

Medical and nursing students' attitudes toward mental illness: An Indian perspective

Vijayalakshmi Poreddi¹

Rohini Thimmaiah²

Suresh BadaMath³

Medical and nursing students' attitudes toward mental illness: An Indian perspective

Objective. Compare the attitudes toward mental illness between medical and nursing undergraduate students from a university in India. **Methods.** A cross sectional descriptive study was carried out among medical ($n=154$) and nursing undergraduate students ($n=168$) using Attitude Scale for Mental Illness (ASMI) questionnaire with six sub scales namely; *Separatism, Stereotyping, Restrictiveness, Benevolence, Pessimistic prediction and Stigmatization*. This was a 5-point Likert scale with 34 items to rate participants responses from totally disagree (1) to totally agree (5). The lower scores indicate positive attitudes toward persons with mental illness. **Results.** Our findings revealed that 54.5% of medical students versus 64.8% of nursing students have positive attitudes toward mental illness. While medical students have better attitudes against separatism and stigmatization, nursing students have more positive attitudes in benevolence and against pessimism. **Conclusion.** An important proportion of medical and nursing students

have negative attitudes toward mental illness. It is necessary to review and adapt the current curriculum to favor the positive attitude of future professionals toward people with these types of diseases.

Descriptors: mental disorders; attitude; students, medical; students, nursing; cross-sectional studies.

Actitudes de los estudiantes de medicina y enfermería hacia la enfermedad mental: Una perspectiva hindú

Objetivo. Comparar las actitudes hacia la enfermedad mental entre los estudiantes de medicina y enfermería de una universidad en India. **Métodos.** Se realizó un estudio descriptivo de tipo transversal con estudiantes de Medicina ($n=154$) y de Enfermería ($n=168$). Se utilizó la *Attitude Scale for Mental Illness (ASMI)* la cual tiene 34 ítems divididos en seis dominios: *Separatismo, Estereotipos, Restricción, Benevolencia, Predicción pesimista y Estigmatización*. Las opciones de respuesta son tipo Likert y van desde totalmente en

1 RN, RM, BSN, MSN. College of Nursing, Department of Nursing, National Institute of Mental health and Neurosciences, India. email: pvijayalakshmireddy@gmail.com

2 MD. Psychiatry, Registrar, Toowoomba Base Hospital, Toowoomba, Queensland, Australia. email: drtrohini@gmail.com

3 MD. Additional Professor, Department of Psychiatry, National Institute of Mental Health and Neurosciences (Institute of National Importance), Bangalore, India. email: nimhans@gmail.com

Conflicts of interest: none.

Received on: August 3, 2016.

Approved on: January 31, 2017.

How to cite this article: Poreddi V, Thimmaiah R, Math B,S. Medical and nursing students' attitudes toward mental illness: An Indian perspective. Invest. Educ. Enferm. 2017; 34(1): 86-94

DOI: 10.17533/udea.iee.v35n1a10

desacuerdo (1) a totalmente de acuerdo (5). A menor puntaje es mejor la actitud positiva hacia las personas con enfermedad mental. **Resultados.** Nuestros hallazgos revelaron que el 54.5% de los estudiantes de Medicina versus el 64.8% de los de Enfermería tienen actitudes positivas hacia la enfermedad mental. Mientras que los estudiantes de Medicina tienen mejores actitudes contra el separatismo y la estigmatización, los estudiantes de enfermería poseen actitudes más positivas en la benevolencia y en contra del pesimismo. **Conclusión.** Una proporción importante de alumnos de Medicina y Enfermería tienen actitudes negativas hacia la enfermedad mental. Es necesario revisar y adaptar el currículo actual para favorecer la actitud positiva de los futuros profesionales hacia las personas con este tipo de enfermedades.

Descriptor: trastornos mentales; actitud; estudiantes de medicina; estudiantes de enfermería; estudios transversales.

