Mental Health Awareness, Stigma, and Help-Seeking Intention in an Indian Tier-II City: Evidence from a Structural Equation Model

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ABSTRACT

Stigma towards mental illness has been the biggest obstacle to care-seeking in the metropolitan zing Indian cities. The study was a cross-sectional survey conducted on the awareness of mental health, patterns of mental health stigma, and stigma-reduction strategies among Vadodara, Gujarat residents (N = 250). The hypothesized pathways of a structural equation model (SEM) were evaluated between Mental Health Awareness (MHA), Stigma Perception (STIG), Socio-Demographic Factors (SDF) and Program Exposure (PROG) on Help-Seeking Intention (HSI) as the mediator and Mental Health Outcome (MHO) as the distal outcome. The model fit was good (chi-square/df = 1.94; CFI = 0.953; RMSEA = 0.061). Stigmatization was found to have a significant and negative correlation with MHA ($\beta = -0.42$, $p < .001$); stigmatization was found to have a negative relationship with help-seeking intention ($\beta = -0.38$, $p < .001$). Program exposure had a most significant direct influence on HSI ($\beta = 0.51$, $p < .001$), and HSI significantly forecasted MHO ($\beta = 0.63$, $p < .001$). The indirect MHA-to-MHO had a significant positive ($\beta = 0.10$, $p = .001$), which verified partial mediation. Multi-group analysis affirmed gender and educational attainment as important moderator variables. There was no threat of common method variance (Harman single factor = 31.4%). Findings show that culturally sensitive multi-modal interventions that incorporate community champions, task-sharing counselors, and online outreach are necessary to enhance treatment gap in Tier-II Indian cities. These results indicate that awareness campaigns are not enough; well-structured community-based interventions are important in transforming awareness to behavioral help-seeking.

Keywords: *mental health stigma; awareness; Vadodara; India; structural equation modeling; help-seeking intention; community intervention; LMIC; Gujarat*

INTRODUCTION

Mental disorders impact on the lives of about a billion individuals all over the world and are one of the primary causes of disability on a global scale (World Health Organization [WHO], 2022). In low- and middle-income countries (LMICs), like India, less than a quarter of those with the disease get any kind of evidence-based intervention-a structural inequality which Patel et al. (2018) described as the treatment gap. One of the processes that contribute to this gap is stigma, which includes public stigma, self-stigma, and structural stigma, which take the leading position (Corrigan and Watson, 2002; Thornicroft et al., 2016).

The burden of mental health is high in India. The National Mental Health Survey (NIMHANS, 2016) has approximated prevalence of some mental disorder in 14 per cent of the Indian population- about 197 million people, where depressive and anxiety disorders were the most prevalent. However, the number of psychiatrists is less than 0.30 per 100, 000 people, much lower than recommended by WHO (WHO, 2021). Stigma-reduction strategies and community-level awareness, in this regard, can be seen as some of the most cost-effective levels, which can be deployed by the public health systems.

The 3rd largest city in Gujarat and a big educational and industrial center, Vadodara (Baroda) is quite controversial in this regard. The city has around 2.5 million inhabitants (2024 projection), which presents a heterogeneous sociodemographic makeup: its residents include students, healthcare professionals, factory workers, and inhabitants of urban slums, each with unique mental health pressure and stigma dynamics. Although a growing compilation of local programs has been implemented locally, such as awareness-stigma-program exposure-help-seeking pathways, no peer-

reviewed research has implemented a structural equation modeling (SEM) framework to test awareness-stigma-program exposure-help-seeking pathways in Vadodara or any other Tier-II Indian city.

The following research fills that gap. The study utilizes a cross-sectional survey (N = 250) to measure a structural equation of Mental Health Awareness (MHA), Stigma Perception (STIG), Socio-Demographic Factors (SDF), and Program Exposure (PROG) as predictors of Mental Health Outcome (MHO) and Help-Seeking Intention (HSI) guided by the social cognitive theory (Bandura, 1986), the Theory of Planned Behavior (Ajzen, 1991), and the concept of the Contact H This paper is organized in the following way: Section 2 is the review of theoretical framework and literature; Section 3 is the research hypotheses; Section 4 is the methodology; Section 5 is the results including measurement and structural model results; Section 6 briefs implications; Section 7 provides the conclusion with recommendations.

1.1 Research Objectives of the Study

General Objective

To examine how mental health awareness, stigma perception, socio-demographic characteristics, and exposure to mental health programs influence help-seeking intention and mental health outcomes among residents of Vadodara, India.

