International Journal of Biomedical and Clinical Sciences
Vol. 5, No. 2, 2020, pp. 105-114
http://www.aiscience.org/journal/ijbcs

A Cross Sectional Study on Stigma Towards Psychiatric Disorders Among Undergraduate Medical Students

Shaman Kalearasu*, Syed Mohammad Nihal Bin Syed Waseem Zaidi, Sadiyah Umaima Hamid Asmil, Tharusi Amaya Fonseka, Munaweera Hettiarachchige Roweena Chantelle Fernandopulle

Faculty of Medicine, Melaka Manipal Medical College (MMMC), Melaka, Malaysia

Abstract

Stigma refers to the prejudice resulting from misconceptions over psychiatric illness, which often robs psychiatric patients of opportunities that could provide for a better quality of life. Nine out ten sufferers of psychiatric illness claim that the fear, shame and stigma attached to mental illness and the associated discrimination they face make recovery more challenging and often prevent them from seeking the care that would help them most. Therefore, we conducted this cross-sectional study to assess the stigma towards psychiatric disorders and mental illness amongst medical students. This study conducted in Melaka Manipal Medical College from November to December 2019. The sample included a total of 160 medical students from the MBBS students from semester 6 to 7 in Muar Campus. Mental illness clinician attitudes scale (MICA-2) was used to assess the stigma toward psychiatric disorders and mental illness. Unpaired t test and ANOVA was calculated. Most of the students had low stigma toward psychiatric disorders and mental illness as the mean score of MICA-2 was 43.41. Among different ethnicities, Malay students have shown the highest stigma followed by Chinese, Others and Indian medical students. The students who had a diagnosis of psychiatric illness sometime in their life showed lesser stigma (mean 37.0) than those who had never had a diagnosis of psychiatric illness before (mean 43.84). Furthermore, medical students with a family member diagnosed with psychiatric illness also showed lesser stigma (mean 38.86) than those who do not have a family member diagnosed with psychiatric illness (mean 44.14). Stigma towards psychiatric disorders is low among undergraduate medical students in our college. Male gender, Malay and Chinese ethnicities, Muslim and Christian religions and Malaysian students revealed a relatively higher stigma. Moreover, students with diagnosed psychiatric disorders, family history of psychiatric illnesses, and students who were aware of friends with a diagnosed psychiatric illness revealed a lower stigma towards psychiatric disorders and mental illness.

Keywords

Stigma, Psychiatric Disorders, Medical Students, Cross-sectional

Received: December 6, 2019 / Accepted: April 27, 2020 / Published online: May 26, 2020

1. Introduction

With a prevalence of 25%, Two-thirds of this population never seeking treatment [1] and 90% of all suicide deaths attributing to underlying psychiatric and substance use disorders, [2] psychiatric illness continues to be one of the most underrated medical conditions in society. Causing mild to severe disruptions in thinking, perception and mood, these perturbations affect people's ability to cope with day to day demands and routines. [3] Although with supportive education and treatment, many people do have a chance of

* Corresponding author
E-mail address: syednihalzaidi@hotmail.com (S. M. N. B. S. W. Zaidi), kshaman97@gmail.com (S. Kalearasu)

complete recovery, studies show an increasing trend in the prevalence of disability due to psychiatric disorders, with suicide rates reaching a 30-year high. [4] With anxiety disorders estimated to take up the bulk of psychiatric disorders at 3.76%, depression, alcohol use disorder, drug use disorder and bipolar disorder continue to dominate with the highest prevalence since 1990 up until 2017. [5]

There is an increasing amount of empirical evidence suggesting that in comparison with physical medical care, significant barriers exist in the provision of mental health care. [6] Nine out ten sufferers of psychiatric illness claim that the fear, shame and stigma attached to mental illness and the associated discrimination they face make recovery more challenging and often prevent them from seeking the care that would help them most. [7] Stigma in this context refers to the prejudice resulting from misconceptions over psychiatric illness, which often robs psychiatric patients of opportunities that could provide for a better quality of life. [8] A stigma shout out workshop conducted by Rethink Mental Illness, a NPO in England, involving mentally ill patients from London, Hertfordshire and Kent in 2008 reported 87% of patients having experienced the negative impact of stigma in their lives, with 2/3 of this population having withdrawn from activities in fear of discrimination. [19] The stigma surrounding mental illness is multifaceted and includes discrimination at an institutional, community, ethnic and individual level. [6] Frankly, society is programmed to negatively believe that psychiatric illness fits into 1 of 2 categories: dangerous or incompetent and these stereotypes result in avoidance and repression of employment, housing and help, amongst other basic rights, and generate anger and fear towards stigmatized groups. [9] A qualitative study done in 2004 in North London, exploring the feelings and experiences related to stigma around patient's mental illnesses reported that patients were more affected by the patronizing attitudes they received from society, rather than the overt discrimination. [23]

