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Development and Preliminary Efficacy of a Brief Mental Health Literacy Module for Police Personnel: A Single-Group Pre–Post Study

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Abstract

Police personnel carry an elevated burden of common mental disorders, yet low mental health literacy (MHL) and stigma constrain help-seeking and brief, content-validated MHL interventions for police in low and middle-income countries are scarce. This study aims to develop a brief MHL module for police personnel and to evaluate its preliminary efficacy. A six-member expert panel appraised the module content (item-level content validity index and content validity ratio). In a single-group pre–post design, 75 serving police personnel in Gujarat, India completed the 35-item Mental Health Literacy Scale (MHLS; range 35–160) before and after a single 3-hour awareness module delivered by a supervised postgraduate clinical-psychology trainee. Change was tested with paired-samples *t* tests, with Cohen's *d*z, Hedges' *g*, 95% confidence intervals and Holm–Bonferroni correction across domains. Experts rated the module favourably (overall $M = 3.93$ of 5). Total MHLS scores rose from pre-test $M = 99.84$ to post-test $M = 103.61$, $t(74) = 2.92$, $p = .005$, $dz = 0.34$. The gain was concentrated in recognising disorders ($dz = 0.76$, $p < .001$) and knowledge of professional help ($dz = 0.32$, $p = .007$); stigma-related attitudes did not improve ($dz = -0.17$, $p = .141$). A brief module produced a small but reliable increase in knowledge-based MHL without measurable change in stigma, consistent with evidence that didactic education shifts knowledge more readily than attitudes. Controlled designs, follow-up and contact-based components are indicated before scale-up.

Introduction

Policing is among the most psychologically demanding occupations. A systematic review and meta-analysis of 67 studies involving more than 270,000 officers from 24 countries estimated pooled point prevalences of 14.6% for depression, 14.2% for post-traumatic stress disorder, 9.6% for generalised anxiety disorder and 8.5% for suicidal ideation, with occupational stress the strongest and most consistent correlate (Syed et al., 2020). Evidence from India is consistent: a recent survey of police officials in Kerala found that 75.5% reported high operational stress and 65.6% high organisational stress (Mini et al., 2025). These occupational vulnerabilities sit within a wider service context in which most people in India with a mental disorder receive no care; the National Mental Health Survey of India estimated an overall treatment gap exceeding 80% (Gautham et al., 2020), a gap that national reforms such as the Mental Healthcare Act, 2017 (Math et al., 2019) and the Tele-MANAS tele-mental-health programme (Ministry of Health and Family Welfare, 2022) seek to close, in line with the global reorientation towards community-based care (World Health Organization, 2022). For a workforce that is itself a frequent first point of contact for persons in psychological crisis, low personal mental health literacy and reluctance to seek help carry consequences for officers and for the public they serve.

Mental health literacy (MHL) is defined as "knowledge and beliefs about mental disorders which aid their recognition, management or prevention" (Jorm et al., 1997, p. 182) and since elaborated as a multidimensional, actionable competency (Kutcher et al., 2016) — offers a tractable target for intervention. The construct encompasses the ability to recognise specific disorders, knowledge of risk factors and causes, of self-help strategies and of professional help available, knowledge of how to seek

mental health information and attitudes that promote recognition and appropriate help-seeking (Jorm et al., 1997). Each component is relevant to policing: officers must recognise distress in themselves, colleagues and the public, hold non-stigmatising attitudes and know how to facilitate referral. Yet officers' actual knowledge of mental health conditions is often weaker than their perceived knowledge (Wittmann et al., 2021) and surveys of police training needs identify recognition and response to persons with mental disorders as a priority gap (Lorey & Fegert, 2021). In UK police, mental health literacy, distress disclosure and organisational stigma jointly predict help-seeking attitudes (Traynor et al., 2024), underscoring that literacy and stigma operate together.

Stigma is the central barrier. In a national US study, more than 90% of officers perceived stigma as deterring help-seeking and stigma did not diminish even among those who sought and benefited from help (Drew & Martin, 2021); a meta-analysis of first responders similarly identifies stigma and confidentiality fears as the dominant barriers to care (Haugen et al., 2017). In the Indian context, stigma toward mental illness is pervasive and begins early (Gaiha et al., 2020). Anti-stigma evidence indicates that education and interpersonal contact can both reduce mental-health-related stigma, with contact-based approaches exerting the stronger effect on attitudes (Thornicroft et al., 2016).

Interventions can improve MHL, but their effects are uneven across components. A meta-analysis of MHL interventions for teachers found large post-training effects for knowledge (Hedges' g = 1.08) but small effects for stigma reduction (g = − 0.33) and non-significant effects for help-seeking (Liang et al., 2026); web-delivered programmes for young people show the same asymmetry, improving knowledge (SMD = 0.70) but not stigma or help-seeking attitudes (Nazari et al., 2023); and the Mental Health First Aid programme reliably raises knowledge with more modest effects on stigma and helping behaviour (Morgan et al., 2018). Among public-safety personnel specifically, brief psychoeducation increased knowledge and reduced stigma toward others but left self-stigma unchanged and officers reported higher self-stigma than other responders (Marks et al., 2024). Police-specific evaluations point the same way: a pragmatic randomised trial improved officers' responses to people with mental health problems (Scantlebury et al., 2017); the Road to Mental Readiness programme produced small reductions in stigma that were not always sustained (Szeto et al., 2019); a single-group pre–post evaluation of a recruit-training module raised knowledge and reduced stigmatising attitudes (Wise et al., 2021); and a national survey of police mental-health training called explicitly for pre–post outcome evaluations of such training (Fiske et al., 2021). In an Indian school setting, an education-based awareness and destigmatisation programme improved adolescents' recognition and reduced stigma (Manjari & Sudhesh, 2024). Brief, education-only formats may therefore be expected to move knowledge more than attitudes — a distinction with direct design implications that is rarely tested in police samples.

Despite the occupational need, brief, content-validated MHL modules designed specifically for police personnel and evaluated in Indian or other low- and middle-income (LMIC) settings remain scarce; most evidence derives from students, teachers and high-income, Western contexts. A scalable, low-cost module that can be delivered within existing police training time, validated by relevant experts and evaluated with a psychometrically established outcome measure would address a practical gap and

answer the call for police training-outcome evidence (Fiske et al., 2021). The Mental Health Literacy Scale (MHLS; O'Connor & Casey, 2015) provides such a measure, capturing the full breadth of the MHL construct in a single total score.