Specific Objectives

1. To assess the level of mental health awareness and stigma perception among residents of Vadodara city.
2. To examine the relationship between mental health awareness and stigma perception.
3. To investigate the effect of stigma perception on individuals' intention to seek professional mental health support.
4. To evaluate the influence of mental health awareness program exposure on help-seeking intention.
5. To analyze whether help-seeking intention mediates the relationship between awareness, stigma, and mental

2. Literature review and theoretical framework.

2.1 Theoretical Underpinnings

The theoretical model is based on three theoretical traditions that are complementary to each other. First, the Social Cognitive Theory (SCT; Bandura, 1986) assumes the impact of the triadic interplay between personal cognitions (including health literacy), behavioral enactment, and environmental factors on health behavior. SCT suggests that increasing awareness (cognitive) and, at the same time, altering the norms of social stigma (environmental) may have a positive and synergistic effect on help seeking behavior- driving the MHA - STIG - HSI pathway.

Second, the Theory of Planned Behavior (TPB; Ajzen, 1991) states that the behavioral intention is the nearest determinant of overt behavior, and in turn, it is predicted by the attitudes, subjective norms and perceived behavioral control. Within the mental health setting, stigma is a strong negative subjective norm that inhibits seeking of help, despite having awareness about mental health problems--a direct driver of STIG - HSI - MHO chain in the model.

Third, the Contact Hypothesis (Allport, 1954; operationalized in anti-stigma studies by Corrigan et al., 2012) is the hypothesis that organized contact with persons with lived experience of mental illness can decrease the stigma held by the public, replacing stereotypes with specific knowledge. This process forms the basis of the PROG - HSI pathway: exposure to the program opens contact opportunities that alter subjective norms and subsequently lead to the boost of behavioral intention.

2.2 Mental Health Stigma: Evidence from India and Gujarat

Stigma related to mental illness has three mutually reinforcing elements: public stigma (stereotypes and prejudice in the society), self-stigma (unfortunately, the affected person takes these stereotypes on board), and structural stigma (policies of organizations discriminating against these people; Corrigan and Watson, 2002; Thornicroft et al., 2016). The meta-analytic results of Schnyder et al. (2017) in 51 studies have proven that there is a significant negative correlation between high mental health literacy and stigma ($r = 0.37$) and a significant positive correlation between high mental health literacy and help-seeking intention ($r = 0.29$).

Culturally specific ways of explaining mental illness, which include supernatural explanations, karmic punishment or failure of morals, reinforce stigma (Raguram et al., 2004). Importantly, in a cross-sectional survey of ASHA and Anganwadi frontline health workers in Vadodara District (N = 231), Shah et al. (2019) discovered that, although 84.4% supported the idea of psychiatric care, more than half believed in stigmatizing beliefs such as the belief that mentally ill people are unpredictable or dumb. This highlights the fact that the health-system proximal actors are not free of stigma, making it difficult to refer and outreach.

A study exploring barriers to mental health services accessibility in rural Vadodara (Patel B. et al., 2023) concluded that 57 per cent of the participants reported large barriers, and that female patients and those with an inferior level of education were significantly more likely to report barriers. This intersects with results of national surveys (NIMHANS, 2016) that indicate educational attainment and gender have a significant moderating effect on help-seeking rates.

2.3 Evidence-Based Stigma Reduction Strategies

An emerging literature of Indian RCT and program evaluation has suggested several strategically relevant modalities.

Community champion models. The implementation of Atmiyata programme (Pathare et al., 2023) in 645 villages of the Mehsana District of Gujarat in a stepped-wedge cluster RCT, involved training local volunteers, who were to identify, counsel and refer individuals with common mental disorders. The trial showed that it was effective in reducing anxiety/depression symptoms (PHQ-9, GAD-7, SRQ-20), increased social participation, and better help-seeking attitudes. The destigmatizing process worked by the normalization of mental health discourse by recognizable members of the community by decreasing social distance.

Models of task-sharing and lay counselors. The MANAS trial in Goa (Patel et al., 2010) was a groundbreaking cluster RCT which showed that a stepped-care model with trained lay health counselors (LHCs) under supervision of mental health specialists achieved clinically important improvement of common mental disorders and proved cost effective. The MANAS framework has been most critically assessed template of task sharing that could be applied to the urban health center's in Vadodara.

Short-term formalized psychological interventions. Healthy Activity Programme (HAP; Weobong et al., 2017) is a short-term behaviorally activated intervention that was used in primary care environments by lay counselors and showed clinically significant depressive symptom reduction (12-month follow-up RCT) which, in addition to treating the disorder, also leads to the theorist reducing the othering of psychiatric care.

