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ORIGINAL RESEARCH

Attitude towards mental illness among healthcare students – a cross-sectional survey

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Background: Stigma toward mental illness remains a significant barrier to effective mental health care. Healthcare students, as future professionals, play a crucial role in shaping patient experiences, and their attitudes toward mental illness can influence help-seeking, treatment quality, and recovery outcomes. This study aims to assess attitudes toward mental illness among healthcare students and examine demographic and academic factors associated with stigmatizing attitudes.

Methods: A cross-sectional survey was conducted among 340 healthcare students from a tertiary institution in Tamil Nadu. Participants completed a socio-demographic proforma and the 16-item mental illness: clinicians' attitudes scale – version 4 (MICA-4) questionnaire using an online platform. Data were analyzed using Statistical Package for the Social Sciences (SPSS) version 25. Descriptive statistics, independent t-tests, and one-way analysis of variance (ANOVA) were employed to examine differences in attitudes across demographic and academic variables.

Results: The mean total MICA-4 score was 61.91 $\pm$ 8.94, indicating a moderate level of stigma. A significant difference was observed in Domain 2 (knowledge) across courses of study ($p = 0.002$, 95% CI: 1.12–3.81). Domain 5 (care for patients with mental illness) differed significantly across years of study ($p = 0.003$, 95% CI: 1.26–1.78). Students from urban backgrounds scored higher than rural students in Domain 4 ($p = 0.027$, 95% CI: 1.08–1.68) and in total MICA-4 scores ($p = 0.046$, 95% CI: 1.18–3.88).

Conclusion: Although overall stigma levels were moderate, variations across academic and background factors highlight the need for targeted mental health education and early stigma-reduction strategies within healthcare curricula.

Keywords: social stigma, attitude of health personnel, students, health occupations, mental health education

Introduction

Mental illnesses represent a considerable global health burden, affecting approximately 970 million individuals worldwide (World Health Organization, 2022). Despite advancements in mental health care, stigma continues to impede access to treatment, reduce quality of care, and adversely affect patient recovery and community reintegration (1, 2).

Stigma consists of three core elements: ignorance (lack of knowledge), prejudice (negative attitudes), and discrimination (unjust behavior) (3). In healthcare settings, these elements can influence provider behavior, contributing to the marginalization of patients with psychiatric conditions (4).

Alarmingly, several studies have revealed that healthcare professionals, including physicians and nurses, often endorse stigmatizing beliefs towards individuals with mental illness, viewing them as less trustworthy or more dangerous (5–7). These attitudes may stem from inadequate training, limited clinical exposure, cultural factors, or personal biases (8, 9).

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Healthcare students form beliefs and clinical frameworks during their formative training years. Consequently, identifying and modifying negative attitudes early is critical. Factors such as gender, academic discipline, clinical exposure, and personal familiarity with mental illness have been shown to influence attitudes (10, 11).

Several tools have been employed to measure mental illness stigma, including the Community Attitudes toward the Mentally Ill (CAMI) and the Attribution Questionnaire (12). However, these were often not designed for healthcare populations. The Mental Illness: Clinicians' Attitudes Scale (MICA) was developed to address this gap, with the mental illness: clinicians' attitudes scale – version 4 (MICA-4) version tailored for students and professionals across disciplines (13).

Previous studies have consistently demonstrated the presence of stigmatizing attitudes toward mental illness among healthcare students and professionals, which may negatively influence clinical interactions and quality of care (14–16). Studies from low- and middle-income countries have similarly highlighted persistent negative attitudes and limited mental health literacy among healthcare trainees (17–19).

Despite growing evidence of stigma toward mental illness among healthcare professionals and students, there remains a paucity of data comparing attitudes across different healthcare disciplines and academic levels within the Indian context. Most existing studies have focused on either medical students alone or practicing professionals, with limited attention to allied health sciences and nursing students, who play a crucial role in patient care. Furthermore, variations in attitudes based on socio-demographic factors such as age, academic year, course of study, and background remain underexplored. Therefore, the present study was conducted to assess attitudes toward mental illness among healthcare students and examine the association between socio-demographic and academic variables and stigmatizing attitudes.

Methodology

A cross-sectional, questionnaire-based study was conducted among healthcare students enrolled at a tertiary care teaching institution in Tamil Nadu. Participants included undergraduate students from medical, dental, nursing, and allied health sciences programs across all academic years, including interns and postgraduates.

Participants were recruited using purposive sampling. The study invitation was disseminated through institutional communication platforms, including WhatsApp groups and official email channels, after obtaining permission from the respective academic coordinators. All currently enrolled healthcare students who were willing to participate were eligible for inclusion.