Atitudes entre os estudantes de medicina e enfermagem à doença mental: Uma perspectiva hindu

Objetivo. Comparar as atitudes à doença mental entre os estudantes de medicina e enfermagem de

Introduction

Mental illness is common around the world and constitutes 14% of the global burden of disease.¹ Meta-analysis of epidemiological studies report that 58/1 000 Indians have a mental illness and at least 20% of the adult population is affected with one or the other psychiatric disorder that needs mental health professionals intervention.² On the other hand people with Mental illness are one of the most vulnerable populations as they frequently encounter stigma and discriminatory attitudes not only by the general population³ but also by health care professionals. Further, stigmatizing attitudes hold by the public tend to restrict the civil rights of the persons with mental illness.⁴ Earlier studies indicate that health care providers' negative attitude towards persons with mental illness may result in inequality in access,

uma universidade na Índia. **Métodos.** Se realizou um estudo descritivo de tipo transversal com estudantes de Medicina ($n=154$) e de Enfermagem ($n=168$). Se utilizou a Attitude Scale for Mental Illness (ASMI) a qual tem 34 itens divididos em seis domínios: *Separatismo, Estereótipos, Restrição, Benevolência, Predição pessimista e Estigmatização*. As opções de resposta são tipo Likert e vão desde totalmente em desacordo (1) a totalmente de acordo (5). A menor pontuação é melhor a atitude positiva para as pessoas com doenças mentais. **Resultados.** Nossos resultados revelaram que 54.5% dos estudantes de Medicina versus 64.8% dos de Enfermagem tem atitudes positivas para a doença mental. Enquanto que os estudantes de Medicina têm melhores atitudes contra o separatismo e a estigmatização, os estudantes de enfermagem possuem atitudes mais positivas na benevolência e em contra do pessimismo. **Conclusão.** Uma proporção importante de alunos de Medicina e Enfermagem tem atitudes negativas à doença mental. É necessário revisar e adaptar o currículo atual para favorecer a atitude positiva dos futuros profissionais às pessoas com este tipo de doenças.

Descriptor: transtornos mentais; atitude; estudantes de medicina; estudantes de enfermagem; estudos transversais.

treatment, and outcomes.⁵ However, numerous studies from indicate that negative attitudes among medical⁶ and nursing⁷ undergraduate students. These negative attitudes toward mental illness and psychiatry may be attributable to various factors such as shortage of psychiatric professionals,⁸ education, treatable and dangerousness. It is also believed that attitudes and beliefs about mental illness are influenced by knowledge, familiarity, cultural stereotypes, and media stories about mental illness.⁹ Further, few studies indicate that attitude influences professional and personal behavior of the health care professionals. According to World Health Organization, positive attitude among health care professionals towards mental illness is prerequisite for the provision of quality care.¹⁰ On the other hand, persons with mental illness and their family

members expect health care professionals to treat them as unique individuals without any prejudice and discrimination.¹¹ In this context, it is crucial to assess future health professionals' attitudes toward mental illness. Further, undergraduate training process could be the right time to modify the negative attitudes toward mental illness, as being primary care providers they frequently face the patients with psychological problems. In India, most of the studies focused on medical and nursing students attitudes toward mental illness and psychiatry. Very few studies examined the impact of undergraduate curriculum in changing their attitudes toward mental illness. It would be interesting to examine attitudinal differences between health professionals' attitudes toward mental illness. It is therefore, present study was developed with aim to assess and compare the attitudes toward mental illness between medical and nursing undergraduate students prior to exposure to psychiatry curriculum.

Methods

This was a cross sectional descriptive study carried out among undergraduate medical and nursing students at selected colleges in Bangalore, India.

Participants. Sample consisting of students from medical and nursing professions selected through convenient sampling method. Study criteria included (a) nursing and medical students studying 1st year and 2nd year of their course (b) students those did not have any exposure to psychiatry yet c) who were willing to participate. Students those attended any mental health courses and those were not willing to participate were excluded from the study. A total of 182 students from medicine and 170 students from nursing were enrolled in to the study. Few students from medicine were refused to participate ($n=13$), few questionnaire were in complete ($n=7$) and few were absent during data collection ($n=8$). Almost all the students from nursing were participated other than those were absent during data collection. Thus, the final sample comprised of 322 students 154 from medicine (84.6% response rate) and

168 students from nursing (98.8% response rate).