Community workshops based on video. Agarwal et al. (2020) assessed a video-based tool created by the government in 17 villages of Vadodara District (N = 711) and found statistically significant changes in the attitudes to psychosis, suicidal ideation, and postpartum depression ($p < .005$). It is important to note that substance abuse attitude was not easily changed and hence the necessity of condition-specific conditioning messaging approaches.

School-based interventions. Weiss et al. (2017) reported that school-based interventions that included psychoeducation and training of teachers yielded positive results in terms of a rise in mental health literacy and a decrease in stigma among adolescents. The student and teacher awareness and decreased self-stigma reported by the MINDS Foundation workshop in Bright Day School, Vadodara (Warren, 2018) were immediate.

Online and tele-mental health. The scale of counselor competency and the privacy protection ensured by tele-supervision models describe the viability of digital-training platforms in Gujarat by Tugnawat et al. (2024), and it is a valid point that the concept of social visibility causes many urban residents to avoid face-to-face psychiatric consultations.

2.4 Policy Framework

The right to access mental healthcare (Section 18) is enshrined in the Mental Healthcare Act (MHCA) 2017 and actively forbids discrimination and requires confidentiality as the main ideas behind anti-stigma messages (Government of India, 2017). The commitment of India to the WHO Comprehensive Mental Health Action Plan 2013-2030 (WHO, 2013) requires the scaling up of community mental health services, training of non-specialists, and a systematic monitoring of stigma and service coverage. These theories give the structural reference points where the intervention recommendations in this study are reviewed.

3. RESEARCH HYPOTHESES

Based on the theoretical framework and the reviewed literature, the hypotheses were as follows:

H1a: Stigma perception (STIG) and mental health awareness (MHA) have a significant and negative correlation.

H1b: The perception of stigma (H1b STIG) has a negative and significant correlation with help-seeking intention (HSI).

H2: MHA - STIG and PROG - HSI relationships are highly moderated by socio-demographic factors (SDF) i.e., gender and educational attainment.

H3: The increase in exposure to mental health awareness programs (PROG) is strongly and positively linked to the help-seeking intention (HSI).

H4: Mental health outcome (MHO) is significantly and positively predicted by aid-seeking intention (HSI), and mediate the variable between the antecedent constructs and MMO.

H5: Mental health awareness (MHA) positively influences mental health outcomes (MHO) directly in addition to the mediated pathway.

4. RESEARCH METHODOLOGY

4.1 Research Design

The present study adopted a descriptive cross-sectional research design based on a quantitative primary survey, supported by a review of relevant literature on locally grounded mental health interventions. The cross-sectional approach enabled the study to capture and describe the levels of mental health awareness, stigma perception, program exposure, and help-seeking intention among respondents at a single point in time. This design is particularly appropriate for estimating the prevalence and distribution of these variables within the study population and for identifying observable patterns and associations without inferring causal relationships. **4.2 Study Setting and Population**

This research was done in Vadodara city, Gujarat, India. The sample population was adults (18 years) who lived in Vadodara--patients who visit outpatient mental health facilities, family members, college students, healthcare workers, and community members--which guaranteed the representation of the different socioeconomic and educational levels that were considered analytically important in literature (Shah et al., 2019; Patel B. et al., 2023).

4.3 Sampling and Sample Size

The study employed a purposive stratified convenience sampling technique. Respondents were recruited in proportional numbers from four types of sites: outpatient mental health clinics and hospitals, higher education institutions, corporate workplaces, and community centers and public spaces. This stratification ensured adequate representation of diverse occupational and socio-demographic groups within the study population. The final sample comprised a total of **250 participants**, which was considered sufficient to achieve the objectives of the study.

4.4 Data Collection Instrument

A questionnaire was created to be a structured, self-end-user questionnaire in both English and Gujarati (independently back-translated; kappa = 0.84). The tool consisted of four parts:

Section A - Demographic Data: Age, sex, education level, profession, and exposure to the previous awareness programs.

Section B – Mental Health Awareness (MHA): A 10-item scale based on the Mental Health Knowledge Schedule (MAKS; Evans-Lacko et al., 2010) with a 5-item scale being graded on a 5-item scale. The a of Cronbach in the current sample is 0.81.

Section C - Stigma Perception (STIG): A 12-item composite that includes items of Reported and Intended Behavior Scale (RIBS; Evans-Lacko et al., 2011) and Self-Stigma of Mental Illness Scale-Short Form (SSMIS-SF; Corrigan et al., 2012). Cronbach's a = 0.78.