The present study had two objectives: (a) to develop a brief MHL module for police personnel and establish its content validity through expert appraisal; and (b) to evaluate the module's preliminary efficacy by comparing MHLS scores before and after delivery. Given the design, the following directional hypotheses, derived from the outcomes actually measured, were examined: *H1*, total MHLS scores would increase from pre- to post-intervention; *H2*, the knowledge-oriented domains (recognition of disorders, risk factors and causes, self-treatment, professional help available and information-seeking) would increase; and *H3*, change in the attitudes/stigma domain would be smaller than change in the knowledge domains, because brief didactic education is expected to shift knowledge more than attitudes. Consistent with the single-group design, the efficacy objective is framed as a preliminary evaluation rather than a test of causal effect.

Method

Design

This was a single-group, pre–post intervention study evaluating a brief MHL module for police personnel, reported in accordance with the Transparent Reporting of Evaluations with Nonrandomized Designs (TREND) statement (Des Jarlais et al., 2004). Because no concurrent comparison group was included, the design is pre-experimental and is reported as a preliminary-efficacy evaluation. As a single-arm study it carries known threats to internal validity — testing or practice effects, maturation, history, regression to the mean and demand characteristics — that cannot be excluded without a control condition. To limit these where possible, the pre- and post-tests were administered under standardised conditions with identical instructions, responses were anonymous to reduce social-desirability pressure and the interval between assessments was held constant across participants; these measures mitigate, but do not substitute for randomisation and a comparison group and the findings are interpreted accordingly.

Participants and Setting

Participants were serving police personnel of varied ranks in law-enforcement agencies in Gujarat, India, recruited by convenience sampling from workshops, training settings and police offices. Eligible personnel had at least three years of service and no prior formal training or education in mental health literacy or related programmes. The sample comprised 75 personnel (53 men, 70.7%; 22 women, 29.3%) with a mean age of 35.68 years (*SD* = 6.90, range 24–55). Most were police constables (65.3%) or head constables (17.3%), with assistant sub-inspectors, sub-inspectors and inspectors comprising the remainder; qualifications ranged from higher secondary (42.6%) schooling to postgraduate degrees (28.0%). Participant characteristics are summarised in Table 1.

Participant Flow and Recruitment

Recruitment and data collection took place between January and March 2025. Total 103 Police personnel were approached and assessed for eligibility; 17 did not meet the inclusion criteria (≥ 3 years' service; no prior mental health literacy training) and were not enrolled in the study sample, although all 103 attended the awareness workshop. The 86 eligible personnel provided informed consent and completed the pre-intervention MHLS, received the module and completed the post-intervention MHLS within the same session. 11 returns with incomplete data were excluded, leaving a final analytic sample of 75 officers (87.2% of those enrolled) with complete data at both time points and no missing item responses. The flow of participants is shown in Fig. 1.

The Brief Mental Health Literacy Module

Theoretical framework. The module was grounded in the mental health literacy framework (Jorm et al., 1997; Kutcher et al., 2016) and delivered as structured didactic psychoeducation, the instructional approach that underpins established literacy programmes such as Mental Health First Aid (Morgan et al., 2018). Consistent with this framework, the module prioritised the knowledge and recognition components of MHL — understanding mental health and mental illness, recognising signs and symptoms and knowing how to provide support or referral — together with stigma-reduction messaging. By design it did not include the structured interpersonal-contact component that more strongly shifts stigmatising attitudes (Thornicroft et al., 2016), a choice whose implications are considered in the Discussion.

Content and delivery. The module was developed through a review of the MHL and police mental-health literature and consultation with mental-health professionals, police officers and practitioners, with attention to the occupational stressors and training context of policing. It was delivered as a single 3-hour group session by a postgraduate clinical-psychology trainee under the supervision of a licensed mental health professional, using a standardised set of materials and a fixed session plan delivered on university premises.

Fidelity. Delivery by a single trained facilitator working from a fixed session plan and standardised materials, under professional supervision, supported consistency of delivery across groups.

Expert Content Validation

Before fielding, the module was appraised by a panel of six subject-matter experts spanning clinical psychology, psychiatry, psychiatric social work and police administration. Each expert rated 14 module dimensions (e.g., logical flow, alignment with learning objectives, appropriateness of activities, delivery format and overall quality) on a 5-point scale. Content validity was quantified using the item-level content validity index (I-CVI; the proportion of experts rating a dimension ≥ 4), the scale-level index (S-CVI/Ave; Yusoff, 2019) and Lawshe's content validity ratio (CVR; Lawshe, 1975). Because the panel rated module

quality rather than item relevance, these indices are interpreted descriptively and alongside qualitative expert feedback, which guided module refinement before delivery.

Measure

Mental Health Literacy Scale (MHLS). The MHLS (O'Connor & Casey, 2015) is a 35-item self-report measure of MHL. Items 1–15 use a 4-point response format and items 16–35 a 5-point format; items 10, 12, 15 and 20–28 are reverse-scored and all items are summed to a total ranging from 35 to 160, with higher scores indicating greater mental health literacy. In the present sample, internal consistency for the total scale was acceptable at pre-test (Cronbach's α = .79) and marginal at post-test (α = .67). For descriptive purposes, scores were grouped into the six content domains specified by the developers: ability to recognise disorders (items 1–8), knowledge of risk factors and causes (9–10), knowledge of self-treatment (11–12), knowledge of professional help available (13–15), knowledge of how to seek information (16–19) and attitudes promoting recognition and help-seeking (20–35). Because the developers recommend total-score interpretation, domain analyses are treated as secondary and exploratory.

Procedure

The study proceeded in four stages: module development and expert-review refinement; pre-assessment; intervention; and post-assessment. After a brief explanation of the study and consent was obtained, participants completed the MHLS as a baseline measure. The module was then delivered in a group format to support engagement and immediately afterwards participants completed the MHLS a second time as a post-test. No blinding was feasible in this single-arm design: participants and the facilitator were necessarily aware of the intervention and outcomes were unblinded self-report. This raises the possibility of demand characteristics and common-method bias, which are considered in the Discussion.

