

# Development and Preliminary Validation of the Indian Mental Health Education Scale (IMES): A Pilot Study on Reliability and Item Refinement

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## Abstract:

**Background:** Mental health disorders pose a significant public health challenge in India, where a massive treatment gap is driven by stigma, low awareness, and poor service access. Existing Western-developed literacy scales inadequately capture local socio-cultural nuances.

**Objective:** This study developed and preliminarily validated the Indian Mental Health Education Scale (IMES) to assess knowledge, attitudes, stigma, help-seeking behavior, legal awareness, and daily life factors.

**Methodology:** A quantitative cross-sectional pilot study was conducted among 87 general population participants recruited via convenience sampling. Data from an online survey were analyzed using Cronbach's alpha, and items with negative inter-item correlations were removed to improve reliability.

**Results:** Item refinement enhanced internal consistency across all major domains. The attitude domain demonstrated the highest reliability ( $\alpha = 0.725$ ). Despite moderate reliability in certain subscales, the IMES showed promising preliminary internal consistency.

**Conclusion:** The findings highlight the critical need for culturally relevant, psychometrically sound instruments in India. Future large-scale validation using exploratory and confirmatory factor analyses is recommended to establish robust construct validity, ultimately enhancing the scale's utility for research, policy-making, and mental health advocacy.

**Keywords:** Mental Health Literacy; Mental Health Education; Indian Mental Health Education Scale; Reliability; Psychometric Validation

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## Introduction

### Global Mental Health Burden

Mental health disorders represent a significant and growing public health challenge worldwide, contributing substantially to the global burden of disease. According to the World Health Organization (WHO), approximately one in every eight individuals globally lives with a mental disorder, with depression and anxiety among the leading causes of disability (World Health Organization [WHO], 2022). Adolescents and young adults are particularly vulnerable, with nearly 14% of individuals aged 10–19 years experiencing mental health conditions, many of which remain undiagnosed and untreated. These early-onset conditions often persist into adulthood, adversely affecting educational attainment, employment, and overall quality of life.

Despite the high prevalence, there exists a considerable treatment gap, especially in low- and middle-income countries (LMICs), where between 76% and 85% of individuals with mental disorders receive no treatment. In the Indian context, this gap is even more pronounced, with estimates suggesting that 72%–92% of individuals do not receive adequate mental health care, largely due to stigma,

lack of awareness, and limited access to services. Furthermore, approximately 80% of individuals in India do not seek professional help even when experiencing mental health issues, highlighting a critical disconnect between need and utilization of services.

One of the primary determinants underlying this treatment gap is the lack of mental health literacy and education. Mental health literacy encompasses knowledge and beliefs that aid in the recognition, management, or prevention of mental disorders, and it plays a crucial role in shaping help-seeking behavior and reducing stigma (Jorm *et al.*, 1997). Empirical evidence indicates that individuals with higher levels of mental health literacy are more likely to identify symptoms early, engage in appropriate help-seeking, and support others experiencing mental health challenges (Kutcher *et al.*, 2016; Wei *et al.*, 2015). Additionally, educational interventions—particularly those implemented in schools and community settings—have demonstrated effectiveness in improving mental health literacy and reducing stigmatizing attitudes (Olyani *et al.*, 2021; Yan *et al.*, 2022).

Given the scale of the global mental health burden and the persistent treatment gap, enhancing mental

health-related knowledge, attitudes, and behaviors through structured educational frameworks has emerged as a critical public health priority. However, achieving this requires robust, culturally sensitive, and psychometrically sound tools capable of assessing mental health education and literacy within diverse populations.

#### **Mental Health Literacy vs Mental Health Education**

The concept of Mental Health Literacy (MHL) was first introduced by Jorm *et al.* (1997), who defined it as “knowledge and beliefs about mental disorders which aid their recognition, management, or prevention.” Over time, this construct has evolved to include multiple dimensions such as the ability to recognize mental disorders, knowledge of risk factors and causes, awareness of professional help available, attitudes that facilitate recognition and help-seeking, and knowledge of self-help strategies (Jorm, 2012). Subsequent refinements have further emphasized the inclusion of stigma reduction and help-seeking efficacy as core components of MHL (Kutcher *et al.*, 2013).