Being a medical student requires a great amount of consideration and understanding beyond a basic scientific nature to fully empathize with patients, in future practice in a psychiatric setting. [10] Stigma towards psychiatric patients is the first obstacle hindering successful treatment and recovery. [11] Lack of awareness and unintentional bias amongst medical students, often tends to manifest as evident feelings of fear or anxiety and a desire to avoid and clinically distant themselves from psychiatric patients, which further causes a negative impact on doctor patient relationship and rapport, ultimately manifesting into similar practice in their medical career, contributing to stigmatizing experience amongst their patients. Factors affecting this can often be traced to the stigma that medical students and practitioners themselves face, where hospital staff are discouraged from seeking psychological help, due to the perception of seeming less competent, dangerous and unpredictable. The results of the anticipated stigma include delay in help seeking, suboptimal therapeutic relationships and often discontinuation of treatment. [21] A study conducted in Canada found that 53% of medical practitioners reported witnessing discrimination towards a psychiatric patient. Stigmatization may also manifest into poor physical care and overlooking of physical symptoms in psychiatric patients. [12] Another cross sectional study done in 2002 to assess the stigmatization in view of psychiatric illnesses amongst medical students and doctors of a London teaching hospital showed more than 50% of the sample felt that people with psychiatric illnesses were dangerous, unpredictable and difficult to talk to. [20]

A cross-sectional study done in 2002 in the U.S, to investigate factors associated with stigmatization of persons with mental illness amongst undergraduate art students showed no significant association with age, race or religion but females respondents showed significantly less stigma compared to male participants. [22] A cross sectional study investigating the prevalence and socio-demographic correlates of mental distress in Butajira, Ethiopia found that literacy was associated with positive attitudes towards the mentally ill. [24] An exploratory study examining variables involved in the formation of attitudes towards psychiatric patients found that those with personal experience of people with psychiatric illness had a more positive attitude towards mental illness. It also revealed that Female responders had more feelings of fear and avoidance compared to males who had predominantly feelings of anger and suspicion. [25] A cross sectional study carried out amongst primary care physicians from four Latin countries in 2018, concluded that gender, age and years of training in primary care were unrelated to the doctors' levels of stigma. [26]

A cohort study conducted to assess the effect of a clinical psychiatric posting of 8 weeks on the attitude of medical students towards psychiatric and mental illness in Hospital Universiti Kebangsaan Malaysia, revealed a significant rise in positive attitudes towards psychiatric illnesses amongst female but not male students, with more female students making up majority of placements in the masters programme for psychiatry. [13] A cross sectional study conducted in Singapore using an online web survey assessing the stigma towards mental illness amongst medical and nursing students, showed that students who had completed a clinical posting had more stigmatizing attitudes when compared to those who had not completed a psychiatric clinical posting, and were also less likely to disclose their own psychiatric illnesses to their colleagues. The survey utilized a slightly modified

opening minds stigma scale for healthcare providers. [14] Another cross- sectional-longitudinal study conducted in the state of Trinidad and Tobago in the Caribbean Islands to assess the attitudes towards Mental Illness in Medical Students of the Caribbean revealed that preclinical year students exhibited a significant level of stigma towards psychiatric illness in comparison to other diseases, with OCD and addiction being most stigmatized and less than 5% of students desiring to pursue a career in Psychiatry. The medical condition regard scale was used, revealing in general questions involving direct hospital contact being scored the most unfavorable. Follow up of the same group of students four years later showed very little improvement in their stigmatizing attitude.[27]

The National Health and Morbidity Survey conducted in 2015, shows an increase in prevalence of psychiatric problems amongst the adult population of Malaysia, with a rise from 10.7% in 1997 to 29.2% in 2015. [15] A study assessing the attitude of Malaysian General Hospital Staff towards patients with mental illness compared to patients with diabetes showed significantly lower scores on support and care and higher scores in the likelihood of avoidance behavior and negative stereotyping in the responses of the mental illness vignette compared to the diabetes vignette. [16]

In Malaysia there is limited research involving stigma, and furthermore scarce investigations surrounding mental illness from the stance of medical health professionals or students. [17] As a result, it has been suggested as a point of scope for future investigation and our research is a summarized research based on the investigation of the stigma of mental illness in medical students.