Section D – Help-Seeking Intention (HSI) and Mental Health Outcome (MHO): Eight items based on the General Help-Seeking Questionnaire (Wilson et al., 2005) and WHO Disability Assessment Schedule 2.0 (WHODAS 2.0).

The expert review was conducted by two clinical psychologists and one public health specialist in order to determine the content validity. Construct validity and reliability were established through confirmatory factor analysis (CFA) before the estimation of SEM. The common method variance assessment is conducted to evaluate the consistency of the results in the research methodologies.

4.5 Common Method Variance Assessment

The common method variance assessment is performed to test the uniformity of the findings in the research methods.

Since this research was based on cross-sectional survey of a single source, common method bias was potential and thus evaluated by Harman single common factor test (Podsakoff et al., 2003). Everything was put in an unrotated form of exploratory factor analysis; the largest factor explained only 31.4% of total variance, which is much less than the recommended 50 percent. The full collinearity test was performed, too: all the VIF values were less than 3.5 (range: 1.18-3.31), all the tolerance values were greater than 0.29. These findings suggest that common method variance (CMV) was not significant in threatening the findings.

4.6 Analytical Strategy

IBM SPSS Statistics 26.0 was used to analyze the data in terms of descriptive statistics and AMOS 26.0 to analyze data in terms of structural equation modeling. The structural model was preceded by confirmatory factor analysis (CFA) to determine the quality of the measurements. The maximum likelihood estimation (MLE) was then used to estimate the entire SEM.

The goodness of fit was measured in terms of: kh2/df (acceptable 3.0), Comparative Fit Index (CFI 0.95), Tucker-Lewis Index (TLI 0.95), Root Mean square Error of Approximation (RMSEA 0.08, 90% CI), and Standardized root mean square Residual (SRMR 0.08; Hu and Bentler, 1999; Kline, 20 Estimating indirect effects with bias corrected confidence intervals was done using bootstrapping of 5,000 resamples. Gender and education became the moderators that were tested using multi-group SEM through the constrained model chi-square difference test (Dkh2).

The Institutional Ethics Committee, Parul University provided ethical approval. Informed consent was signed by all participants. There were anonymity and confidentiality.

5. RESULTS

5.1 Participant Characteristics

The sociodemographic profile of the study sample (N = 250) is offered in Table 1. The sample size was relatively gender-balanced (51.2% male; 47.2% female; 1.6% other/non-binary). The highest age group was 18-30 years (42.0%), which is in line with the urban population of Vadodara. The greatest educational group (37.6%), and the greatest occupational group (29.2%), were graduates. About 64.4% of the respondents indicated that they had been exposed to mental health awareness program before.

Table 1. Sociodemographic Characteristics of Study Sample (N = 250)

Variable	Category	n (%)	Mean ± SD
Gender	Male	128 (51.2%)	—
	Female	118 (47.2%)	—
	Non-binary / Other	4 (1.6%)	—
Age Group	18–30 years	105 (42.0%)	25.4 ± 6.1
	31–45 years	87 (34.8%)	38.2 ± 4.3
	46–60 years	43 (17.2%)	51.9 ± 4.0
	> 60 years	15 (6.0%)	66.3 ± 5.5
Education	Up to Secondary	52 (20.8%)	—
	Higher Secondary / Diploma	68 (27.2%)	—
	Graduate	94 (37.6%)	—
	Postgraduate & above	36 (14.4%)	—
Occupation	Student	73 (29.2%)	—

	Healthcare worker	38 (15.2%)	—
	Other professional	82 (32.8%)	—
	Homemaker / Unemployed	57 (22.8%)	—
Prior Awareness Exposure	Yes	161 (64.4%)	—
	No	89 (35.6%)	—

Note. Percentages may not sum to 100% due to rounding. M and SD are presented for continuous age data only.

5.2 Descriptive Statistics and Reliability of the Latent Constructs.

Table 2 shows mean, standard deviations, skewness, kurtosis, internal consistency (Cronbach a), composite reliability (CR), and average variance extracted (AVE) of all the latent constructs. The skewnesses were all in the range of 1 to +1, which is in favor of the normality assumption of MLE. A range of Cronbach is 0.72-0.81 (all greater than 0.70). All constructs had CR values above 0.77. The values of AVE were between 0.48 and 0.58; the AVE of STIG was slightly below the value of 0.50 (AVE = 0.48) whereas CR = 0.80 was above the threshold and the Fornell-Larcker criteria verified the discriminant validity (AVE = 0.69 > all inter-construct correlations; Fornell and Larcker, 1981). Therefore, the measurement model is acceptable in the estimation of SEM.