Figure 1

Participant-Flow Diagram Aligned to the Four-Stage Procedure

Note

Flow of participants through the single-group pre–post study with four-stage procedure shown on the left: Stage 1, module development and expert-review refinement; Stage 2, pre-assessment; Stage 3, intervention; and Stage 4, post-assessment. All 103 individuals approached attended the awareness workshop; the 17 ineligible were not enrolled in the study sample. Of 86 enrolled participants assessed at both time points, 11 were excluded for incomplete data, leaving 75 for analysis. N = 75.

Power Analysis and Statistical Approach

An a priori power analysis was conducted in G*Power 3.1.9.7 (Faul et al., 2007) for the primary within-subjects contrast. For a two-tailed paired-samples *t* test with α = .05 and power (1 − β) = .95, detecting a conservative medium effect of *d*z = 0.50 required 54 participants; the achieved sample of 75 provided power exceeding .99 for an effect of that size. Normality of the difference scores was assessed with the D'Agostino–Pearson omnibus test. Pre–post changes in the MHLS total and each domain were tested with paired-samples *t* tests, with Wilcoxon signed-rank tests as nonparametric sensitivity checks. Effect sizes are reported as Cohen's *d*z and bias-corrected Hedges' *g*, with 95% confidence intervals (CIs) for the mean change. To limit Type I error across the six domain comparisons, Holm–Bonferroni correction was applied. All tests were two-tailed (α = .05).

Results

Participant Characteristics

Analyses were based on the complete sample of 75 personnel who provided both pre- and post-intervention data. Participant characteristics are presented in Table 1.

Table 1

Demographic Characteristics of the Sample (N = 75)

Characteristic	***n***	**%**
Age (years), M (SD)	35.68 (6.90)	—
Age range	24–55	—
Sex		
Male	53	70.7
Female	22	29.3
Qualification		
Higher secondary (12th)	32	42.6
Undergraduate	22	29.3
Postgraduate	21	28.0
Rank		
Police constable	49	65.3
Head constable	13	17.3
Sub-inspector	6	8.0
Police inspector	4	5.3
Assistant sub-inspector	3	4.0
Religion (Hindu)	75	100.0

Note. Percentages are column percentages. Age is reported as *M* (*SD*). Rank abbreviations follow Gujarat Police nomenclature.

Module Development and Content Validation

Across the 14 appraisal dimensions, mean expert ratings ranged from 3.67 to 4.33 on a 5-point scale (overall *M* = 3.93), indicating generally favourable endorsement. Item-level content validity indices ranged from .50 to 1.00, with a scale-level index (S-CVI/Ave) of .74. Logical flow of information and clear headings achieved full agreement (I-CVI = 1.00, CVR = 1.00), whereas dimensions concerning resource currency and delivery format attracted more divergent ratings. Because Lawshe's critical CVR for a six-member panel is .99, most dimensions did not reach the formal threshold; the indices are therefore reported descriptively and were used, with the experts' written comments, to refine the module before delivery (Table 2; Fig. 2).

Table 2

Expert Appraisal and Content Validity of the Brief Mental Health Literacy Module (Six Experts)

Module dimension	*M*	*SD*	I-CVI	CVR
Logical flow of information	4.17	0.41	1.00	1.00
Clear headings	4.17	0.41	1.00	1.00
Appropriate length and spacing	3.83	0.75	.67	.33
Appropriateness of activities	4.00	0.89	.67	.33
Alignment with learning objectives	4.33	0.82	.83	.67
Clarity of instructions	4.00	0.89	.67	.33
Quality and relevance of resources	3.67	0.52	.67	.33
Accessibility of resources	3.67	0.52	.67	.33
Up-to-date information and contact details	3.67	0.82	.50	.00
Clarity of delivery instructions	3.67	0.52	.67	.33
Appropriateness of delivery format	3.67	0.52	.67	.33
Effectiveness of evaluation methods	3.83	0.41	.83	.67
Overall quality of the module	4.17	0.98	.67	.33
Effectiveness in improving mental health literacy	4.17	0.75	.83	.67

Note. M and *SD* are expert ratings on a 1–5 scale. I-CVI = item-level content validity index (proportion of experts rating ≥ 4); CVR = content validity ratio (Lawshe, 1975). S-CVI/Ave = .74. The critical CVR for six experts is .99. Experts rated module quality rather than item relevance, so indices are adapted and interpreted descriptively.

Figure 2

Item-Level Content Validity Indices for the Module Appraisal Dimensions

Note

Bars show the I-CVI (proportion of six experts rating each dimension ≥ 4 on a 5-point scale). The dashed line marks the conventional I-CVI criterion of .78.

Preliminary Efficacy (Pre–Post MHLS Change)

The distribution of total-score change did not depart from normality (D'Agostino–Pearson $K^2 = 0.50$, $p = .777$), supporting the paired-samples *t* test for the primary contrast. Consistent with H1, total MHLS scores increased significantly from pre-test (*M* = 99.84, *SD* = 12.75) to post-test (*M* = 103.61, *SD* = 9.74),

$t(74) = 2.92$, $p = .005$, $dz = 0.34$, 95% CI [0.10, 0.57], Hedges' $g = 0.33$. The mean gain of 3.77 points (95% CI [1.20, 6.35]) represented a small overall effect, corroborated by the Wilcoxon signed-rank test ($z = 2.75$, $p = .006$). Pre- and post-test scores were moderately correlated ($r = .53$; Fig. 3).

Figure 3

Mean Total MHLS Scores Before and After the Brief Module

Note

Error bars represent 95% confidence intervals. The MHLS total ranges from 35 to 160; higher scores indicate greater mental health literacy. N = 75.

Domain analyses showed that the gain was concentrated rather than uniform (Table 3; Fig. 4), partially supporting H2. The largest change occurred in the ability to recognise disorders, $t(74) = 6.55$, $p < .001$, $dz = 0.76$, a medium-to-large effect that accounted for most of the total-score improvement and survived Holm–Bonferroni correction. A smaller, reliable gain emerged for knowledge of professional help available, $t(74) = 2.79$, $p = .007$, $dz = 0.32$, which also survived correction. Changes in knowledge of risk factors and causes, self-treatment and information-seeking were small and did not survive correction. Consistent with H3, the attitudes/stigma domain did not improve and shifted marginally in the unfavourable direction, $t(74) = -1.49$, $p = .141$, $dz = -0.17$ — a non-significant difference indicating that the brief module did not measurably reduce stigmatising attitudes or social distance over the study period.