Research Question

Do the medical students of Melaka Manipal Medical College have stigma towards psychiatric disorders and mental illness?

Research Objective

To assess the stigma towards psychiatric disorders and mental illness amongst Medical Students of Melaka Manipal Medical College.

To investigate the factors affecting this Stigma.

Research Hypothesis

There is association between Gender, Ethnicity, Religion, Nationality, Students with diagnosed psychiatric illness, Having family members/ friends/ colleagues with a diagnosed psychiatric illness and Stigma towards psychiatric illness within undergraduate medical students of Melaka Manipal Medical College.

2. Methodology

2.1. Study Design, Time, Setting and Population

The study design used was analytical cross-sectional study in which self-administered questionnaires were distributed to participants to study the stigma towards psychiatric disorders among undergraduate medical students. The study was conducted over 6 weeks from the month of November to December 2019 in Melaka Manipal Medical College - which comprises of three courses namely Bachelor of Medicine and Surgery [MBBS], Bachelor of Dentistry [BDS] and Foundation in Science [FIS]. Our study population is focused on the MBBS students of semester 6 and 7 from Muar Campus, and semester 8 to 10 from the Melaka Campus, comprising of approximately 750 students in total.

2.2. Sample Size

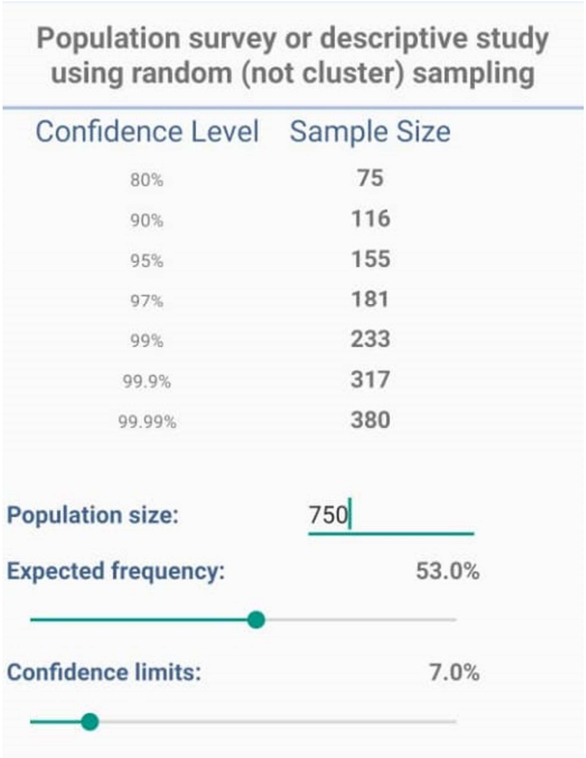

Figure 1. Calculation of sample size.

Sample size = 155, was calculated using the software epi info 7.0 at 95% confidence level with the expected frequency at 53% and confidence limit of 7%. This expected frequency was extracted from a survey conducted by the Canadian Psychiatric Association stating that 53% observed other medical personal, discriminating against a psychiatry patient [12]. The sample size calculated 155, 30% non-response rate was allowed.

Nonresponse was calculated using the following formula.

$$N = \frac{\text{n calculated}}{1 - \text{non response\%}}$$

Which is

$$\frac{155}{1-0.30} = 221.4 \cong 222$$

Therefore, final sample was 222.

2.3. Sampling

Sampling method used was purposive sampling which is a type of non-probability sampling. A total of 200 self-administered questionnaires were distributed among semester 6 and 7 medical students from Melaka Manipal Medical College, Muar Campus. Participants involved could be of any gender, race or ethnicity and were required to sign a written consent form attached to the questionnaire after explaining that participation was purely on voluntary basis. Inclusion criteria were that the student must be a medical student, has voluntarily agreed to participate in the study and completed questionnaire with a consent form. Incomplete questionnaires, absentees from class at the time of distribution of questionnaire and students who failed to sign the consent form were considered as the exclusion criteria.