Data were collected using a self-administered online questionnaire developed using Google Forms. The first page of the survey contained an information sheet explaining the purpose of the study, the voluntary nature of participation, anonymity, and confidentiality. Electronic informed consent was obtained from all participants prior to accessing the questionnaire, and submission of the completed survey was considered as consent. No personally identifiable information was collected.

Attitudes toward mental illness were assessed using the MICA-4, a validated 16-item instrument designed to measure attitudes toward mental illness among healthcare students and professionals (13). The MICA-4 scale has demonstrated good internal consistency and construct validity in multiple international studies, including studies conducted in cultural contexts comparable to India. Prior permission to use the MICA-4 scale for academic research was obtained from the original developers. Higher scores indicated more stigmatizing attitudes toward mental illness.

Statistical analysis was performed using the Statistical Package for the Social Sciences (SPSS), version 25.0 (IBM Corp., Armonk, NY, USA). Descriptive statistics were used to summarize demographic variables and domain-wise scores. Independent t-tests and one-way analysis of variance (ANOVA) were applied to assess differences across demographic and academic variables. A p-value of less than 0.05 was considered statistically significant.

Results

A total of 340 participants were included in the final analysis. The mean age of the study population was 20.85 ± 1.83 years, with a median age of 21 years and an age range of 18–29 years. The socio-demographic characteristics of the participants are presented in **Table 1**.

The mean domain scores were analyzed across demographic variables to explore variations in participants' perceptions and attitudes toward mental health. The five domains assessed included visions of health/mental health fields, knowledge about mental disorders, disclosure attitudes, distinction between physical and mental health, and care for patients with mental illness.

As shown in **Table 2**, participants aged 21–23 years showed slightly higher scores in most domains, while the 24–26-year-old group recorded the highest mean in Domain 4 (16.12 ± 3.73). However, no statistically significant differences were found across age categories for any domain ($p > 0.05$). Medical students, who constituted the majority of the sample, had mean scores of 16.53 ± 6.21, 13.77 ± 2.93, 7.17 ± 1.02, 15.50 ± 3.95, and 8.50 ± 2.36 across the respective domains. Nursing students demonstrated comparatively higher mean values in Domain 2 (21.00 ± –) and Domain 4 (17.00 ± –), though these findings should be interpreted cautiously due

TABLE 1 | Sociodemographic characteristics of the participants (N = 340).

Variable	Category	Frequency (n)	Percentage (%)
Age (in years)	18–20	170	50
	21–23	145	42.65
	24–26	25	7.35
Course of study	Dental	12	3.53
	Medical	298	87.65
	Nursing	30	8.82
Year of study	1st year	71	20.88
	2nd year	99	29.12
	3rd year	79	23.24
	4th year	70	20.59
	Intern	21	6.18
Accommodation	Day scholar	48	14.12
	Hosteller	292	85.88
Religion	Hindu	292	85.88
	Christian	30	8.82
	Muslim	11	3.24
	No religious inclination	7	2.06
Background	Rural	131	38.53
	Urban	209	61.47
Treatment for mental illness	Yes	14	4.12
	No	326	95.88

to the smaller sample size. Differences across courses of study were not statistically significant.

Mean domain scores varied with academic year. First-year students recorded the highest mean in Domain 5 (9.42 ± 2.20), while second-year students had the lowest (8.02 ± 2.07). A statistically significant difference was observed for Domain 5 ($p = 0.003$), indicating variation in attitudes toward care for patients with mental illness across years of study. Differences in mean scores across religious affiliations were minimal; participants with no religious inclination had slightly higher means in Domain 3 (8.29 ± 1.89), though none of these differences were statistically significant ($p > 0.05$).

Participants from urban backgrounds obtained higher mean scores in Domain 4 (15.53 ± 3.64) compared to those from rural areas (14.64 ± 3.55), and this difference was statistically significant ($p = 0.027$). Those who reported a history of treatment for mental illness had marginally lower mean scores across most domains compared to those without such history, but these differences were not statistically significant ($p > 0.05$).

As shown in **Table 3**, the mean total MICA-4 score among participants was generally consistent across age, course, year of study, religion, background, and history of mental illness. Although the mean score across age groups tended to increase with age, the difference was not statistically significant ($p = 0.142$).

Across courses, dental students showed a slightly higher mean score; the overall difference between groups was not statistically significant ($p = 0.252$). When compared across academic years, third-year students had the highest mean score (63.72 ± 13.38), followed by interns (63.29 ± 9.77) and first-year students (62.15 ± 7.09). The lowest mean score was observed among second-year students (60.30 ± 6.56). However, these variations were not statistically significant ($p = 0.152$).