Measures. **1-Demographic data survey instrument.** The demographic form consists of five items to seek the background of the participants in the study that includes "age, education, residence, and contact with mental illness". **2-Attitude Scale for Mental Illness (ASMI).**¹² This was a valid and reliable (Cronbach's Alpha 0.86), self-report measure used to measure health professionals attitudes toward persons with mental illness. This modified version of the questionnaire measures opinions about mental illness in Chinese community (OMICC). This was a 5-point Likert scale rated participants responses from totally disagree (1) to totally agree (5). The lower scores indicate positive attitudes toward persons with mental illness. **(i) Separatism:** includes ten items, (1-9, 24) to measure respondents' attitude of discrimination. Ex: "People with mental illness have unpredictable behavior"; **(ii) Stereotyping:** includes four items (10-13) intended to measure the degree of respondents' maintenance of social distance toward persons with mental illness. Ex: "It is easy to identify those who have a mental illness"; **(iii) Restrictiveness:** composed of four items (14-17), that hold an uncertain view on the rights of people with mental illness. Ex: "It is not appropriate for a person with mental illness to get married"; **(iv) Benevolence (reverse coded):** includes eight items (18-23, 25, 26) related to kindness and sympathetic views of the respondents towards people with a mental illness. Ex: "People with mental illness can hold a job"; **(v) Pessimistic prediction:** composed of four items (27-30) intended to measure the level of prejudice toward mental illness. Ex: "It is harder for those who have a mental illness to receive the same pay for the same job"; and **(vi) Stigmatization:** includes four items (31-34) that measure the discriminatory behavior of the students toward mental illness.

Procedure. Data was collected batch wise in their classrooms after completion of the regular lectures. On introduction, the primary author explained briefly about aims and methods of the

present study to all the participants. Students those were willing to participate were asked to complete the questionnaires. They could complete both questionnaires in about 20 min. Data collection tools contained no identifying information and therefore kept the individual responses confidential.

Ethical considerations. Permission was obtained from the administrators of the colleges where the study was conducted. Participants were introduced to the aims and procedures of the study to decide if they would like to participate. After they agreed to participate verbally, the researchers gave them the confidential questionnaire. Participants were given freedom to withdraw from the study at any part of the procedure.

Statistical analysis. The response of the benevolence domain was reverse coded before the analysis. The data were analyzed using appropriate statistical software and results were presented in narratives and tables. The t-test was used to determine whether significant differences

existed between medical and nursing students regarding their mean attitudes scores. Chi-Square test was used to find the significant association between socio-demographic variables. Statistical significance was assumed at $p < 0.05$.

Results

The sample in the present study comprised of undergraduate students ($n=322$) of whom 52.1% were nursing students ($n=168$). The mean age of the nursing students (19.57) was lesser than mean age of the medical students (20.87). More number of nursing students was aged below 20 yrs (72%) compared to 33.1% of medical students ($X^2 = 48.879$, $p < 0.001$). A vast majority of the participants were women (83.9%) and were from nursing course ($X^2 = 53.518$, $p < 0.001$). Nearly one fourth of the students from the both groups agreed that they know persons with mental illness. Majority of the medical students (85.7%) than nursing were from urban background ($X^2 = 11.838$, $p < 0.001$).

Table 1. Chi-square analysis of the study population

Variables	Medicine ($n=154$)	Nursing ($n=168$)	Total ($n=322$)	Test value	p -Value
Age	20.87±1.23	19.57±1.62	20.23±1.57	F=37.59	0.001
Below 20	51 (33.1%)	121 (72.0%)	172 (53.4%)	48.879	0.001
Above 20	103 (66.9%)	47(28.0%)	150 (46.6%)		
Gender					
Male	49 (31.8%)	3 (1.8)	52 (16.1%)	53.518	0.001
Female	105 (68.2%)	165 (98.2)	270 (83.9%)		
Contact with mental illness					
Yes					
No	34 (22.1%)	36 (21.4%)	70 (21.7%)	0.020	0.497
	120 (77.9%)	132 (78.6%)	252 (78.3%)		
Residence					
Rural	22 (14.2%)	51 (30.4%)	73 (22.7%)	11.838	0.001
Urban	132 (85.7%)	117 (69.6%)	249 (77.3%)		

