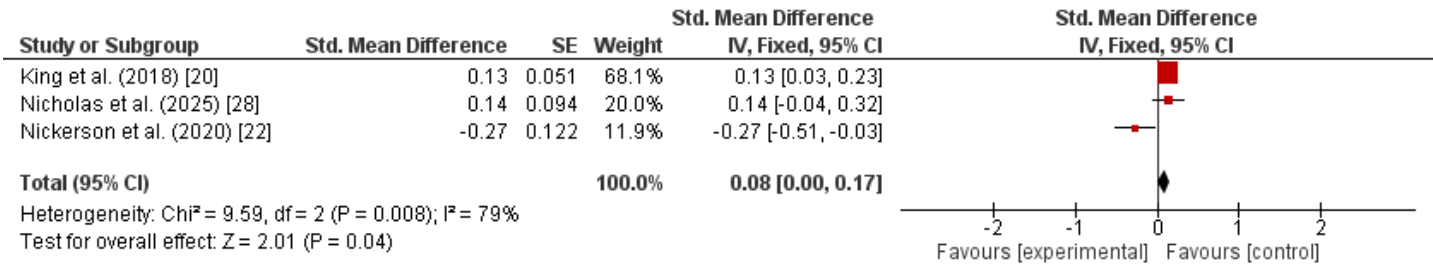


Figure 3: Forest plot from Fixed Effect Model showing the pooled effect of behavioural health education interventions on help-seeking intentions among adult men

Publication Bias Assessment

A funnel plot was generated to visually assess potential small-study effects (Figure 4). However, interpretation was limited because only three studies were included in the meta-analysis. According to established meta-analysis guidance, funnel plot asymmetry tests have limited reliability when fewer than ten studies are available.

The funnel plot showed some visual asymmetry, mainly due to the small number of included studies and variation in effect estimates. Therefore, publication bias cannot be reliably assessed, and the funnel plot should be interpreted only as a descriptive visual assessment rather than evidence of publication bias.