2.4. Data Collection

For this study, we prepared a questionnaire composing of 2 sections. The first section consists of the demographic details of the participant. This includes the age, gender, ethnicity, religion, marital status, nationality, semester, current posting, mental health status and family history of the participants and history of the participant knowing those who have been diagnosed with mental illness. These were considered to be the independent variables.

The second section of the questionnaire consists of the Mental Illness Clinicians Attitude (MICA – 2) Scale consisting of 16 questions, which was created for medical students and was shown to be reliable and valid. [18] This scale is used to assess the attitudes of medical students towards people with psychiatric illnesses. All questions were scored on a 6-point Likert Scale ranging from 1 - 6. Items 3, 9, 10, 11, 12 and 16 are scored as follows: Strongly agree = 1, Agree = 2, Somewhat agree = 3, Somewhat disagree = 4, Disagree = 5, Strongly disagree =6. The remaining items, 1, 2, 4, 5, 6, 7, 8, 13, 14, 15, are reverse scored as the following: Strongly agree = 6, Agree = 5, Somewhat agree =4, Somewhat disagree = 3, Disagree =2, Strongly disagree = 1. An individual's MICA score is the sum of the scores of all the individual items. A high total score, indicates a higher level of stigmatizing attitude

2.5. Data Processing and Analysis

Data was entered into Microsoft Excel, and Software Epi Info, Version 7.0 was used in the processing and analysis of the collected data. Independent variables were age group, gender, ethnicity, marital status, religion, nationality, semester current posting, mental health status and family history of the participants and history of the participant knowing those who have been diagnosed with mental illness while the dependent variable was stigma towards psychiatric disorders (sum of MICA 2 scale).

Frequency (n) and percentage (%) were calculated for all the independent variables using the Epi Info software. The mean along with standard deviation was calculated individually for each item of the MICA-2 scale. Mean and standard deviation was then calculated for the total score of stigma. Minimum possible score was 23 and maximum possible score was 66. Finally the association between gender, ethnicity, religion, nationality, students diagnosed with psychiatric illness, family members diagnosed with psychiatric illness and friends/colleagues diagnosed with psychiatric illness towards psychiatric disorders were analyzed and interpreted by calculating the mean along with standard deviation, mean difference (95% CI), t or F values along with degree of freedom and P values. Level of significance was considered to be 0.05. ANOVA and unpaired t test was used.

Table 1. Statistical test chosen based on independent and dependent variable.

Independent variable	Dependent variable	Statistical test
Age group	Stigma towards psychiatric disorders (MICA 2 score)	ANOVA
Gender		Unpaired t-test
Ethnicity		ANOVA
Marital status		ANOVA
Religion		ANOVA
Nationality		ANOVA
Semester		Unpaired t-test
Current posting		ANOVA
Diagnosis of psychiatric illness		Unpaired t-test
Family history of psychiatric illness		Unpaired t-test
Friends/colleagues diagnosed with psychiatric illness		Unpaired t-test

2.6. Ethical Consideration

This research was reviewed and approved by the Research Ethics Committee, Faculty of Medicine, Melaka Manipal Medical College, Malaysia. An explanation on the objectives of our study were given along with the questionnaire. A written consent was also prepared and obtained from the participants prior to answering the questionnaire to ensure that all participants were voluntarily involved in this study. All participants were informed that their information pertaining to this study will be kept confidential.

3. Results

Table 2. Socio-demographics of medical students who participated in the study (n=160).

Variable		Frequency (n)	Percentage (%)
Age	<20	3	1.88%
	21-25	156	97.50%
	> 25	1	0.63%
Gender	Male	55	34.38%
	Female	105	65.63%
Ethnicity	Malay	36	22.50%
	Chinese	38	23.75%
	Indian	48	30.00%
	Other	38	23.75%
Religion	Muslim	46	28.75%
	Hindu	43	26.88%
	Christian	23	14.38%
	Buddhist	44	27.50%
	Atheist	0	0%
	Other	4	2.50%
Nationality	Malaysian	136	85.00%
	International	24	15.00%
Marital status	Single	96	60.00%
	In a relationship	63	39.38%
	Married	1	0.63%
Semester	7	46	28.75%
	6	114	71.25%
Current posting	Orthopaedics	23	14.38%
	Obstetrics and Gynaecology	23	14.38%
	Medicine	24	15.00%
	Paediatrics	31	19.38%
	Community medicine	33	20.63%
	Surgery	26	16.25%