Table 2 demonstrates mean significant differences on subscales of ASMI questionnaire, between medical and nursing students. A significant difference was observed between medical and

nursing students ($t=2.996$, $p < 0.001$), as the mean score of separatism domain was higher among nursing students (27.54) compared to medical students (25.74). This finding indicates

that medical students hold more positive attitudes than nursing in separatism domain. Similarly, medical students hold less stigmatizing attitudes (8.37) than nursing ($t=3.055$, $p<0.05$). Interestingly, no significant differences were observed between medical and nursing students regarding stereotyping and restrictiveness

domains. However, nursing students were more benevolent toward persons with mental illness than the medical students ($t=3.528$, $p<0.001$). With regard to pessimistic prediction, medical students hold more negative attitudes (13.49) than nursing and statistically significant difference was found ($t=4.604$, $p<0.001$).

Table 2. Comparison between medical and nursing students regarding domains of attitude scale for mental illness

Subscales	Medicine (n= 154) M \pm SD	Nursing (n= 168) M \pm SD	t value	p-value
Separatism	25.74 \pm 5.49	27.54 \pm 5.28	2.996	0.003
Stereotyping	11.61 \pm 3.01	11.54 \pm 3.02	-0.204	0.839
Restrictiveness	8.96 \pm 2.86	8.45 \pm 2.97	-1.578	0.116
Benevolence	17.00 \pm 4.91	15.00 \pm 5.22	-3.528	0.001
Pessimistic prediction	13.49 \pm 3.32	11.83 \pm 3.12	-4.604	0.001
Stigmatization	8.37 \pm 2.81	9.27 \pm 2.48	3.055	0.002

Table 3 reveals the mean ASMI scores for the six subscales with different socio-demographic variables of the participants. Women tend to be less restrictive (8.55) and more benevolent (15.52) towards persons with mental illness than men. Age found to be significantly affecting students attitudes in restrictiveness, benevolence, and pessimistic prediction domains. Students those were below 20 years of age were found to be less restrictive (8.34), more benevolent (15.27) and lesser pessimistic predictions (12.25) toward mental illness. Students from rural background

showed less pessimistic predictions compared to participants from urban (11.71). Similarly, students those who had contact with mental illness demonstrated less restrictive (8.49) and more benevolent (15.51) attitudes toward persons with mental illness. However, no significant association was illustrated between medical and nursing students regarding their overall attitudes toward mental illness. Nonetheless, the number of nursing students (64.8%) with positive attitudes toward mental illness was slightly higher than medical students are (54.5%) (Table 4).

Table 3. Mean scores of domains of Attitude scale for mental illness with socio demographic variables

	Separatism	Stereotyping	Restrictiveness	Benevolence	Pessimistic prediction	Stigmatization
Gender	t = 0.406	t = 1.769	t = 2.058*	t = 3.432†	t = -0.856	t = -0.381
Male (n=52)	26.96±5.69	12.25±3.06	9.46±3.12	18.17±5.69	12.26±3.55	8.71±3.09
Female (n=270)	26.62±5.41	11.44±2.99	8.55±2.87	15.52±4.96	12.70±3.27	8.86±2.60
Age	t = 1.663	t = -0.437	t = -2.308*	t = -2.539*	t = -2.215*	t = 1.050
<20 (n=172)	27.15±5.30	11.50±2.94	8.34±2.94	15.27±4.73	12.25±3.31	8.98±2.62
>20(n=150)	26.14±5.59	11.65±3.10	9.10±2.87	16.73±5.54	13.06±3.27	8.67±2.75
Residence	t = 1.573	t = .165	t = .727	t = .481	t = -2.431†	t = 0.350
Rural (n=73)	27.28±4.02	11.54±3.31	8.91±3.23	16.31±5.91	11.71±3.21	8.89±2.51
Urban (n=249)	26.50±5.80	11.58±2.93	8.63±2.84	15.85±4.94	12.89±3.30	8.82±2.73
Contact with mental illness	t = 0.188	t = 1.426	t = 2.370*	t = 2.963 †	t = 0.198	t = 0.608
Yes (n=70)	26.57±5.15	12.02±3.11	8.49±2.92	15.51±4.95	12.70±3.35	9.01±2.92
No (n=252)	26.71±5.54	11.44±2.98	9.42±2.85	17.55±5.62	12.61±3.31	8.79±2.62