Table 2. Descriptive Statistics, Internal Consistency, and Construct Reliability (N = 250)

Construct	M	SD	Skew	Kurt	α	CR	AVE
Mental Health Awareness (MHA)	3.61	0.74	−0.18	0.12	0.81	0.84	0.57
Stigma Perception (STIG)	3.28	0.81	0.24	−0.09	0.78	0.80	0.48*
Socio-Demographic Factors (SDF)	—	—	—	—	0.72	0.77	0.53
Program Exposure (PROG)	3.44	0.69	−0.11	0.07	0.79	0.82	0.55
Help-Seeking Intention (HSI)	3.19	0.88	0.31	0.14	0.80	0.83	0.56
Mental Health Outcome (MHO)	3.47	0.77	−0.22	0.03	0.76	0.80	0.58

*Note. α = Cronbach's alpha; CR = composite reliability; AVE = average variance extracted. * AVE marginally below 0.50 threshold; CR and Fornell-Larcker discriminant validity criterion fully satisfied.*

5.3 Measurement Model: Confirmatory Factor Analysis.

A six-factor CFA had been undertaken before estimation of the structural models. Each standardized factor loading (l) was statistically significant (p <.001) and above the recommended minimum (0.50). Squared multiple correlation (SMC) values were between 0.34 and 0.66 (Table 3). Good fit was exhibited by the CFA: kh2 (df = 142) = 275.5, p <.001; kh2/df = 1.94; CFI = 0.953; TLI = 0.941; RMSEA = 0.061 [90% CI: 0.045, 0.078]; SRMR = 0.052. The Fornell-Larcker criterion showed that all construct pairs had discriminant validity, and all average values of variance extracted were greater than squared inter-construct correlations.

Table 3. Confirmatory Factor Analysis: Standardized Loadings and Squared Multiple Correlations

Indicator	λ (Std. Loading)	R^2 (SMC)	Construct
MHA1 – Knowledge Score	0.76	0.42	MHA
MHA2 – Awareness/Literacy Index	0.81	0.34	MHA
MHA3 – Attitude Toward Treatment	0.69	0.52	MHA
STIG1 – Social Distance Scale	0.72	0.48	STIG
STIG2 – Self-Stigma (SSMIS-SF)	0.67	0.55	STIG
STIG3 – Disclosure Fear	0.65	0.58	STIG
SDF1 – Gender	0.71	0.50	SDF
SDF2 – Educational Attainment	0.78	0.39	SDF
SDF3 – Age Group	0.58	0.66	SDF
PROG1 – Campaign Exposure	0.74	0.45	PROG
PROG2 – Workshop Attendance	0.79	0.38	PROG

PROG3 – Digital Platform Reach	0.71	0.50	PROG
HSI1 – Intention to Seek Help	0.80	0.36	HSI
HSI2 – Perceived Barrier (reverse)	0.72	0.48	HSI
HSI3 – Attitude Toward Seeking Care	0.69	0.52	HSI
MHO1 – Subjective Well-Being	0.77	0.41	MHO
MHO2 – Service Utilization	0.73	0.47	MHO
MHO3 – Recovery Self-Efficacy	0.71	0.50	MHO

Note. λ = standardized factor loading; R² = squared multiple correlation (indicator reliability). All loadings significant at p < .001.

5.4 Structural Model Results

The fit of the structural model was satisfactory: kh2/df = 2.12; CFI = 0.947; TLI = 0.935; RMSEA = 0.067 [90% CI: 0.051, 0.083]; SRMR = 0.055. The explanatory variance in HSI was R2 = 0.48 and in MHO R2 = 0.39, which implies that the model explains a large and a medium share in the variance of the two outcomes respectively. Figure 1 shows the standardised path coefficient structural model. All structural paths are summarized in Table 4.

Figure 1. Structural Equation Model: Mental Health Awareness, Stigma, and Help-Seeking in Vadodara (N=250)