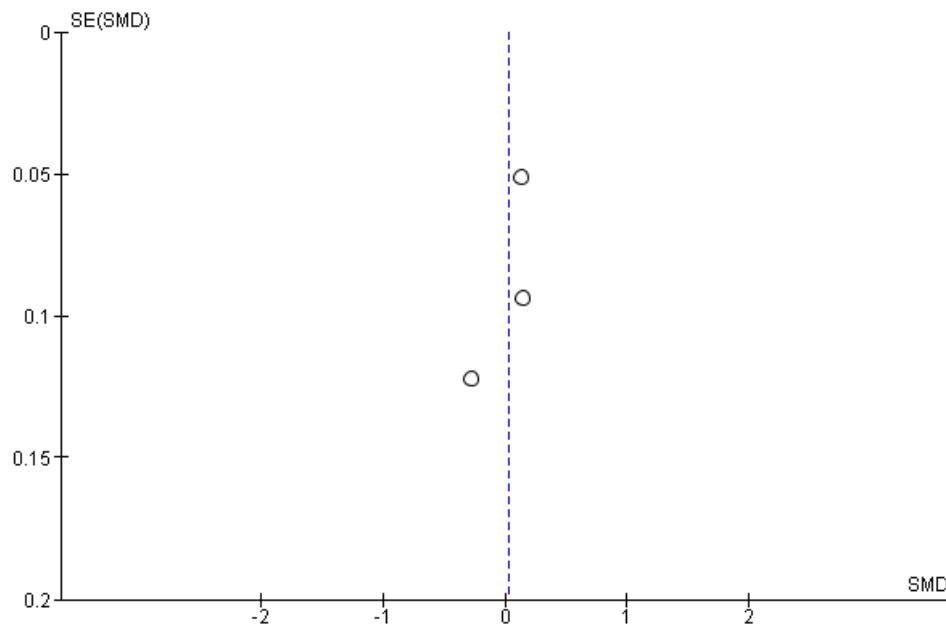


Figure 4: Funnel plot assessing small-study effects

Discussion

Main Findings

This systematic review and meta-analysis examined the effectiveness of behavioural health education interventions in improving mental health help-seeking among adult men. Across the ten included studies, behavioural health education interventions demonstrated the most consistent effects on earlier stages of the help-seeking pathway, including improved mental health literacy, reduced stigma, emotional openness, and willingness to seek support. Evidence of direct behavioural change, including professional help-seeking and engagement with new sources of support, was less frequently reported but was observed in some interventions incorporating practical guidance and service navigation. A meta-analysis of three randomised controlled trials examining help-seeking intentions found no statistically significant pooled effect using a random-effects model (SMD = 0.02, 95% CI -0.19 to 0.24, $p = 0.85$). However, sensitivity analysis using a fixed-effect model produced a small statistically significant effect favouring behavioural health education interventions (SMD = 0.08, 95% CI 0.00 to 0.17, $p = 0.04$), indicating that the overall estimate was influenced by between-study variability.

Comparison with Existing Literature

The findings are consistent with broader evidence showing that improving mental health literacy is an important foundation for increasing help-seeking. Ma et al. (2023a) [29], in their systematic review of mental health literacy interventions, reported that educational programmes commonly improve

knowledge and understanding of mental health conditions, although translation into actual help-seeking behaviour remains less consistent. Their work demonstrated that knowledge acquisition is necessary but does not automatically remove the social and psychological barriers that influence decisions about seeking care. Similarly, Nazari et al. (2023) [30] found through a systematic review and meta-analysis that web-based educational interventions significantly improved mental health literacy, but effects on stigma and help-seeking attitudes were less conclusive. This supports the present review's finding that educational interventions may successfully increase awareness while requiring additional components to produce behavioural change.

The present findings also correspond with evidence from digital mental health research. Evans-Lacko et al. (2022) [31] reviewed digital interventions designed to promote mental health help-seeking and concluded that technology-based approaches can reduce barriers associated with accessibility, privacy concerns, and uncertainty about available support. However, they also highlighted that digital interventions are more effective when they provide clear pathways towards care rather than information alone. This observation is reflected in the current review, where interventions such as online psychoeducation and male-focused digital platforms showed stronger potential when combined with practical signposting and support navigation.

The role of stigma reduction identified in this review is also supported by recent evidence. Ma et al.

(2023b) [32] examined interventions aimed at improving mental health literacy and reducing stigma and found that educational strategies can influence public understanding, although stigma reduction remains difficult to achieve through brief interventions alone. This helps explain why some studies included in the present review improved attitudes and readiness without producing clear evidence of professional service engagement.

Recent reviews have also emphasised that help-seeking is shaped by multiple individual and social factors rather than knowledge alone. Özparlak et al. (2023) [33], through a systematic review and meta-analysis, identified a relationship between mental health literacy and help-seeking among young people, demonstrating that individuals with stronger understanding of mental health are generally better positioned to recognise difficulties and consider support options. Although their population differed from the current review, the findings support the interpretation that literacy is an important starting point in the help-seeking process.

The quantitative findings of this review provide a more cautious interpretation of intervention effectiveness. Although individual studies demonstrated improvements in help-seeking intentions and selected behavioural outcomes, the pooled random-effects estimate did not demonstrate a statistically significant overall effect. This may reflect the substantial heterogeneity observed between studies ($I^2 = 79\%$), which suggests that behavioural health education interventions may not operate with the same magnitude of effect across different populations and delivery formats. Differences in intervention intensity, theoretical foundation, participant characteristics, and comparator conditions may influence the extent to which educational exposure translates into increased willingness to seek support.

However, the sensitivity analysis demonstrated that statistical conclusions differed according to the analytical model applied. The fixed-effect model suggested a small positive effect, whereas the random-effects model produced a non-significant estimate. Given the diversity of interventions included, the random-effects model provides a more conservative and clinically relevant interpretation because it recognises that intervention effects are unlikely to be identical across different contexts.

Relevance of Findings and Implications for Interventional Purposes

The findings have important implications for the design of future interventions targeting men's mental health. Although behavioural health education interventions may improve mental health literacy,

reduce stigma, and increase willingness to seek support, the present review highlights an important distinction between psychological readiness and actual help-seeking behaviour. Intention represents an important stage in the help-seeking process, but it does not guarantee subsequent engagement with mental health services. Behaviour change theories recognise that intentions are influenced by additional factors, including perceived accessibility of services, confidence in available support, social encouragement, previous experiences with care, and environmental barriers. Therefore, interventions designed to improve men's mental health help-seeking should consider both the development of positive intentions and the practical conditions required for those intentions to result in action.