While MHL has been widely studied and operationalized in various international contexts, significant conceptual and methodological limitations persist. Notably, there is no universally standardized definition or measurement framework, and existing tools often fail to capture the multidimensional nature of mental health knowledge, attitudes, and behaviors comprehensively (Kutcher *et al.*, 2016; Spiker & Hammer, 2018). Furthermore, many scales have been developed and validated primarily in Western populations, limiting their cultural applicability and relevance in non-Western contexts such as India.

In response to these limitations, there has been a growing recognition of the need to move beyond the narrow construct of literacy toward a broader and more holistic framework of Mental Health Education (MHE). Unlike literacy, which primarily emphasizes knowledge and recognition, mental health education encompasses a wider spectrum, including attitudes, beliefs, stigma reduction, help-seeking behaviors, coping strategies, and socio-cultural influences. As highlighted in the present PhD framework, mental health education is conceptualized as a state of awareness characterized by adequate knowledge, adaptive attitudes, reduced stigma, and the ability to take appropriate actions to maintain and promote mental well-being within one’s social context.

The distinction between MHL and MHE is particularly important in culturally diverse settings like India, where mental health is deeply intertwined with social norms, religious beliefs, family structures, and systemic barriers. Existing MHL scales often do not account for these contextual variables, such as the role of stigma, patriarchy, social media, and cultural beliefs, which

significantly influence mental health perceptions and behaviors. Consequently, there is a critical need for a contextually grounded, psychometrically robust instrument that captures the broader construct of mental health education within the Indian population.

Addressing this gap, the present study contributes to the development and preliminary validation of the Indian Mental Health Education Scale (IMES), designed to assess multiple dimensions of mental health education in a culturally relevant and comprehensive manner.

#### **Indian Context**

India presents a uniquely complex mental health landscape characterized by a high burden of mental disorders, substantial treatment gaps, and systemic challenges in service delivery. Epidemiological evidence suggests that approximately 14% of the Indian population is affected by mental health conditions, with projections indicating a continued rise in prevalence in the coming years. Despite this significant burden, access to mental health care remains severely limited. The treatment gap in India ranges between 72% and 92%, indicating that a vast majority of individuals with mental health conditions do not receive appropriate or timely intervention.

Multiple structural and socio-cultural factors contribute to this gap. These include a critical shortage of mental health professionals, inequitable distribution of services, financial constraints, and pervasive stigma associated with mental illness. Notably, it is estimated that nearly 80% of individuals in India do not seek professional help even when experiencing psychological distress. This reluctance is often rooted in poor awareness, misconceptions about mental health, and sociocultural beliefs that discourage open discussion and help-seeking.

A key underlying issue exacerbating these challenges is the lack of standardized and culturally relevant assessment tools to measure mental health awareness, attitudes, and education in the Indian population. While several international instruments exist to assess mental health literacy, their applicability in the Indian context is limited due to differences in language, cultural norms, belief systems, and social determinants of health. Existing tools often fail to capture culturally specific constructs such as the influence of family dynamics, religious beliefs, stigma, patriarchy, and community-level perceptions, all of which significantly shape mental health understanding and behavior in India.

Consequently, the absence of a validated, comprehensive, and culturally adapted scale restricts the ability of researchers and policymakers to accurately assess mental health education levels, identify gaps, and design targeted interventions. Addressing this limitation is critical for advancing

mental health promotion strategies and reducing the treatment gap in India.

### Research Gap

Despite the growing body of research on mental health literacy globally, several critical gaps persist, particularly in the context of measurement and cultural adaptation. First, there is a notable absence of a standardized, culturally grounded instrument specifically designed to assess mental health education within the Indian population. Existing measures, such as the Mental Health Literacy Scale (MHLS), have been developed and validated primarily in Western contexts and may not adequately reflect the socio-cultural realities of low- and middle-income countries (O'Connor & Casey, 2015; Kutcher *et al.*, 2016).

Second, current instruments often adopt a fragmented approach, focusing on isolated components such as knowledge, stigma, or help-seeking behavior, rather than integrating these dimensions into a unified framework. Systematic reviews have highlighted that many tools fail to comprehensively assess all attributes of mental health literacy, including recognition, prevention, stigma reduction, and help-seeking efficacy (Wei *et al.*, 2015; Chaves *et al.*, 2022). This lack of comprehensiveness limits the interpretability and utility of findings, particularly when designing multidimensional interventions.