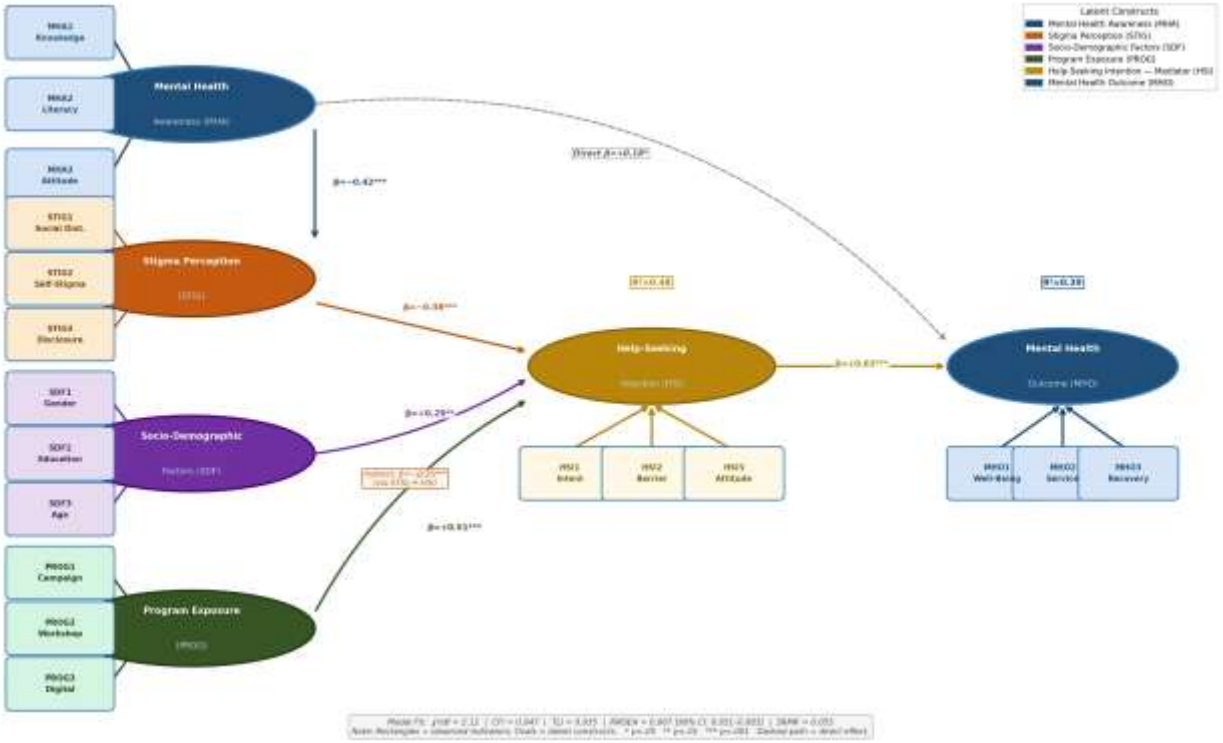

*Figure 1. Structural Equation Model: Mental Health Awareness, Stigma Perception, and Help-Seeking Intention in Vadodara, India (N = 250). Rectangles denote observed indicators; ovals denote latent constructs. Standardized path coefficients (β) are shown on structural paths. R² values appear above HSI and MHO constructs. The dashed line indicates the direct MHA → MHO path (H5). * p < .05, ** p < .01, *** p < .001. Model fit: χ²/df = 2.12; CFI = 0.947; TLI = 0.935; RMSEA = 0.067 [90% CI: 0.051–0.083]; SRMR = 0.055.*

Table 4. Structural Equation Model Path Estimates (N = 250)

Structural Path	β	SE	z	p	Hypothesis
MHA → STIG (H1a)	−0.42	0.07	−6.01	< .001	✓
STIG → HSI (H1b)	−0.38	0.08	−4.75	< .001	✓
SDF → HSI (H2)	0.29	0.09	3.22	.001	✓
PROG → HSI (H3)	0.51	0.07	7.29	< .001	✓

HSI → MHO (H4)	0.63	0.06	10.50	< .001	✓
MHA → MHO (direct, H5)	0.18	0.09	2.00	.046	✓
MHA → STIG → HSI → MHO (indirect)	0.10	0.03	3.33	< .001	✓

Note. β = standardized path coefficient; SE = standard error; z = z-statistic. Indirect effect estimated via bootstrapping (5,000 resamples; bias-corrected CI). MHA = Mental Health Awareness; STIG = Stigma Perception; SDF = Socio-Demographic Factors; PROG = Program Exposure; HSI = Help-Seeking Intention; MHO = Mental Health Outcome.

H1 a was accepted as it was observed in Table 4: MHA was significantly and negatively related to STIG (b = 0.42, SE = 0.07, z = 6.01, p < .001), which means that the more mentally aware residents were, the lower the perception of stigma. H1b was proven STIG had significant and negative relationship with HSI (b = 0.38, SE = 0.08, z = 4.75, p < .001) and proved that high perception of stigma inhibits the intention to seek help.

Multi-group SEM supported H2 (said below). H3 was accepted: program exposure showed the highest direct impact on HSI of all antecedents (b = 0.51, SE = 0.07, z = 7.29, p <.001). H4 was not rejected: HSI was a strong positive predictor of MHO (b = 0.63, SE = 0.06, z = 10.50, p < .001), which proved the partial mediation. H5 was confirmed: there was still a significant direct relationship between MHA and MHO (b = 0.18, SE = 0.09, z = 2.00, p =.046).