Participants from urban backgrounds had a higher mean total score (62.68 ± 10.26) than those from rural areas (60.72 ± 6.23), and this difference was statistically significant ($p = 0.046$), indicating that urban respondents exhibited more favorable attitudes toward mental illness.

Participants with a history of treatment for mental illness recorded a slightly lower mean score (60.29 ± 8.88) compared to those without such history (61.98 ± 8.95), but this difference was not statistically significant ($p = 0.488$).

Discussion

The present study assessed attitudes toward mental illness among healthcare students and examined their association with selected socio-demographic and academic variables. Overall, the findings indicate a moderate level of stigma, which is consistent with previous studies conducted among healthcare students and professionals globally. Similar levels of stigmatizing attitudes have been reported in international studies using the MICA, suggesting that stigma persists even among individuals receiving formal healthcare training (13, 15).

A significant difference in knowledge-related attitudes toward mental illness was observed across courses of study, with dental students demonstrating higher scores compared to medical and nursing students. This finding aligns with a study done by Knaak et al., indicating that variability in mental health exposure across healthcare curricula may influence attitudes toward mental illness (16). Medical curricula typically provide greater exposure to psychiatry through structured teaching and clinical postings, which may partially explain relatively lower stigma scores among medical students. In contrast, limited mental health training in certain allied disciplines may contribute to higher levels of stigma.

Differences in attitudes toward care for patients with mental illness across years of study further support the role of academic exposure and clinical experience in shaping attitudes. Studies done by Thornicroft et al. have shown that increased clinical contact with individuals with mental illness is associated with more favorable attitudes, although such exposure does not uniformly eliminate stigma (14). The present findings suggest that while progression through

TABLE 2 | Domain-wise mean scores of participants by demographic variables.

			Visions of health/mental health fields		Knowledge about mental disorders		Disclosure attitudes		Distinction between physical and mental health		Care for patients with mental illness	
Variable	**Group**	**N**	**Mean ± SD**	**p-value**	**Mean ± SD**	**p-value**	**Mean ± SD**	**p-value**	**Mean ± SD**	**p-value**	**Mean ± SD**	**p-value**
Age (years)[a]	18–20	170	15.99 ± 3.16	0.359	14.22 ± 2.94	0.586	7.08 ± 1.89	0.970	15.15 ± 3.66	0.057	8.57 ± 2.27	0.656
	21–23	145	17.01 ± 8.23		14.48 ± 3.20		7.14 ± 1.18		15.14 ± 3.53		8.82 ± 2.20	
	23–26	25	17.52 ± 3.66		14.72 ± 4.23		7.12 ± 0.67		16.12 ± 3.73		8.96 ± 2.09	
Course[a]	Dental	12	17.92 ± 3.78	0.647	17.08 ± 3.92	0.002 (95% CI: 1.12–3.81)	7.25 ± 1.22	0.885	15.42 ± 3.78	0.902	9.33 ± 2.71	0.440
	Medical	298	16.53 ± 6.21		14.28 ± 3.09		7.11 ± 1.61		15.14 ± 3.60		8.72 ± 2.19	
	Nursing	30	16.40 ± 2.72		13.77 ± 2.93		7.17 ± 1.02		15.50 ± 3.95		8.50 ± 2.36	
Year of study[a]	1st year	71	16.83 ± 3.21	0.528	13.86 ± 3.00	0.073	6.96 ± 2.62	0.685	15.08 ± 3.93	0.382	9.42 ± 2.20	0.003 (95% CI: 1.26–1.78)
	2nd year	99	15.91 ± 3.09		14.09 ± 2.75		7.27 ± 1.39		15.01 ± 3.37		8.02 ± 2.07	
	3rd year	79	17.42 ± 10.98		14.99 ± 3.26		7.19 ± 0.85		15.39 ± 3.48		8.73 ± 2.39	
	4th year	70	16.00 ± 2.70		14.60 ± 3.34		6.93 ± 1.02		15.18 ± 3.73		8.92 ± 1.96	
	Intern	21	17.10 ± 3.69		14.33 ± 4.12		7.24 ± 0.77		15.90 ± 3.85		8.71 ± 2.45	
Religion[a]	Hindu	292	16.62 ± 6.27	0.813	14.23 ± 3.16	0.061	7.05 ± 1.56	0.150	15.11 ± 3.62	0.751	8.71 ± 2.22	0.666
	Christian	30	16.52 ± 3.23		15.19 ± 2.59		7.29 ± 1.29		15.77 ± 4.16		8.94 ± 2.02	
	Muslim	11	14.92 ± 2.91		13.83 ± 3.71		7.42 ± 1.44		15.67 ± 2.81		8.00 ± 2.34	
	None	7	16.57 ± 2.82		16.86 ± 4.02		8.29 ± 1.89		14.86 ± 3.19		8.86 ± 2.97	
Background[b]	Urban	209	16.93 ± 7.26	0.135	14.33 ± 2.96	0.886	7.04 ± 1.54	0.263	15.53 ± 3.64	0.027 (95% CI: 1.08 –1.68)	8.85 ± 2.24	0.162
	Rural	131	15.96 ± 2.69		14.39 ± 3.48		7.23 ± 1.55		14.64 ± 3.55		8.50 ± 2.18	
Treatment status[b]	Yes	14	15.86 ± 3.13	0.656	14.79 ± 2.99	0.604	6.93 ± 0.92	0.649	14.14 ± 3.82	0.274	8.57 ± 2.31	0.809
	No	326	16.58 ± 6.01		14.34 ± 3.18		7.12 ± 1.57		15.23 ± 3.62		8.72 ± 2.22	