*p<0.05, † p<0.01, ‡ p<0.001

Table 4. Comparison of attitudes towards mental illness between Medical and Nursing students

Attitude	Medicine (n=154, 47.8%)	Nursing (n=168, 52.1%)	Total n=322	χ^2 value	p-value
Positive	84 (54.5%)	105 (64.8%)	189 (59.8%)	3.464	0.067
Negative	70 (45.5%)	57 (35.2%)	127 (40.2%)		

Discussion

To our best of knowledge, this was the first study that compared medical and nursing undergraduates' attitude towards mental illness using the standardized questionnaire in various dimensions. The present study was unique in nature, since the sample of the present study comprised of the undergraduates, those completed theoretical and clinical exposure to Psychiatry. The present study found mixed opinions about mental illness as medical students hold attitudes that are more positive in separatism and stigmatization domain while nursing students were more benevolent and less pessimistic attitudes toward persons with mental illness.

In the present study, 83.9% of the sample was women and was from nursing course (98.2%). This findings could be due to nursing profession is women dominated in general. The mean scores of separatism (25.74) and stigmatization (8.37) domains were lesser in medical students compared to nursing students. This indicates that medical students hold attitudes that are more positive in these domains. These findings were inconsistent with a study that assessed the impact of Psychiatric curriculum on the attitude of Indian undergraduate medical students. The higher mean scores compared to the findings of the present study were observed in all the domains such as Separatism (21.8), Restrictiveness (14.8), Stigma (14.2), Stereotypy (13.4), and Pessimistic prediction (13.2), indicating negative attitudes toward the mental illness and the persons with mental illness.¹³ Exhaustive research is available related to stigma and mental illness.¹⁴ Further, persons with mental illness encounter stigma not only restricted to society, but also by the mental healthcare professionals.¹⁵

Though significant difference was not observed between medical and nursing students, they hold negative attitudes in the stereotype domain. Earlier research pointed out that health care professionals were not resistant to social prejudices.¹⁶ Further, it was evident that nursing students had stereotypes and prejudices related to persons with mental illness beginning of their nursing course.¹⁷ These findings could be due to lack of knowledge related to nature of mental illness. However, stereotype beliefs and social prejudices leads to stigma and discrimination of persons with mental illness. Negative stereotype attitudes among undergraduates toward mental illness are potential to influence therapeutic relationship between person with mental illness and health care providers. Hence it is an urgent concern to modify these negative stereotype attitudes among medical and nursing undergraduates since they are the primary health care providers.¹⁸

Nursing students in the current study hold more benevolent attitudes toward persons with mental illness compared medical students. While these findings concur with earlier studies from Southern Nigeria that found stigmatizing attitudes among medical students and interns,¹⁹ inconsistent with previous research,²⁰ that observed benevolent attitudes that were positive, toward mental illness. On the other hand, these findings also support documented evidence that showed high benevolent attitudes among nursing students toward mental illness.²¹ Similarly, nursing students were more positive towards treatment and reintegration of people with mental illness in to the society than students from medicine were. These results could be due to negative stereotypes and social prejudice they hold, hence they were unaware about rehabilitation of people with mental illness. However, nursing students in the

present study were not undergone the psychiatry course, the rich clinical experience (begins with in few months) might have influenced them in developing positive, kind attitudes toward mental illness.