Table 3

Pre–Post Comparison of MHLS Total and Domain Scores (N = 75)

Scale / domain	*k*	Pre *M* (*SD*)	Post *M* (*SD*)	ΔM [95% CI]	*t*	*p*	*dz*	*g*
Total MHLS**	35	99.84 (12.75)	103.61 (9.74)	3.77 [1.20, 6.35]	2.92	.005	0.34	0.33
Recognition of disorders***	8	20.92 (4.80)	24.85 (4.05)	3.93 [2.74, 5.13]	6.55	< .001	0.76	0.75
Risk factors & causes	2	5.25 (1.72)	5.24 (1.32)	-0.01 [-0.41, 0.39]	−0.07	.947	−0.01	−0.01
Self-treatment	2	5.73 (1.23)	5.56 (1.20)	-0.17 [-0.54, 0.19]	−0.94	.348	−0.11	−0.11
Professional help available**	3	7.09 (1.73)	7.87 (1.71)	0.77 [0.22, 1.32]	2.79	.007	0.32	0.32
Information-seeking	4	14.09 (3.31)	14.88 (2.88)	0.79 [-0.03, 1.60]	1.92	.058	0.22	0.22
Attitudes/stigma	16	46.75 (7.38)	45.21 (6.06)	-1.53 [-3.58, 0.52]	−1.49	.141	−0.17	−0.17

Note. *k* = number of items; ΔM = mean change (post − pre); *dz* = Cohen's *d* for paired data; *g* = bias-corrected Hedges' *g*. All *t* tests have df = 74. Recognition of disorders and Professional help available remained significant after Holm–Bonferroni correction. * *p* < .05. ** *p* < .01. *** *p* < .001.

Discussion

This study developed a brief, expert-appraised mental health literacy module for police personnel and evaluated its preliminary efficacy in a single-group pre–post design. Two findings stand out. First, the module produced a statistically significant but small increase in total MHL (H1 supported). Second and more informatively, this gain was not uniform: it was driven almost entirely by improved recognition of mental disorders and, to a lesser extent, knowledge of professional help, while stigma-related attitudes and social distance did not change (H2 partially supported; H3 supported). The module thus shifted the knowledge components of mental health literacy without measurably altering its attitudinal components.

The divergence between knowledge and stigma is the most instructive result and it aligns closely with the wider intervention literature. Meta-analyses of MHL programmes consistently report large knowledge gains alongside weak or null effects on stigma and help-seeking (Liang et al., 2026; Morgan et al., 2018;

Nazari et al., 2023) and among public-safety personnel brief psychoeducation improved knowledge and reduced stigma toward others yet left self-stigma unchanged (Marks et al., 2024). The mechanism is well characterised: didactic education corrects factual misconceptions but changes attitudes only weakly, whereas interpersonal contact with persons with lived experience produces substantially larger attitudinal shifts (Thornicroft et al., 2016). A brief, predominantly educational module delivered in a group format is therefore well suited to raising recognition knowledge but poorly suited to dislodging stigma, which is affectively held and culturally reinforced within hierarchical, masculine-coded occupational settings such as policing. Notably, two comparable education-based programmes did reduce stigma — a recruit-training module assessed with the AQ-27 (Wise et al., 2021) and an Indian school destigmatisation programme (Manjari & Sudhesh, 2024) — which suggests the present null stigma effect reflects the module's brevity and education-only format, the particular attitudinal content of the MHLS, the immediate post-test and the occupational-cultural context, rather than a general failure of education to influence attitudes. The present data extend the knowledge–stigma asymmetry to Indian police personnel and indicate that stigma reduction in this population will likely require deliberate contact-based components rather than information alone.

The gain in recognition of disorders is meaningful for the police role. Officers frequently encounter persons in psychological distress and act as informal gatekeepers to care, yet their actual recognition knowledge is often weaker than they perceive (Wittmann et al., 2021); improved recognition is a prerequisite for appropriate response and referral (Lorey & Fegert, 2021). The smaller improvement in knowledge of professional help available similarly supports the referral function and both effects survived correction for multiple comparisons. The absence of change in knowledge of risk factors and causes, of self-treatment and of information-seeking may reflect the brevity of the module, relatively higher baseline scores in these areas, or limited curriculum coverage; each is a candidate target for revision.

Several findings carry implications across levels of practice. For police welfare and training, the results support embedding brief MHL content within existing in-service training while cautioning that knowledge-focused sessions alone will not reduce stigma or, by extension, reliably improve help-seeking — a particular concern given that stigma is the dominant barrier to care among police and first responders (Drew & Martin, 2021; Haugen et al., 2017) and that literacy and stigma jointly shape officers' help-seeking (Traynor et al., 2024). Training designers should incorporate structured contact with persons with lived experience and consider booster sessions to consolidate and extend gains. At the service and policy level, recognition and referral skills can be linked to existing pathways such as Tele-MANAS (Ministry of Health and Family Welfare, 2022), aligning the module with the implementation of the Mental Healthcare Act, 2017 (Math et al., 2019) and with person-first, non-stigmatising standards of care. Such integration would help translate improved recognition into concrete help-seeking and referral behaviour, which this study did not measure.

No adverse events or unintended harms were reported or observed during delivery or assessment. The only unfavourable signal was a small, non-significant decline in the attitudes/stigma domain (d_z = −

0.17), which did not reach significance and is interpreted cautiously rather than as evidence of harm. The findings should otherwise be read in light of several limitations. First, the single-group pre–post design lacks a control condition and randomisation, so observed change cannot be attributed to the module with confidence; testing effects, history, maturation, regression to the mean and demand characteristics are plausible alternative explanations. Second, the post-test was administered immediately after delivery, so the durability of gains is unknown. Third, the MHLS is a self-report measure subject to social-desirability and common-method bias and outcome assessment was unblinded; internal consistency at post-test was marginal (α = .67), with low reliabilities for the briefer two- and three-item domains, so domain-level results are exploratory. Fourth, recruitment used convenience sampling within a single state and a religiously homogeneous sample, limiting generalisability to the wider Indian police workforce. Fifth, the content-validity indices, though favourable in mean ratings, were modest by formal criteria, reflecting the small expert panel and the stringency of Lawshe's threshold. Finally, 11 of the 86 enrolled participants (12.8%) were excluded for incomplete data; although this attrition is modest and is fully reported (Fig. 1), the complete-case analysis could introduce bias if missingness was related to the outcome.