Table 2 shows baseline socio- demographic characteristics of undergraduate medical students. With regard to age, Majority of the sample, 97.50% are between the ages 21 to 25 years, with only 1.88% being less than 20, and 0.63% being more than 25 years. With regard to gender, 65.63% of participants are Female, and 34.38% are Male. There is a relatively equal distribution of Ethnicities with Malay consisting of 22.50%, Chinese 23.75%, Indian 30.00% and Others consisting of 23.75%. With regard to Religion, 28.75% of the sample are Muslim, 26.88% are Hindu, 14.38% are Christian, 27.50% are Buddhist and 2.50% are of other religions. With regard to Nationality, 85.00% are Malaysian and 15.00% are International students. With regard to Marital Status, 60.00% of the sample are Single, 39.38% are in a relationship and 0.63% are married.

With regard to Batch, 71.25% are from Batch 41 and 28.75% are from Batch 39. With regard to the Current Posting, 20.63% are from Community Medicine, 19.38% from Paediatrics, 16.25 from Surgery, 15.00% from Medicine, 14.38% from Obstetrics and Gynaecology and 14.38% from Orthopaedics.

Table 3. Psychiatric variables of medical students who participated in the study.

Variable		Frequency	Percentage (%)
Students with diagnosed psychiatric illness	Yes	10	6.25%
	No	150	93.75%
Use of anti-psychotic medication	Yes	6	3.75%
	No	154	96.25%
Family members with diagnosed psychiatric illness	Yes	22	13.75%
	No	138	86.25%
Friends/colleagues with a diagnosed psychiatric illness	Yes	115	71.88%
	No	45	28.13%

Table 3 shows the composition of the participants in regard to various psychiatric variables. 6.25% of the sample had been diagnosed with psychiatric disorders and 93.65% had not been previously diagnosed with any psychiatric condition. 3.75% of the sample has used anti-psychotic medication, and 96.25% has never used any anti- psychotic medication. 13.75% of the sample has family members with diagnosed psychiatric illness, and 86.25% has no family members diagnosed with psychiatric illness. 71.88% of the sample has a friend or colleague diagnosed with a psychiatric disorder and 28.13% do not.

Table 4. Mean and standard deviation of stigma towards psychiatric disorders among medical students.

MICA 2 Item (1-6)	Mean (SD)
I just learn about psychiatry because it is in the exam and would not bother reading additional material on it. [a]	2.41 ± 1.36
People with severe mental illness can never recover enough to have a good quality life. [a]	2.18 ± 1.22
Psychiatry is just as scientific as other fields of medicine. [b]	2.78 ± 1.48
If I had mental illness, I would never admit this to any of my friends because I would fear being treated differently. [a]	3.24 ± 1.26
People with severe mental illness are dangerous more often than not. [a]	2.91 ± 1.14
Psychiatrists know more about the lives of people treated for a mental illness than do family members or friends. [a]	4.13 ±1.18
If I had a mental illness, I would never admit this to my colleagues for fear of being treated differently. [a]	3.60 ± 1.32
Being a psychiatrist is not like being a real doctor. [a]	2.31 ± 1.25
If a consultant psychiatrist instructed me to treat people with a mental illness in a disrespectful manner, I would not follow their instructions. [b]	1.91 ± 1.22

MICA 2 Item (1-6)	Mean (SD)
I feel as comfortable talking to a person with mental illness as I do talking to a person with a physical illness. [b]	2.67 ± 1.28
It is important that any doctor supporting a person with mental illness also assesses their physical health. [b]	1.91 ± 0.93
The public does not need to be protected from people with a severe mental illness. [b]	4.11 ± 1.14
If a person with a mental illness complained of physical symptoms (such as chest pain), I would attribute it to their mental illness. [a]	2.78 ± 1.21
General practitioners should not be expected to complete a thorough assessment for people with psychiatric symptoms because they can be referred to a psychiatrist. [a]	2.57 ± 1.30
I would use the terms 'crazy', 'nutter', 'mad' etc. to describe people with mental illness who I have seen in my work. [a]	1.66 ± 0.95
If a colleague told me they had mental illness, I would still want to work with them. [b]	2.25 ± 1.08

[a] Positive statement, [b] Negative statement

Table 4 shows mean and SD of Mental Illness Clinicians Attitude (MICA – 2) Scale. The participating medical students predominantly disagree that they learn psychiatry because it is in the exam and they would read additional material on it. A mean and SD of 2.18 ± 1.22 of the participants agree that people with severe mental illness can recover enough to have a good quality of life. A mean and SD of 2.78 ± 1.48 agree that psychiatry is just as scientific as other fields of medicine. A mean and SD of 3.24 ± 1.26 of the participants somewhat agree to admitting to their friends/ colleagues of having a mental illness without fearing that they would be treated differently. A mean and SD of 2.91 ± 1.14 of the participants disagree that people with severe mental illness are dangerous more often than not. A mean and SD of 4.13 ± 1.18 of the participants somewhat agree that psychiatrists know more about the lives of people treated for mental illness than family members or friends.