More women than men in the present sample were least restrictive and more benevolent attitudes toward persons with mental illness. These findings were congruent with a study among undergraduate nursing students that showed women participants were less authoritarian, more benevolent, and had more CMH (Community Mental Health) ideology than men.²² In addition, abundant documented studies report that women were more tolerant, humanitarian, and flexible attitude towards mental illnesses.²³ However, these findings were contrary to a recent study conducted among medical students, demonstrated high restrictiveness among females than male participants.²⁴ nonetheless, few studies illustrated no significant differences between men and women attitudes related to mental illness.²⁵ On age wise analysis, participants aged below 20 years were found to be less restrictive (8.34), more benevolent (15.27) and lesser pessimistic predictions (12.25) toward mental illness. Though few studies²³ indicate that as age increases, decreased tolerance toward mental illness was observed among participants from Sweden, the present sample age ranges from 17-27 years. In the present study, student from rural background hold least pessimistic attitudes toward mental illness compared to urban participants. These findings were in support of previous studies.²⁶ These findings were contrary to an Indian study that proved more stigmatizing attitude towards persons with mental illness by the rural participants.²⁷ In support of earlier research,²⁸ present study also demonstrated, students those were familiar with people with mental illness hold least restrictive and more benevolent attitudes toward mental illness. Never the less, numerous studies among nursing²⁹ and medical students³⁰ revealed that there was a positive change in their attitudes towards persons with mental illness after completion of psychiatry course.

The present study has certain limitations such as small and convenient sample selected and cross sectional design made difficult to generalize the findings. Thus, future studies should focus on larger sample and comparative studies between the students after completion of psychiatry course, and qualitative approach such as focus group discussions to understand the multiple factors that influence the attitude of future health professionals toward mental illness. Despite of these limitations, the present study showed certain important findings to the educators and administrators in medical and nursing professions to target students with negative attitudes toward mental illness in specific domains.

Conclusion

Concisely, while nursing students were more benevolent and less pessimistic attitudes toward mental illness, medical students hold more attitudes that are positive in separatism and stigmatization domains. These findings have important implications in reviewing the current curriculum and adapting modern teaching methods that confront negative attitudes of future health professionals towards mental illness. Further, there is need for short educational interventions to inculcate positive attitudes among the students to face the challenges in order to provide quality of care and protect the human rights of these disadvantaged populations.

Acknowledgements

All the researchers heart fully thank the participants for their valuable contribution.

References

1. WHO. WHO Mental Health Gap Action Programme (mhGAP) [Internet]. Geneva: WHO; 2016 [cited 28 Nov 2016] . Available from: http://www.who.int/mental_health/mhgap/en/
2. Math SB, Chandrashekar CR, Bhugra D. Psychiatric epidemiology in India. Indian J. Med. Res. 2007; 126(3):183-92.