The findings suggest that interventions may achieve greater impact when they move beyond simply providing information and incorporate components that address the psychological and social barriers influencing men's decisions to seek support. Programmes should combine mental health education with approaches that improve emotional confidence, challenge harmful beliefs about seeking help, and provide clear information about where assistance can be obtained. Educational components should therefore be accompanied by practical referral mechanisms, appointment pathways, confidential access options, and follow-up support to facilitate movement from willingness to actual engagement with care.

The review also highlights the importance of designing interventions that recognise men as a diverse population. Approaches that use relatable language, peer experiences, culturally appropriate messaging, and confidential access routes may be more acceptable to men who are reluctant to engage with conventional mental health services. Workplace programmes, digital platforms, and community-based interventions provide valuable opportunities because they can reach men before distress becomes severe and may reduce the discomfort associated with actively seeking clinical assistance.

For implementation, mental health education should ideally be linked with accessible referral systems. Increasing willingness to seek help without improving availability of appropriate services may create unmet demand. Therefore, policymakers and service providers should consider behavioural health education as one component of a wider strategy that includes affordable services, trained providers, confidential access, and supportive environments.

Strengths and Limitations

This review has several strengths. It provides a focused synthesis of behavioural health education

interventions specifically among adult men, a population frequently underrepresented in mental health intervention research. The review also considered a broad range of outcomes, allowing assessment of both psychological readiness and observable help-seeking behaviours. Furthermore, the inclusion of different intervention formats, including digital, workplace, media-based, and psychoeducational approaches, provides a comprehensive understanding of how different strategies may influence men's engagement with mental health support. An additional strength of this review is the integration of narrative synthesis with meta-analysis, allowing both broader examination of diverse intervention approaches and quantitative estimation of effects where comparable data were available.

However, several limitations should be considered. Although quantitative synthesis was possible for help-seeking intentions among three randomised controlled trials, the limited number of eligible studies and substantial heterogeneity restricted the strength of pooled conclusions. The meta-analysis

included only three studies, reducing statistical power and preventing additional analyses such as subgroup comparisons or reliable assessment of publication bias. Many studies relied on self-reported outcomes, particularly help-seeking intentions, which may not always correspond with later service engagement. The number of studies measuring actual help-seeking behaviour was limited, reducing confidence regarding whether improvements in readiness consistently translate into sustained support use. In addition, some feasibility and campaign evaluations lacked control groups, limiting conclusions about causal effectiveness.

Overall, this review indicates that behavioural health education interventions show potential to improve important stages of mental health help-seeking among adult men, particularly awareness, stigma reduction, attitudes, and readiness to seek support. Future research should focus on longer follow-up periods, objective measures of help-seeking behaviour, and intervention designs that integrate education with accessible pathways into mental health care.

Conclusion

Findings from this review indicate that behavioural health education interventions can meaningfully influence early stages of help-seeking among adult men, but their impact on actual service use remains less consistent. It was found that across ten studies, such interventions most reliably improved mental health awareness, reduced stigma, increased emotional openness, and strengthened help-seeking intentions. However, the meta-analysis of three trials showed no statistically significant pooled effect on intentions under a random-effects model (SMD = 0.02, 95% CI -0.19 to 0.24), with substantial heterogeneity suggesting effects vary by delivery format and context. Direct evidence of behavioural change was limited to a few studies that linked education with service

navigation or peer-based messaging. Consequently, policy and practice should treat behavioural health education not as a standalone solution, but as a gateway that must be paired with accessible, male-responsive referral pathways. Interventions are likely to be more effective when they use relatable language, peer narratives, and confidential delivery channels such as workplaces and digital platforms that align with men's preferences. Moving forward, research should prioritize longer follow-up, objective measures of help-seeking behavior, and culturally tailored designs that test which components translate readiness into sustained engagement. By bridging education with practical access, we can better support men to move from recognizing distress to actually seeking care.

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