Third, there remains conceptual ambiguity in defining and operationalizing mental health literacy, with no universally accepted framework encompassing all relevant constructs (Spiker & Hammer, 2018). This has led to inconsistencies in measurement and challenges in comparing findings across studies and populations. In the Indian context, these limitations are further compounded by the absence of culturally sensitive constructs that capture locally relevant determinants such as social stigma, familial influence, religious beliefs, and systemic barriers.

Finally, prior research has emphasized the lack of psychometrically robust, validated scales capable of assessing mental health literacy across diverse populations, particularly in non-Western settings (Kutcher *et al.*, 2016). The need for instruments that demonstrate strong reliability, validity, and cultural relevance is therefore critical.

In light of these gaps, there is a clear need for the development and validation of a comprehensive, culturally adapted, and psychometrically sound instrument that extends beyond traditional literacy constructs to encompass the broader domain of mental health education in India.

### Study Objective

Addressing the aforementioned gaps, the present study aims to contribute to the development and preliminary validation of the Indian Mental Health Education Scale (IMES). Conceptualized as a multidimensional instrument, IMES is designed to

assess not only knowledge of mental health but also attitudes, stigma, help-seeking behavior, and awareness of socio-cultural and systemic factors influencing mental health.

The primary objective of this study is to conduct a pilot validation of the IMES, focusing on evaluating its internal consistency and refining its item structure. Specifically, the study seeks to:

- Undertake a pilot study using the developed IMES instrument among a sample of participants from the general population
- Assess the internal consistency reliability of the scale using Cronbach's alpha coefficient, a widely accepted measure of scale reliability
- Identify and remove items with poor or negative inter-item correlations to improve the overall reliability and coherence of the scale
- Finalize the set of items to be retained for subsequent large-scale validation and factor analysis

By establishing the preliminary reliability of the IMES, this study lays the foundation for future research aimed at comprehensive psychometric validation, including exploratory and confirmatory factor analyses, and assessment of construct validity. Ultimately, the development of IMES is expected to facilitate more accurate measurement of mental health education in India and support evidence-based policy and intervention design.

### Methodology

#### Study Design

The present study employed a quantitative cross-sectional design to conduct a pilot validation of the Indian Mental Health Education Scale (IMES). The primary focus was to assess the internal consistency and preliminary reliability of the instrument.

#### Participants

A total of 87 participants were included in the pilot study, as reflected in the collected dataset. Participants were drawn from the general population using a convenience sampling approach.

#### Inclusion Criteria

- Individuals aged 13 years and above
- Ability to read and understand English
- Willingness to provide informed consent

#### Exclusion Criteria

- Individuals below 13 years of age
- Persons with cognitive impairments affecting comprehension

These criteria were aligned with the broader research framework outlined in the study design.

Instrument: Indian Mental Health Education Scale (IMES)

The IMES is a self-administered questionnaire developed to assess multiple dimensions of mental health education within the Indian context. The

instrument utilizes a 5-point Likert scale, with responses ranging from strong disagreement to strong agreement.

The scale is structured across several key domains, reflecting a comprehensive conceptualization of mental health education:

- Knowledge (awareness of mental health conditions and determinants)
- Stigma (personal and social stigma-related attitudes)
- Help-seeking behavior (willingness and awareness of seeking professional help)
- Attitudes (orientation toward mental health and well-being)
- Legal awareness (knowledge of mental health services, rights, and policies)
- Daily life factors (understanding the influence of lifestyle, stress, and environmental factors on mental health)

These domains are derived from the operational definition and attributes of mental health education proposed in the study framework .

#### Data Collection

Data were collected using an online survey platform (KoBoToolbox). Participants accessed the questionnaire through a shared survey link and completed the responses electronically. Participation was voluntary, and responses were recorded anonymously to ensure confidentiality and reduce response bias.

#### Statistical Analysis

Data analysis was conducted to evaluate the internal consistency reliability of the IMES.

- Cronbach’s alpha coefficient was computed for each component of the scale to assess internal consistency
- Item-total correlations were examined to identify poorly performing items
- Items exhibiting negative inter-item correlations were removed to improve scale reliability

This process resulted in improved Cronbach’s alpha values across multiple components, indicating enhanced internal consistency following item refinement.