As a whole, the mean and SD of 2.31 ± 1.25 of the participating medical students agrees that psychiatrists are real doctors. A mean and SD of 1.91 ± 1.22 of the participants strongly agreed that if a consultant psychiatrist instructed them to treat a person with mental illness in a disrespectful manner they would not follow instructions. A mean and SD of 2.67 ± 1.28 of the participants agreed that they would be as comfortable talking to a person with mental illness as they would be talking to a person with a physical illness. On the whole, a mean and SD of 1.91 ± 0.93 of the participants strongly agreed that it is important that any doctor supporting a person with mental illness also assess their physical health. For the most part, a mean and SD of 4.11 ± 1.14 of the participants somewhat agreed that the public should be protected from people with severe mental illness. A mean and SD of 2.78 ± 1.21 of the participants agreed that they would attribute physical symptoms in a person with mental illness to their mental disorder. On the whole, a mean and SD of 2.57 ± 1.30 of the participating medical students agree that a general practitioner is expected to complete a thorough assessment for people with psychiatric symptoms even though they can be referred to a psychiatrist. A mean and SD of 1.66 ± 0.95 of the participants strongly disagree to using terms such as 'crazy','nutter', 'mad' etc when describing people with mental illness. The mean and SD of 2.25 ± 1.08 of the participants predominantly agree that they would want to work with colleagues, if the colleague admitted to having a mental illness to them.

Table 5. Mean total of stigma towards psychiatric disorders among medical students.

Variable	Mean total (SD)	Min-Max
Stigma towards psychiatric disorders (16-96)	43.41 ± 8.29	23-66

Table 5 shows the mean score of stigma towards psychiatric disorders in our study came up to 43.41, with a standard deviation of ± 8.29. The minimum value of the stigma score is 23, and the maximum value being 66.

Table 6. Association between gender, ethnicity, religion, nationality, students' with diagnosed psychiatric disorder, family members with diagnosed psychiatric disorder and friends with a diagnosed psychiatric disorder towards psychiatric disorders and stigma towards psychiatric illness among medical students.

Variable		Stigma (Mean SD)	Mean difference (95%CI)	t (df)/F (df1, df2)	P value
Gender	Male	44.45 (9.34)	-1.59 (-4.30, 1.13)	-1.15 (158)	0.251
	Female	42.87 (7.67)			
Ethnicity	Malay	46.72 (8.51)		5.48 (3, 156)	0.001 s
	Chinese	45.47 (8.44)			
	Indian	40.58 (7.08)			
	Other	41.79 (7.97)			
Religion	Muslim	45.24 (8.72)		1.79 (4, 155)	0.134 ns
	Hindu	41.05 (7.55)			
	Christian	44.74 (8.26)			
	Buddhist	43.43 (8.11)			
	Atheist	-			
	Other	40.00 (9.83)			
Nationality	Malaysian	43.95 (8.21)	-3.57 (-7.16, 0.02)	-1.97 (158)	0.051

Variable		Stigma (Mean SD)	Mean difference (95%CI)	t (df)/F (df1, df2)	P value
	International	40.38 (8.21)			
Students with diagnosed psychiatric illness	Yes	37.00 (6.18)	6.84 (1.59, 12.09)	2.57 (158)	0.011
	No	43.84 (8.25)			
Family members with diagnosed psychiatric disorder	Yes	38.86 (6.56)	5.27 (1.60, 8.95)	2.83 (158)	0.005
	No	44.14 (8.32)			
Friends/colleagues with a diagnosed psychiatric disorder	Yes	42.87 (7.96)	1.93 (-0.94, 4.80)	1.33 (158)	0.186
	No	44.80 (9.02)			