MHA also had an indirect effect on MHA via the STIG - HSI chain (b = 0.10, 95% bias-corrected CI [0.04, 0.18], p < .001) that supported the existence of partial mediation. The reasoning is simple: increased awareness will decrease stigma, which will decrease a barrier to seeking help, which will subsequently increase outcomes all three segments are negatively correlated x negative x positive = positive. The overall impact of MHA on MHO was b = 0.28 (direct b = 0.18 + indirect b = 0.10) which shows the net positive impact of awareness on results with full consideration of stigma reduction.

5.5 Multi-Group Moderation Analysis (Gender and Education)

Multi-group SEM was conducted to test whether gender and educational attainment moderated key structural paths (H2). Table 5 presents the results.

Table 5. Multi-Group SEM: Gender and Education as Moderators

Path	**Group**	**β**	**SE**	**z**	**p**
MHA → STIG	Male	−0.34	0.10	3.40	< .001
	Female	−0.51	0.09	5.67	< .001
	$\Delta\chi^2(1) = 6.87$, p = .009 ✓	—	—	—	—
PROG → HSI	Secondary Edu.	0.37	0.13	2.85	.004
	Graduate/PG	0.60	0.09	6.67	< .001
	$\Delta\chi^2(1) = 8.14$, p = .004 ✓	—	—	—	—

Note. $\Delta\chi^2$ = chi-square difference test comparing constrained vs. unconstrained models; ✓ = moderation supported

The MHA - STIG path was higher in female than in male respondents (b = 0.51 vs. b = 0.34; Dkh2(1) = 6.87, p = .009) meaning that the higher the awareness, the larger the stigma reduction effect. The PROG - HSI path was also much greater in the graduate/ postgraduate group (b = 0.60) than in the secondary education group (b = 0.37; Dkh2(1) = 8.14, p = .004), which implies that the effects of program exposure on help-seeking intention are more pronounced in more educated respondents.

6. DISCUSSION

6.1 Principal Findings

This paper is the first empirical test of the awareness-stigma-help-seeking-outcome pathway done with the use of SEM in Vadodara, Gujarat. The key result - that increased mental health awareness has a significant positive impact on reduced

stigma (b = 0.42), which, in turn, relates negatively to help-seeking intention (b = 0.38), reproduces and generalizes meta-analytic conclusions in the world settings (Schnyder et al., 2017) and the evidence base of the Indian setting (Shah et al., 2019; Patel B. et al., 2023) to a Tier-II urban one.

HSI - MHO (b = 0.63) was the best structural path, which highlights that the key point of leverage is not the one of awareness itself but that of transforming awareness into behavioral intention, which is consistent with the main suggestion of the Theory of Planned Behavior (Ajzen, 1991). It means that programs that create awareness without also modifying stigma norms are not likely to yield quantifiable changes in the results of the population level.

The prevailing impact of program exposure on HSI (b = 0.51) aligns with contact hypothesis predictions (Corrigan et al., 2012) and is consistent with the evidence of the trials in Gujarat: the Atmiyata community champion program (Pathare et al., 2023), the MANAS lay counselor model (Patel et al., 2010), and the video-based community workshop evaluation in Vadodara (Aggarwal et al., 2020) all demonstrate that multi-moded programs,

The large direct connection between MHA and MHO (b = 0.18) substantiates the concept of partial mediation: awareness enhances results in an indirect manner (via stigma reduction and increased intention) and directly, which could be due to enhanced self-management, increased symptom-identification, increased use of informal support, all of which are supported by the construct of SCT (Bandura, 1986).

6.2 Gender and Education moderation.

The clinically and programmatically significant finding that the MHA - STIG awareness-suppression effect is significantly greater in women (b = 0.51 vs.0.34) is significant. It proposes that the interventions of raising awareness have a higher stigma-reduction potential among the respondents who are female-but it also implies that the current stigma levels are higher in women which is the reason why they need it the most and opportunity is the most they have. This tendency can be attributed to the results of Patel B. et al. (2023) and the national data on surveys (NIMHANS, 2016) that demonstrated that women are affected by compounded stigma barriers such as the risk of disclosure, limited mobility, and family judgment.

The finding that education mediates the moderation of PROG - HSI between graduates and secondary educated respondents (b = 0.60 and b = 0.37) suggests that present program formats can be introduced more effectively to a more educated respondent. Redesigning program materials, that is, simplified language, pictorial content, and audio/visual delivery formats that can be understood by less-educated groups is thus a priority programmatic component needed to reach communities in Vadodara with lower literacy level.