#### Results

##### Descriptive Statistics

Descriptive statistics were computed to summarize the demographic characteristics of the study participants. The sample consisted of 87 respondents, representing individuals from the general population.

Key demographic variables, including age, gender, educational background, and other relevant characteristics, were collected as part of the survey. A detailed summary of these variables is presented in Table X (to be inserted based on dataset analysis). (Note: Insert table with frequencies and percentages for demographic variables from the Excel dataset.)

##### Reliability Analysis

The internal consistency of the Indian Mental Health Education Scale (IMES) was assessed using Cronbach’s alpha coefficient. Initial reliability estimates indicated moderate to low internal consistency across several components.

Subsequently, items with negative inter-item correlations were identified and removed to improve scale coherence. This refinement resulted in a notable increase in Cronbach’s alpha values across all major components.

Table 1. Component-wise Reliability Analysis Before and After Item Refinement

Component	Initial Alpha	Revised Alpha	Items Removed
Knowledge (Daily Life Factors)	0.615	0.671	6
Stigma Resistance	0.464	0.581	4
MH Services & Legal Knowledge	0.412	0.546	2
Attitude Toward Positive Mental Health	0.650	0.725	1

Source: Reliability analysis of IMES pilot data

The results demonstrate that item refinement led to improved internal consistency, particularly in components related to attitudes and knowledge. However, certain components continued to exhibit moderate reliability, indicating the need for further scale development and validation.

#### Key Findings

The reliability analysis yielded several important findings:

- Improvement across all components: Removal of items with negative inter-item correlations resulted in consistent increases in Cronbach’s alpha values across all domains
- Identification of weak items: Several items were found to negatively impact internal consistency, highlighting areas requiring revision or removal
- Component-level variability: While some components (e.g., attitudes) achieved acceptable reliability, others remained in the moderate range, suggesting partial construct stability
- Unreliable component: One component (Component 1) demonstrated very low initial reliability and was excluded from further analysis, indicating the need for substantial revision before inclusion in subsequent validation stages

Overall, these findings support the preliminary reliability of the IMES following item refinement, while also underscoring the need for further psychometric evaluation.

#### Discussion

##### Interpretation of Reliability

The present study aimed to evaluate the preliminary reliability of the Indian Mental Health Education Scale (IMES) through a pilot analysis. The findings indicate that internal consistency improved across all components following item refinement, as evidenced by increased Cronbach's alpha coefficients. While a threshold of  $\alpha \geq 0.70$  is generally considered acceptable for established scales, slightly lower values are often deemed acceptable in early-stage instrument development and pilot studies (Taber, 2018).

In this context, the observed improvements in reliability after removing items with negative inter-item correlations suggest that the refinement process was effective in enhancing scale coherence and homogeneity. This aligns with established psychometric practices, where iterative item analysis is a critical step in scale development to ensure that retained items adequately represent the underlying construct (DeVellis, 2017). However, the persistence of moderate reliability in certain components indicates the need for further refinement and large-scale validation.

#### Comparison with Existing Scales

The development of IMES responds to limitations identified in existing mental health literacy instruments, particularly the Mental Health Literacy Scale (MHLS) developed by O'Connor and Casey (2015). While the MHLS is widely used and demonstrates strong psychometric properties, it was primarily validated within Western populations and may not fully capture the socio-cultural dynamics influencing mental health understanding in non-Western contexts.

Previous research has highlighted that many mental health literacy tools suffer from limited cultural adaptability and incomplete coverage of relevant constructs, particularly in low- and middle-income countries (Kutcher *et al.*, 2016; Wei *et al.*, 2015). Furthermore, existing scales often emphasize knowledge and recognition while underrepresenting contextual factors such as stigma, societal norms, and structural barriers.

In comparison, IMES adopts a broader and more integrative framework, incorporating domains such as attitudes, stigma, help-seeking behavior, and awareness of systemic and cultural influences. This multidimensional approach addresses the need for more comprehensive instruments capable of capturing the complexity of mental health education in diverse populations.