Future work should evaluate the module in a controlled or randomised design with an active comparator (Scantlebury et al., 2017), incorporate follow-up assessment to test retention, add contact-based and skills-based components explicitly targeting stigma (Thornicroft et al., 2016) and extend outcomes beyond literacy to behavioural indices such as help-seeking and referral. Multi-site recruitment spanning ranks, regions and armed and civil branches would improve generalisability and allow examination of whether effects differ by rank, sex, or service length.

Conclusion

A brief, expert-appraised mental health literacy module produced a small but reliable increase in knowledge-based mental health literacy among police personnel in Gujarat, with a clear gain in the recognition of mental disorders but no measurable change in stigma. The module is a promising, scalable starting point for police mental-health training, but its present form should be strengthened with contact-based components, evaluated in a controlled design with follow-up and linked to referral pathways before wider adoption.

Declarations

Author Contribution

V.R. contributed to intervention module preparation and delivery, data collection and manuscript preparation. G.K.S. conceptualised, analysed, prepared the manuscript and supervised the study.

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Data Availability

The de-identified data and analysis code that support the findings of this study are available from the corresponding author on reasonable request

References

1. Cohen J (1988) Statistical power analysis for the behavioral sciences, 2nd edn. Lawrence Erlbaum Associates
2. Des Jarlais DC, Lyles C, Crepaz N, the TREND Group (2004) Improving the reporting quality of nonrandomized evaluations of behavioral and public health interventions: The TREND statement. Am J Public Health 94(3):361–366. https://doi.org/10.2105/AJPH.94.3.361
3. Drew JM, Martin S (2021) A national study of police mental health in the USA: Stigma, mental health and help-seeking behaviors. J Police Criminal Psychol 36(2):295–306. https://doi.org/10.1007/s11896-020-09424-9
4. Faul F, Erdfelder E, Lang A-G, Buchner A (2007) G*Power 3: A flexible statistical power analysis program for the social, behavioral and biomedical sciences. Behav Res Methods 39(2):175–191. https://doi.org/10.3758/BF03193146
5. Fiske ZR, Songer DM, Schriver JL (2021) A national survey of police mental health training. J Police Criminal Psychol 36(2):236–242. https://doi.org/10.1007/s11896-020-09402-1
6. Gaiha SM, Salisbury T, Koschorke T, Raman M, U., Petticrew M (2020) Stigma associated with mental health problems among young people in India: A systematic review of magnitude, manifestations and recommendations. BMC Psychiatry 20., Article 538. https://doi.org/10.1186/s12888-020-02937-x
7. Gautham MS, Gururaj G, Varghese M, Benegal V, Rao GN, Kokane A, the NMHS Collaborators Group (2020) …. The National Mental Health Survey of India (2016): Prevalence, socio-demographic correlates and treatment gap of mental morbidity. International Journal of Social Psychiatry, 66(4), 361–372. https://doi.org/10.1177/0020764020907941
8. Haugen PT, McCrillis AM, Smid GE, Nijdam MJ (2017) Mental health stigma and barriers to mental health care for first responders: A systematic review and meta-analysis. J Psychiatr Res 94:218–229. https://doi.org/10.1016/j.jpsychires.2017.08.001
9. Jorm AF, Korten AE, Jacomb PA, Christensen H, Rodgers B, Pollitt P (1997) Mental health literacy: A survey of the public's ability to recognise mental disorders and their beliefs about the effectiveness of treatment. Med J Aust 166(4):182–186. https://doi.org/10.5694/j.1326-5377.1997.tb140071.x

10. Kutcher S, Wei Y, Coniglio C (2016) Mental health literacy: Past, present and future. Can J Psychiatry 61(3):154–158. https://doi.org/10.1177/0706743715616609
11. Lawshe CH (1975) A quantitative approach to content validity. Pers Psychol 28(4):563–575. https://doi.org/10.1111/j.1744-6570.1975.tb01393.x
12. Liang C, Zhang X, Chen Y (2026) Meta-analysis of the effects of mental health literacy intervention on teachers: Knowledge, stigma, help-seeking and helping. Front Psychol 16:1700220. https://doi.org/10.3389/fpsyg.2025.1700220
13. Lorey K, Fegert JM (2021) Increasing mental health literacy in law enforcement to improve best practices in policing—Introduction of an empirically derived, modular, differentiated and end-user driven training design. Front Psychiatry 12., Article 706587. https://doi.org/10.3389/fpsyt.2021.706587
14. Manjari AS, Sudhesh NT (2024) Knowledge, attitude and stigma among adolescents: Effect of Mental Health Awareness and Destigmatisation (MHAD) program. J Child Adolesc Psychiatric Nurs 37(1) Article e70003. https://doi.org/10.1111/jcap.70003
15. Marks MR, Bowers C, Beidel DC, Ortman J, Newins AR (2024) Improving mental health knowledge and reducing mental health stigma among public safety personnel: Comparison of live vs. online psychoeducation training programs. Int J Environ Res Public Health 21(10) Article 1358. https://doi.org/10.3390/ijerph21101358
16. Math SB, Basavaraju V, Harihara SN, Gowda GS, Manjunatha N, Kumar CN, Gowda M (2019) Mental Healthcare Act 2017 – Aspiration to action. Indian J Psychiatry 61(Suppl 4):S660–S666. https://doi.org/10.4103/psychiatry.IndianJPsychiatry_91_19
17. Mini GK, Venkateswaran C, Anjana VM, Krishna S, Greeshma S, Greeshma J, Revathy PS, Irazola K, V., Romate J (2025) Stress among police officials in Kerala, India: An analysis of organizational and operational factors. BMC Psychol 13:512. https://doi.org/10.1186/s40359-025-02831-9
18. Ministry of Health and Family Welfare (2022) Tele Mental Health Assistance and Networking Across States (Tele-MANAS). Government of India. https://telemanas.mohfw.gov.in
19. Morgan AJ, Ross A, Reavley NJ (2018) Systematic review and meta-analysis of Mental Health First Aid training: Effects on knowledge, stigma and helping behaviour. PLoS ONE 13(5) Article e0197102. https://doi.org/10.1371/journal.pone.0197102
20. Nazari A, Garmaroudi G, Foroushani AR, Askari A, Sadeghi R (2023) The effect of web-based educational interventions on mental health literacy, stigma and help-seeking intentions/attitudes in young people: Systematic review and meta-analysis. BMC Psychiatry 23:647. https://doi.org/10.1186/s12888-023-05143-7
21. O'Connor M, Casey L (2015) The Mental Health Literacy Scale (MHLS): A new scale-based measure of mental health literacy. Psychiatry Res 229(1–2):511–516. https://doi.org/10.1016/j.psychres.2015.05.064
22. Scantlebury A, Fairhurst C, Booth A, McDaid C, Moran N, Parker A, Payne R, Scott WJ, Torgerson D, Webber M, Hewitt C (2017) Effectiveness of a training program for police officers who come into