Table 6 shows Association between gender, ethnicity, religion, nationality, students' with diagnosed psychiatric disorder, family members with diagnosed psychiatric disorder and friends with a diagnosed psychiatric disorder towards psychiatric disorders and stigma**.** There is significant association in the perceived stigma towards psychiatric illness between Ethnicities, in students with diagnosed psychiatric disorders, and in students having family members with diagnosed psychiatric disorders. There is a significant difference in the stigma score between Malay, Chinese, Indian and Other. From our sample, Malay have the highest stigma score of 46.72 followed by Chinese at 45.47, followed by Others at 41.79 and then Indian at 40.58 with a P value of 0.001. There is a significant difference of perceived stigma in Students who have been diagnosed with psychiatric disorders at 37.00 and those who have not, 43.84 with a mean difference of 6.84, 95% CI of 1.59, 12.09 and a P value of 0.011 There is also significant difference of perceived stigma amongst students having family members with diagnosed psychiatric disorders, at 38.86 and those who do not, at 44.14 with a mean difference of 5.27, 95% CI of 1.60, 8.95 and a P value of 0.005.

Gender, Religion, Nationality and the presence or absence of friends/ colleages with a diagnosed psychiatric disorder show no significant association between groups. However males showed a higher level of perceived stigma at 44.45, compared to females, 42.87 with a mean difference of -1.59, 95% CI of -4.30, 1.13 and a P value of 0.251. Muslims had the highest stigma score at 45.24, followed by Christians at 44.74, followed by Buddhists at 43.43, followed by Hindu at 41.05 and then Others at 40.38 with a P value of 0.134. Malaysians had a higher stigma score of 43.95 compared to International students, at 40.38 with a mean difference of -3.57, 95% CI of -7.16, 0.02 and a P value of 0.051. Students with friends/ colleagues with diagnosed psychiatric disorders had less stigma at 42.87, compared to those who did not, at 44.80 with a mean difference of 1.93, 95% CI of -0.94, 4.80 and a P value of 0.186

4. Discussion

A cross-sectional study was conducted to assess the stigma towards psychiatric disorders and mental illness amongst medical students of our college and to investigate the factors affecting this Stigma. We found that the medical students in our college had low stigma towards psychiatry as a subject, quality of life in a psychiatric patient, psychiatry being equally scientific as other fields of medicine, psychiatrists being real doctors, attributing physical symptoms in a patient to mental illness, assessment of physical health of psychiatric patients, general practitioners not being expected to assess psychiatric symptoms, admitting about mental illness of self to friends or colleagues, working with a mentally ill colleague, ill-treatment of psychiatric patients, being uncomfortable talking to them and using derogatory terms to describe patients. However, the medical students in this study had high stigma towards psychiatrists knowing more about the lives of their patients compared to their family members and need for public protection from people with severe mental illness. According to a recent study conducted in Mamata Medical College, Khammam, Telangana, India, similar results were seen except that these medical students had low stigma towards psychiatrists knowing more about the lives of their patients compared to their family members compared to our study. [28]

Our study results show that there was no significant association of gender and religion with stigma towards psychiatric disorders even though male students had higher mean stigma score compared to the female students. Regards to religion, highest mean stigma score was observed among Muslims and Christians with comparatively lower mean stigma score with Hindus and Buddhists. Previous study conducted on attitudes towards mental illness among Caribbean medical students stated there was no difference between male and female students as well as that the ethnicity, religion affiliation did not significantly moderate the attitudes towards scores for any of the psychiatric illness.[1] In another cross sectional study conducted in Singapore among nursing and medical students assessing the stigma towards mental illness also stated the association of stigma and gender is not significant but the females are having a relatively higher mean of attitude than the males [2] The multi centric cross sectional study conducted in north India in a government and a private medical college stated the mean score of belief towards mental illness scale did not vary significantly when compared with the gender of the participating students.[3] In another cross sectional study done in US to investigate the factors associated with

stigmatization of persons with mental illness amongst undergraduate art students showed significantly less stigma in female gender compared to the males.[22] An exploratory study examining variables involved in the formation of attitudes towards psychiatric patients revealed that female responders had more feelings of fear and avoidance compared to males who had predominant feelings of anger and suspicion.[26] In another cohort study conducted to assess the effect of a clinical psychiatric posting of 8 weeks on the attitudes of medical students towards psychiatric and mental illness in hospital Universiti Kebangsaan Malaysia, has stated a significant higher positive attitude towards psychiatric and mental illness among female medical students compared to the males. [13]