[a]One way analysis of variance (ANOVA) was used to compare the mean scores of more than two groups
[b]Independent t test was used to compare the mean scores of two groups
p-value of less than 0.05 was considered statistically significant.

TABLE 3 | Total score on mental illness clinicians attitudes - 4 scale (all domains combined).

Variable	Group	N	Total score mean ± SD	p-value
Age[a]	18–20	170	61.02 ± 6.99	0.142
	21–23	145	62.60 ± 10.61	
	23–26	25	64.44 ± 9.69	
Course[a]	Medical	298	61.77 ± 9.17	0.252
	Dental	12	67.00 ± 7.35	
	Nursing	30	61.33 ± 6.57	
Year of study[a]	1st year	71	62.15 ± 7.09	0.152
	2nd year	99	60.30 ± 6.56	
	3rd year	79	63.72 ± 13.38	
	4th year	70	61.63 ± 6.62	
	Intern	21	63.29 ± 9.77	
Religion[a]	Hindu	292	61.72 ± 9.18	0.375
	Christian	30	63.71 ± 8.13	
	Muslim	11	59.83 ± 5.51	
	None	7	65.43 ± 4.93	
Background[b]	Urban	209	62.68 ± 10.26	0.046 (95% CI: 1.18–3.88)
	Rural	131	60.72 ± 6.23	
Mental illness[b]	Yes	14	60.29 ± 8.88	0.488
	No	326	61.98 ± 8.95	

[a]One way ANOVA was used to compare the mean scores of more than two groups
[b]Independent t test was used to compare the mean scores of two groups
p-value of less than 0.05 was considered statistically significant.

training may improve certain attitudinal domains, targeted educational interventions are still required.

The study also found significant differences in attitudes based on background, with students from urban settings demonstrating higher total MICA-4 scores compared to those from rural backgrounds. This contrasts with a study done in Maharashtra by Kermode M et al., which reported greater stigma in rural populations, highlighting the complex and context-specific nature of mental health attitudes (17). Factors such as differing sociocultural perceptions, exposure to mental health information, and media representation may contribute to these variations and warrant further exploration.

Overall, the findings highlight existing gaps in the literature, particularly the scarcity of comparative studies examining stigma across multiple healthcare disciplines and academic levels within the Indian context. The results underscore the need for structured, discipline-specific anti-stigma interventions integrated into healthcare education. Future research should focus on longitudinal designs and interventional studies to assess changes in attitudes over time and to evaluate the effectiveness of targeted educational strategies.

The study has some limitations. As a cross-sectional study conducted at a single institution, the findings may not be generalizable to all healthcare students. The use of convenience sampling could introduce selection bias, and some subgroups, such as allied health and postgraduate students, had very small sample sizes, which limits subgroup comparisons. Since the data were collected through a self-reported online questionnaire, responses may have been influenced by social desirability bias, potentially underreporting negative attitudes. Although reverse coding was applied to ensure accurate scoring of the MICA-4 scale, individual interpretation of statements may still have varied.

Conclusion

The present study demonstrates that healthcare students exhibit a moderate level of stigma toward mental illness, with significant variations observed across course of study, year of training, and socio-demographic background. Differences in knowledge-related domains and attitudes toward patient care suggest that exposure to mental health education and clinical experience may influence stigmatizing attitudes, although such exposure alone may be insufficient to eliminate stigma. The findings also highlight existing gaps in the literature, particularly the limited comparative data across diverse healthcare disciplines and academic levels within the Indian context. Future research should focus on longitudinal and interventional studies to evaluate the effectiveness of structured, discipline-specific anti-stigma training modules integrated into healthcare curricula. Such initiatives may help foster more positive attitudes toward mental illness and ultimately improve the quality of mental health care delivered by future healthcare professionals.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Declaration regarding the use of Generative AI

The corresponding author has acknowledged the use of AI assistance and has submitted 'AI use declaration form'.

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