contact with people with mental health problems: A pragmatic randomised controlled trial. PLoS ONE 12(9) Article e0184377. https://doi.org/10.1371/journal.pone.0184377

23. Syed S, Ashwick R, Schlosser M, Jones R, Rowe S, Billings J (2020) Global prevalence and risk factors for mental health problems in police personnel: A systematic review and meta-analysis. Occup Environ Med 77(11):737–747. https://doi.org/10.1136/oemed-2020-106498
24. Szeto A, Dobson KS, Knaak S (2019) The Road to Mental Readiness for first responders: A meta-analysis of program outcomes. Can J Psychiatry 64(1):18S–29S. https://doi.org/10.1177/0706743719842562
25. Thornicroft G, Mehta N, Clement S, Evans-Lacko S, Doherty M, Rose D, Koschorke M, Shidhaye R, O'Reilly C, Henderson C (2016) Evidence for effective interventions to reduce mental-health-related stigma and discrimination. Lancet 387(10023):1123–1132. https://doi.org/10.1016/S0140-6736(15)00298-6
26. Traynor IEG, Scott H, Rydon-Grange M (2024) Intrapersonal and organisational predictors of psychological help-seeking in a UK police force. J Police Criminal Psychol 39(3):598–614. https://doi.org/10.1007/s11896-024-09652-3
27. Wise M, Christiansen L, Stewart C (2021) Examining the effectiveness of mental health education on law enforcement: Knowledge and attitudes. J Police Criminal Psychol 36(1):49–55. https://doi.org/10.1007/s11896-019-09319-4
28. Wittmann L, Groen G, Hampel P, Petersen R, Jörns-Presentati A (2021) Police officers' ability in recognizing relevant mental health conditions. Front Psychol 12:727341. https://doi.org/10.3389/fpsyg.2021.727341
29. World Health Organization (2022) World mental health report: Transforming mental health for all. https://www.who.int/publications/i/item/9789240049338
30. Yusoff MSB (2019) ABC of content validation and content validity index calculation. Educ Med J 11(2):49–54. https://doi.org/10.21315/eimj2019.11.2.6