3. Hogberg T, Magnusson A, Lutzen K, Ewalds-Kvist B. Swedish attitudes towards persons with mental illness. *Nord. J. Psychiatry*. 2012;66:86-96.
4. Lauder C, Nordt C, Rossler W. Recommendations of mental health professionals and the general population on how to treat mental disorder. *Soc. Psychiatr. Epidemiol.* 2005; 40:835-43.
5. De Hert M, Correll C, Bobes J, Cetkovich-Bakmas M, Cohen D, Asai I, et al. Physical illness in patients with severe mental disorders. I. Prevalence, impact of medications and disparities in health care. *World Psychiatry*. 2011; 10(1):52-77.
6. Totic S, Stojiljković D, Pavlovic Z, Zaric N, Zarkovic B, Malic L, et al. Stigmatisation of 'psychiatric label' by medical and non-medical students. *Int. J. Soc. Psychiatry*. 2012; 58(5):455-62.
7. Emrich K, Thompson T, Moore G. Positive Attitude: An Essential Element for Effective Care of People with Mental Illnesses. *J. Psychosoc. Nurs. Ment. Health Serv.* 2003; 41(5):18-25.
8. Happell B. Clinical experience in mental health nursing: Determining satisfaction and the influential factors. *Nurse Educ. Today*. 2008; 28(7):849.
9. Wahl OF. News media portrayal of mental illness. *Am. Behav. Scientist*. 2003; 46:1594-600.
10. WHO. Global Atlas of the Health Workforce [Internet]. Geneva: WHO; 2007 [cited 28 Nov 2016] . Available from: <http://apps.who.int/globalatlas/>
11. Pelzang R. Attitude of Nurses towards Mental Illness in Bhutan. *J. Bhutan Studies*. 2010; 22:60-76.
12. Ng SL, Martin JL, Romans SE. A community's attitude towards the mentally ill. *N. Z. Med. J.* 1995;108:505-8.
13. Lingeswaran A. Psychiatric Curriculum and its Impact on the Attitude of Indian Undergraduate Medical Students and Interns. *Indian J. Psychol. Med.* 2010; 32(2):119-27.
14. Hinshaw SP, Stier A. Stigma as related to mental disorders. *Annu. Rev. Clin. Psychol.* 2008; 4:367-93.
15. Chambers M, Guise V, Valimaki M, Botelho MA, Scott A, Staniulienė V, et al. Nurses' attitudes to mental illness: A comparison of a sample of nurses from five European countries. *Int. J. Nurs. Stud.* 2010; 47:350-62.
16. Emrich K, Thompson TC, Moore G. Positive attitude: An essential element for effective care of people with mental illness. *J. Psychosoc. Nurs. Ment. Health Serv.* 2003; 41(5):18.
17. Pedrão LJ, Avanci, Rde C, Malaguti SE. Profile of undergraduate nursing students' attitudes towards mental disease, before the influence of specific academic education. *Rev. Lat-Am. Enferm.* 2002; 10(6):794-9.
18. Perez-Santos E, Munoz M, Guillen AI. Descriptive study of stigma associated with severe and persistent mental illness among the general population of Madrid (Spain). *Community Ment. Health J.* 2008;44: 393-403.
19. James BO, Joyce OO, Esther OO. Stigmatised attitudes towards persons with mental illness: a survey of medical students and interns from Southern Nigeria. *Ment. Illn.* 2012; 4(1):e8.
20. Abo El magd MH, Luma AZ. Medical and Non-Medical Female Students' Attitudes toward Mental Illness and Psychiatric Patients at Umm Al Qura University. *Life Sci.* 2013; 10(2):882-8.
21. Vijayalakshmi P, Rohini T, Dharma Reddy P, Ramachandra, Suresh B. Undergraduate Nursing Students' Attitudes towards Mental Illness: Implications for Specific Academic Education. *Ind. J. Psychol. Med.* 2014; 36(4):368-72.
22. Morrison R. Nursing Students' Attitudes toward People with Mental Illness: Do they change after instruction and clinical exposure? [Dissertation]. University of South Florida; 2011 [cited 28 Nov 2016]. Available from: <https://honors.usf.edu/documents/Thesis/U00977266.pdf>
23. Ewalds-Kvist B, Högberg T, Lütznén K. Impact of gender and age on attitudes towards mental illness in Sweden. *Nord. J. Psychiatry*. 2013; 67(5):360-8.
24. Anvar Abnavi M, Rezaee R, Dehbozorgi A, Mani A. Attitude toward mental illness among medical students: comparison between basic science and clinical medical students. *Eur. Psychiatry*. 2012; 27:1.
25. Mahto RK, Verma PK, Verma AN, Singh AR, Chaudhury S, Shantna K. Students' perception about mental illness. *Ind. Psychiatry J.* 2009; 18:92-6.
26. Poreddi, V, Ramachandra, Nagarajiah, Reddemma, Suresh, B M. Attitude and response of a rural population regarding person with mental illness. *Dysphrenia*. 2013; 4(1):42-8.
27. Jadhav S, Littlewood R, Ryder AG, Chakraborty A, Jain S, Barua M. Stigmatization of severe mental illness in India: Against the simple industrialization hypothesis. *Indian J. Psychiatry*. 2007; 49:189-94.
28. Anagnostopoulos F, Hantzi A. Familiarity with and social distance from people with mental illness: Testing the mediating effects of prejudiced attitudes. *J Community Appl. Soc. Psychol.* 2011; 21(5):451-60.
29. Linden M, Kavanagh R. Attitudes of qualified vs. student mental health nurses towards an individual diagnosed with schizophrenia. *J. Adv. Nurs.* 2012; 68(6):1359-68.
30. Konwar R, Pardal PK, Prakash J, Rythem. Does psychiatry rotation in undergraduate curriculum bring about a change in the attitude of medical student toward concept and practice of psychiatry: A comparative analysis. *Ind. Psychiatry J.* 2012; 21(2):144-7.