#### Cultural Relevance of IMES

A key strength of the IMES lies in its explicit integration of culturally relevant variables that shape mental health perceptions and behaviors in the Indian context. Unlike existing instruments, the scale incorporates dimensions related to:

- Stigma, both internalized and societal, which remains a major barrier to help-seeking in India

- Patriarchal norms, which influence gendered experiences of mental health and access to care
- Religious and spiritual beliefs, which often serve as both coping mechanisms and barriers to professional intervention
- Social media and lifestyle factors, which are increasingly recognized as influential determinants of mental well-being

These factors are deeply embedded within the socio-cultural fabric of Indian society and have been identified as critical determinants of mental health literacy and help-seeking behavior. Prior studies have similarly emphasized the role of socio-cultural context in shaping mental health attitudes and behaviors, underscoring the need for culturally adapted measurement tools (Gaiha *et al.*, 2014; Chaves *et al.*, 2022).

By incorporating these dimensions, IMES moves beyond a purely cognitive assessment of knowledge to a more holistic evaluation of mental health education, thereby enhancing its contextual relevance and applicability.

#### Theoretical Integration

The conceptual foundation of IMES is supported by established psychological theories that explain the relationship between knowledge, attitudes, and behavior.

The Theory of Planned Behavior (Ajzen, 1991) provides a useful framework for understanding how mental health knowledge and attitudes influence help-seeking intentions and behaviors. According to this model, behavioral intentions are shaped by attitudes, subjective norms, and perceived behavioral control—factors that are explicitly addressed within the IMES framework.

Similarly, Goffman's (1963) theory of stigma offers critical insights into how societal labeling and stereotyping contribute to discrimination and social exclusion of individuals with mental illness. The inclusion of stigma-related constructs in IMES aligns with this theoretical perspective and reflects the importance of addressing stigma as a core component of mental health education.

Additionally, Social Cognitive Theory (Bandura, 1986) emphasizes the role of observational learning, social context, and self-efficacy in shaping behavior. This is particularly relevant in the context of mental health, where beliefs, social influences, and perceived competence significantly affect help-seeking and coping behaviors.

Together, these theoretical frameworks support the multidimensional structure of IMES, reinforcing its conceptual validity and relevance for understanding mental health education as an interplay of knowledge, attitudes, and socio-environmental influences.

**Implications:** The findings of this study have several important implications for research, policy, and practice.

### Policy Implications

The development of a standardized and culturally relevant scale such as IMES provides a foundation for **large-scale assessment of mental health education across India**, potentially enabling initiatives such as a **mental health literacy census**. Such data can inform targeted policy interventions aimed at reducing the treatment gap and improving access to care.

### Educational Implications

IMES can serve as a valuable tool for evaluating the effectiveness of **mental health education programs in schools, colleges, and workplaces**. Evidence suggests that structured educational interventions can significantly improve mental health literacy and reduce stigma (Olyani *et al.*, 2021; Yan *et al.*, 2022), and IMES offers a means to systematically assess these outcomes.

### Community-Level Implications

At the community level, the scale can help identify **specific gaps in awareness, attitudes, and help-seeking behavior**, enabling the design of culturally sensitive interventions. Given the influence of informal networks and community structures in India, such targeted approaches are essential for promoting mental health awareness and reducing stigma (Gaiha *et al.*, 2014).

Overall, the IMES has the potential to function as a **strategic tool for bridging the gap between mental health awareness and actionable behavior**, thereby contributing to improved mental health outcomes at both individual and societal levels.

### Limitations & Conclusion

The present study is subject to certain limitations that should be acknowledged when interpreting the findings. First, the relatively small sample size (N = 87), characteristic of a pilot study, limits the generalizability of the results. Second, the study focused primarily on internal consistency reliability, and more advanced psychometric analyses such as exploratory and confirmatory factor analysis (EFA and CFA) have not yet been conducted to establish the underlying factor structure of the scale. Additionally, the use of a self-report instrument may introduce response biases, including social desirability and subjective interpretation of items. Despite these limitations, the findings indicate that the Indian Mental Health Education Scale (IMES) demonstrates promising internal consistency following item refinement, supporting its potential as a reliable tool in its preliminary form. The scale is therefore well-positioned for large-scale validation, with the potential to evolve into a national-level instrument for assessing mental health education in India. Future research should focus on conducting EFA and CFA to establish construct validity, examining convergent validity with established measures such as MHLS, SASS, and IASMHS, and administering the scale to a larger

and more diverse Indian population to enhance its robustness and generalizability.

Si Pa Elantamil Komahan: Conceptualization and Design, Analysis and Interpretation, Draft of Original manuscript.

Dr Sunita Dhenwal: Review of draft manuscript, Supervision.

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