Figures

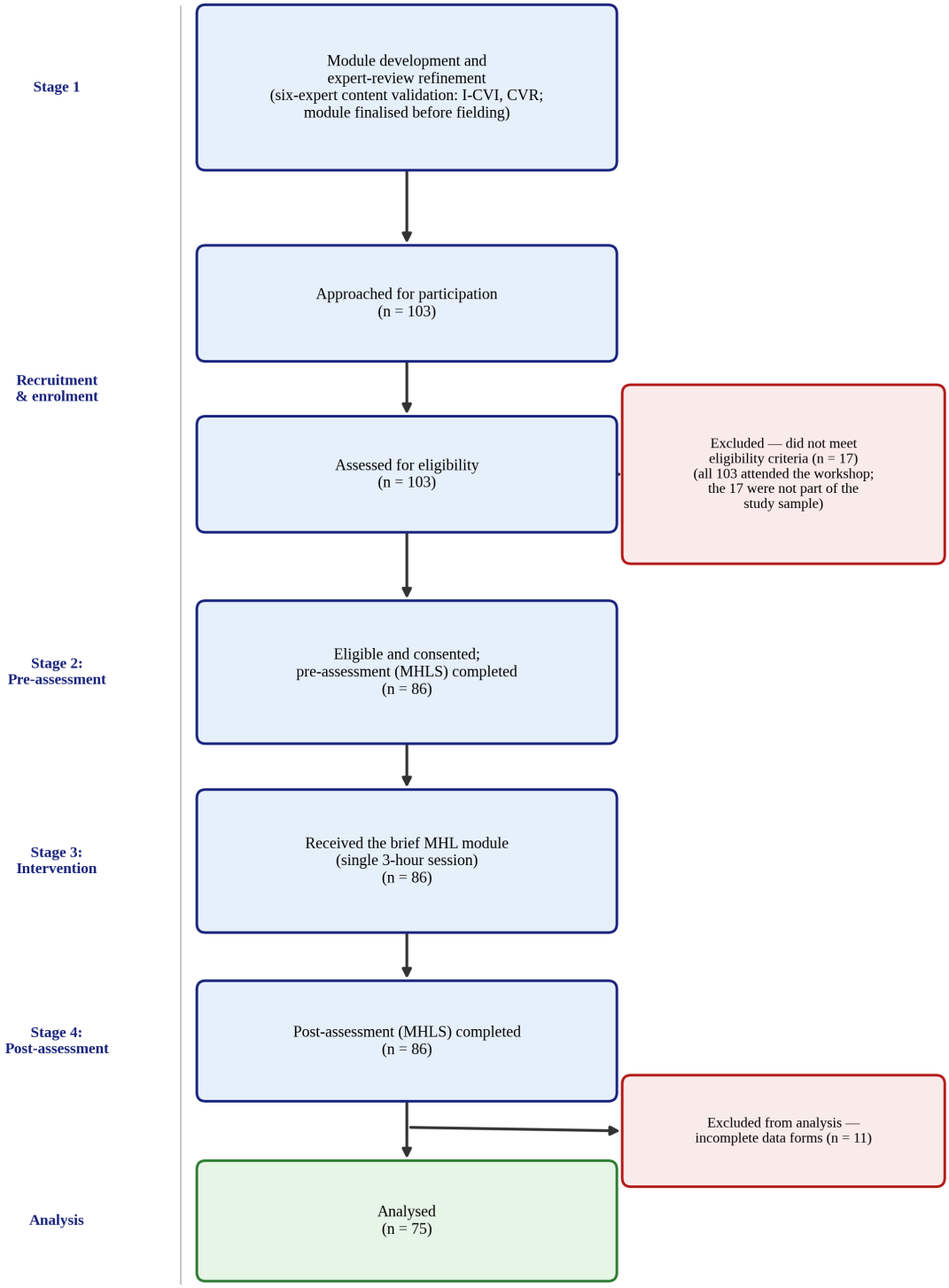


Figure 1

Participant-Flow Diagram Aligned to the Four-Stage Procedure

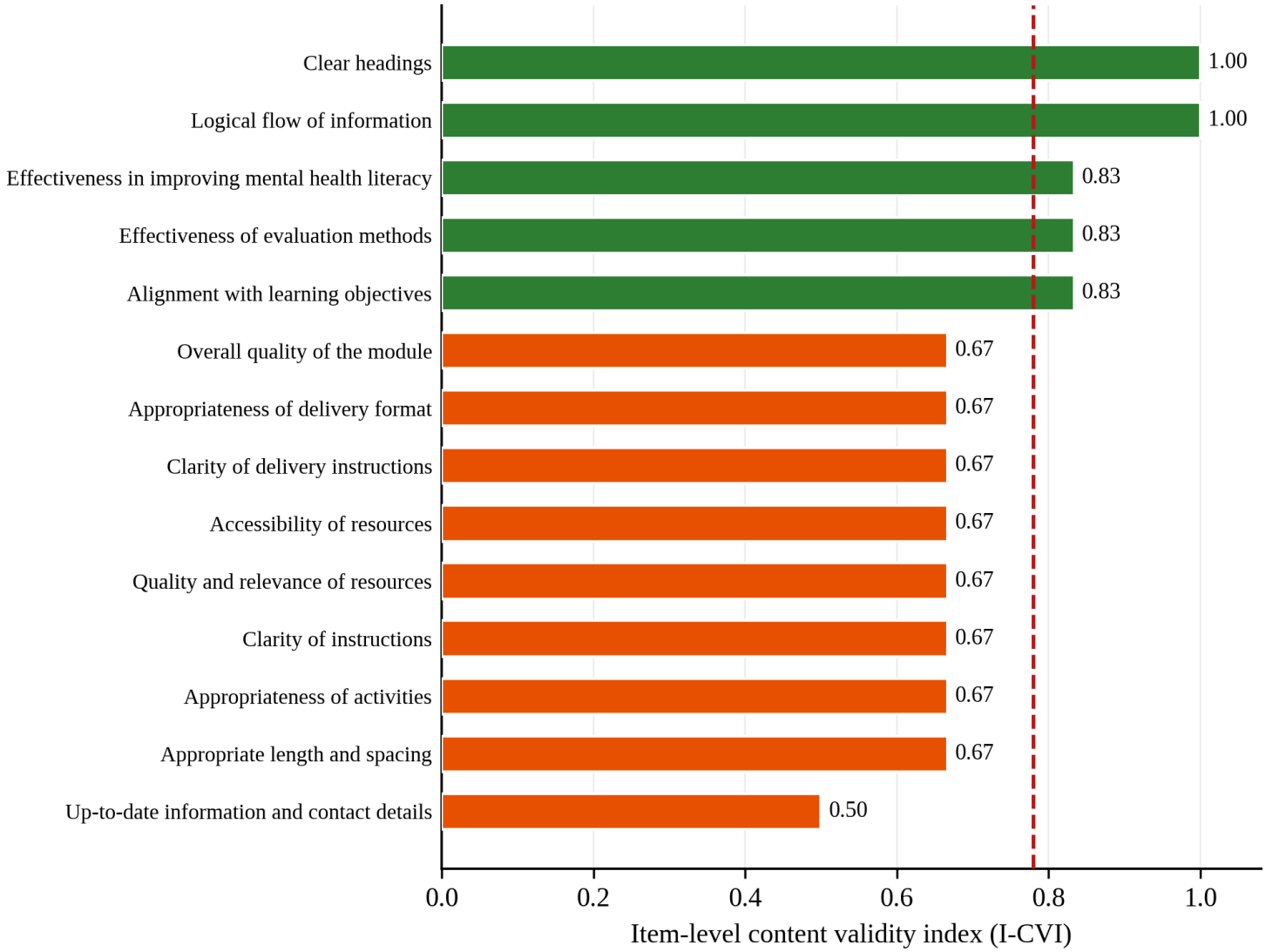


Figure 2

Item-Level Content Validity Indices for the Module Appraisal Dimensions