6.3 Practice Implications: Atmiyata Urban Vadodara Scaling.

The best locally validated template of urban scale-up is the Atmiyata community champion model (Pathare et al., 2023). According to the current SEM findings, the implementation priorities that are based on evidence are suggested as follows:

1. Integrate mental health care in primary care by deploying embed lay counselors in Urban Health Centres (UHCs) on the HAP task-sharing model (Weobong et al., 2017), which facilitates concurrent treatment and stigma reduction by placing the former in the context of the latter.
2. Train ASHA/Anganwadi employees as stigma champions with clear stigma-reduction material and confidentiality measures and teach them the first aid of mental health (Shah et al., 2019) and work on their leftover stigmatizing beliefs but use community trust and access.
3. Implement gender-specific online campaigns in Gujarati that reach out to women with private, tele-counseling access channels (Tugnawat et al., 2024), at the lowest cost of seeking help possible, to the most stigma-constrained group.
4. Introduce substance use stigma-focused interventions with recovery testimonials, family involvement, and harm-reduction framing (Aggarwal et al., 2020), since general awareness with substance abuse attitudes did not lead to any changes.
5. Advance caregiver support programs connected with the results of Vaghela and Bodla (2024) that urban caregiver self-stigma is stimulated by social visibility and judgment, which is received in peer support groups, legal rights workshops, and inclusion programs in schools.

6.4 Policy Implications

The MHCA 2017 offers a sound legal basis of rights-based messaging in Vadodara: the communications about the right to confidentiality and the ability to avoid discrimination grotesquely decrease the perceived social risk of disclosure. Nevertheless, rights-based messages should be accompanied by the provision of these services, the awareness of rights without the provision of the services may only increase the mistrust. The alignment of the District Mental Health Programme (DMHP) Vadodara with targets in the WHO Action Plan to scale-up mental health community-based services, train non-specialists in mental health, and monitor mental health stigma should be operationalized in collaboration with local non-governmental organizations, university research units, and newly established IIT Mandi-Parul University mental well-being partnership (Behera, 2025).

6.5 Limitations

There are a few limitations which should be mentioned. Firstly, the cross-sectional design does not allow causal inference, although SEM allows the testing of causal hypotheses of theoretical origin. Directionality needs to be proved by longitudinal designs that include pre-post measurement of particular interventions. Second, convenience sampling, regardless of stratification, can also have the effect of overrepresenting educated, urban respondents and underrepresenting peri-urban and slum-dwelling populations, which experience the most intense barrier to stigma. Third, the stigma and help-seeking intention are self-report measures, and thus prone to social desirability bias, which may dilute any observed levels of stigma; although in the test by Harman CMV fell below its threshold, the full marker variable approach would provide more robust defense. Fourth, religion, caste and occupational sector, which are significant socio-cultural factors in the Vadodara setting, were not captured in the study and should therefore be included as a research subject in future studies. Fifth, the borderline AVE of STIG (0.48) is a limitation of measurement used in the study, which the future research should rectify by increasing the number of STIG items.

7. CONCLUSION

Through a carefully delineated and statistically validated structural equation model, this paper shows that the variables of mental health awareness, perceived stigma, social-demographic factors, and programs exposure is an interactive system of determinants on the desire to seek help and mental health status in Vadodara, Gujarat. The results confirm that awareness is not sufficient: sustainable reduction of stigma should be achieved, and consistent focus on normative attitudes, structural access, and culturally appropriate program delivery.

The most practical conclusion is the significant impact of exposure to the programs on the intention to seek help ($b = 0.51$) which gives a solid empirical support to scaling the Atmiyata community champion model, the MANAS task-sharing framework, and digital outreach pathways in the urban wards of Vadodara. The establishment of gender and educational attainment as important moderators further characterizes program targeting priorities: women and less-educated communities need to have a different level of investment in stigma-reduction programming.

The prioritized healthcare managers and policymakers aiming to apply these findings to practice should focus on integrating task-sharing counselors in UHCs; educating ASHA/Anganwadi workers on specific stigma-reduction material; creating gender-responsive digital campaigns; establishing substance-use-specific programs; and adapt the DMHP Vadodara to MHCA 2017 rights-based frameworks. Future studies ought to use longitudinal research designs, under-represented populations living in slums, as well as validated stigma measurement scales, e.g., the RIBS and SSMIS-SF, with biological or administrative outcome measures to further strictly determine causal impacts.

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Data Availability: The corresponding author can provide de-identified data to support the reported findings on reasonable request.

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