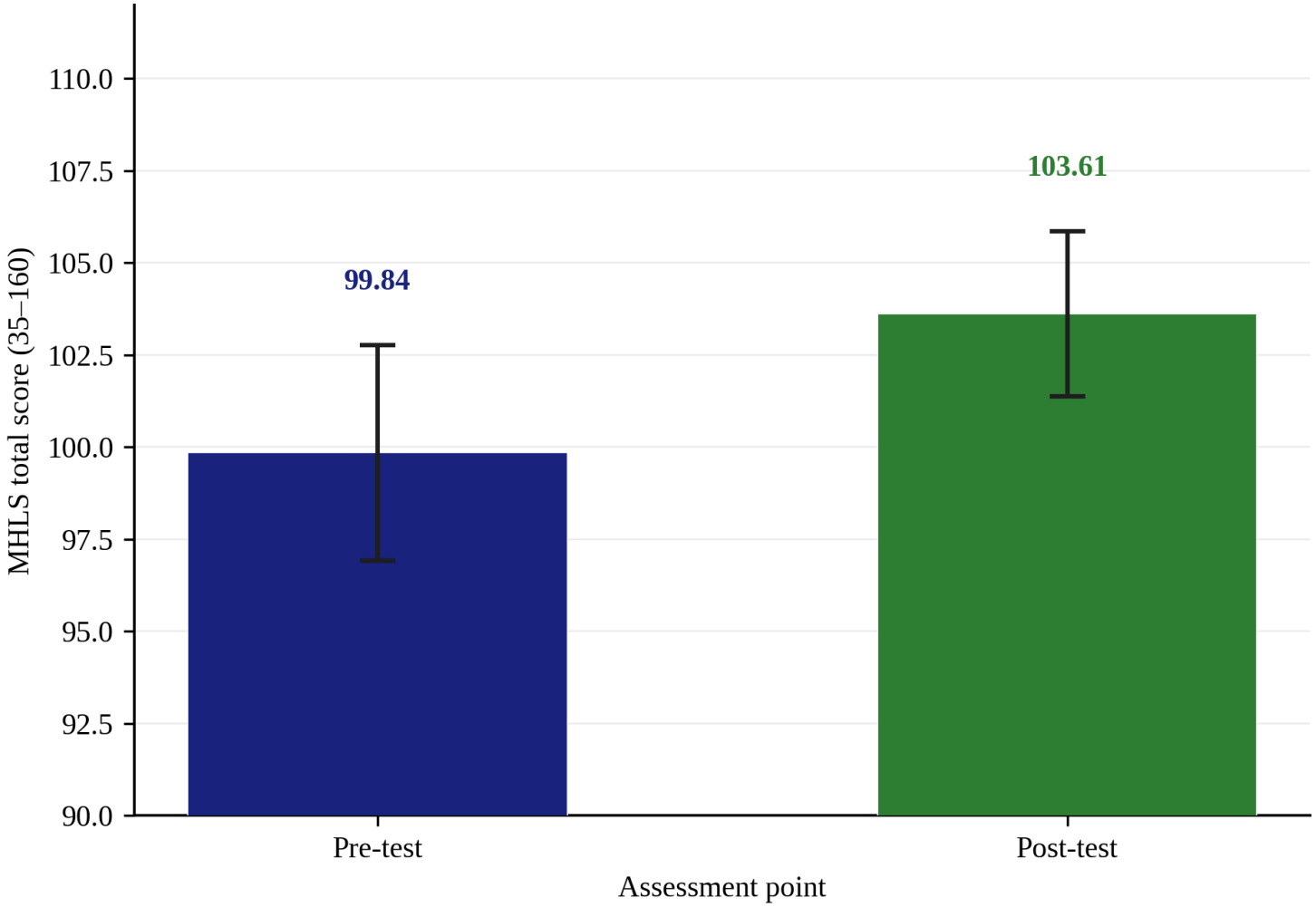


Figure 3

Mean Total MHLS Scores Before and After the Brief Module

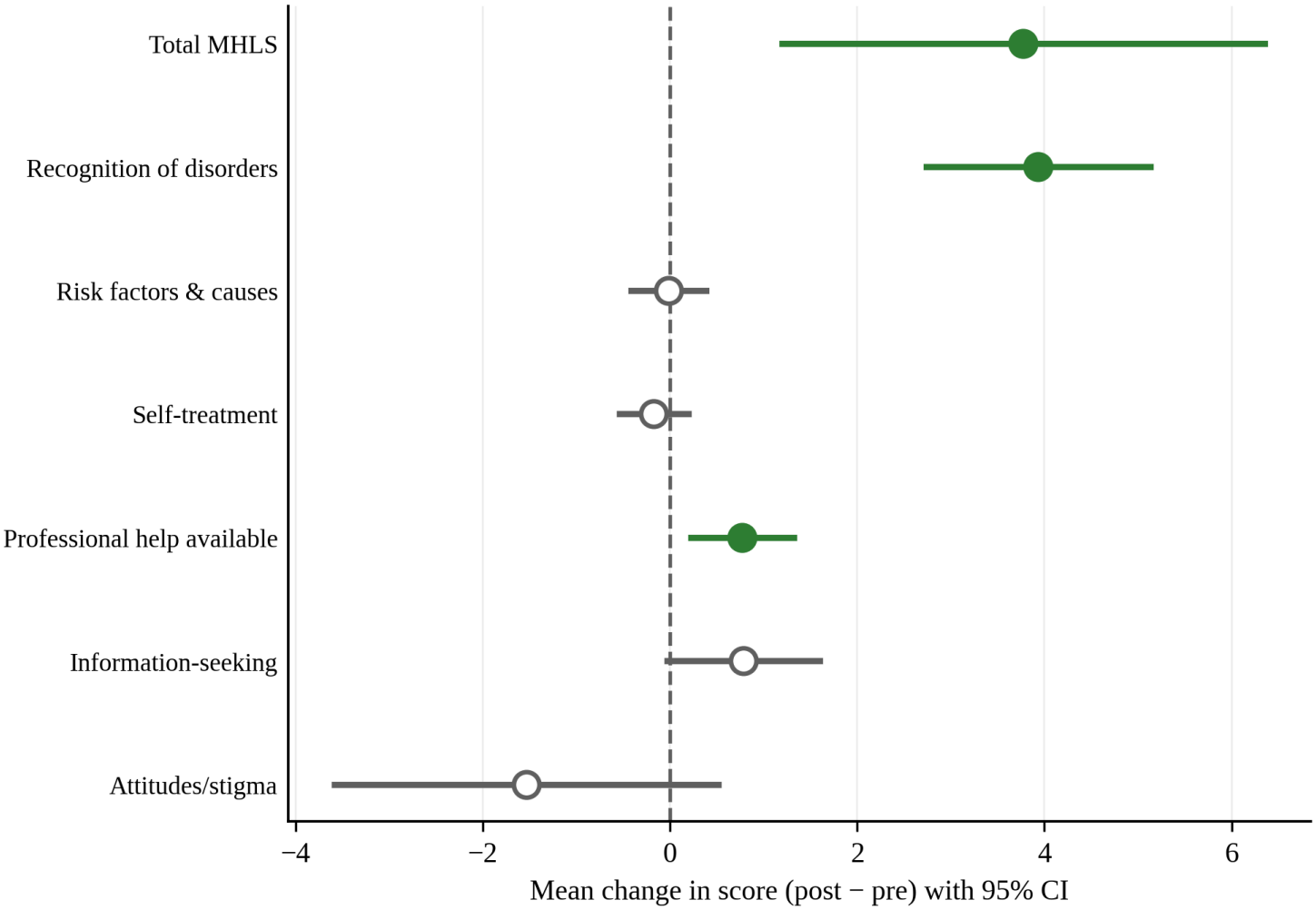


Figure 4

Mean Change in MHLS Total and Domain Scores