There was a significant association between the nationality and ethnicity. The mean stigma score of Malay and Chinese was found to be higher compared with the mean stigma score of Indian and other ethnicities. In regards to nationality, Malaysians are having a higher mean stigma score compared to the International. The study conducted on Singapore nursing and Medical students stated there is no association between the ethnicity and stigma. However the Malay ethnicity is having a relatively higher mean attitude compared to the Chinese, Indian and others. [2] In a study conducted to access the stigma associated with mental illness perspectives of university students in Qatar showed that significantly more Qatari than Non Qatari students believe that mental illness is the result of procession of evil spirits, stress or traumatic events can result in mental illness and that people with mental illness can become parents. Study also reveals that there is no significant difference in in help seeking treatment preferences for mental illnesses between Qatari and non-Qatari. [4]

There is a significant difference between students with diagnosed psychiatric illness and students that were not diagnosed with psychiatric illness as the P value. The higher total mean value observed was from students that were not diagnosed with psychiatric illness with 43.84 while the lower mean value observed was from students with diagnosed psychiatric illness coming in at 37.00. This shows there is more stigma of psychiatric illness among those who have not been diagnosed with a psychiatric illness in comparison to those who have. In a previous similar study among the medical students done at the University of Mississippi Medical Center in the United States, stated that participants with personal experience with mental illness have a lower stigma compared to participants without. [29] As for family members of the participants diagnosed with psychiatric disorders and those participants whose families have not been diagnosed with a psychiatric disorder, there is a significant difference. The higher total mean observed was from participants whose families were not diagnosed with a psychiatric disorder with a score of 44.14 while the lower total mean observed was from participants whose family members were diagnosed with psychiatric disorders with a score of 38.86. This states that participants have a lower stigma when they have family members diagnosed with a psychiatric disorder in comparison to those participants without family members diagnosed with a psychiatric disorder.

Based on our study, there is no significant difference when friends/colleagues of the participants that are diagnosed with psychiatric disorders is compared to those participants with friends/colleagues that were not diagnosed with psychiatric disorders. The higher total mean is seen from those participants without friends/colleagues with diagnosed psychiatric disorders with a score of 44.80 while the lower total mean is seen in those participants with friends/colleagues that are diagnosed with psychiatric disorders with a score of 42.87. This states that participants with friends/colleagues who are diagnosed with psychiatric disorders have less stigma towards psychiatric illnesses in comparison to participants whom friends/colleagues that were not diagnosed with a psychiatric disorder. A study done in the United Kingdom back in 2003 revealed that those people who had had personal experience of people with mental illness were generally more positive in their attitudes towards them. [25]

This stigma may manifest into feelings of fear or anxiety and a desire to avoid and clinically distant themselves from psychiatric patients, which will cause a negative impact on doctor patient relationship and rapport in the future, contributing to stigmatizing experience amongst their patients. Many studies show that increased education on mental health disorders raises awareness on the organic cause of mental illness, subsequently leading to a lower level of stigma towards mental illness. Education of others, being aware of your colleagues and choosing your words carefully, supporting everyone and including everyone starting from peers in Medical School, and extending to a public setting should be employed immediately, and can help lowering the stigma towards psychiatric disorders.

Our study was conducted within a period of 6 weeks, due to time constraints. An extended period would have allowed for senior batches to be sampled. Only semester 6 and 7 were sampled in our study, as senior semesters 8, 9 and 10 involving shadow housemen are located in the Melaka Campus and could not be easily reached. Therefore, any difference in the level of stigma towards psychiatric illness in senior years could not be assessed and results may not represent the true stigma of all undergraduate students in MMMC. Many cohort studies observe changes in

stigmatizing attitudes over the course of the 5 years in Medical school, with increased clinical exposure. Such changes in stigma over the course of the degree could not be observed as this is a cross- sectional study. Since we conducted this study in one private institution, our result cannot be generalized to other populations or institutions. As our study is a cross sectional study, temporal relationship in the manifestation of stigma towards psychiatric illness could not be assessed in our study.

Inclusion of senior years should be considered so that the difference of stigma can be assessed with more clinical exposure, and so that the true level of stigma amongst all undergraduate medical students can be assessed. Stigma towards psychiatric disorders is an important concern amongst all health professionals. Therefore, this study should be extended beyond medical students, to other health professionals such as nurses, housemen, psychology students, etc.

5. Conclusion

Stigma towards psychiatric disorders is low among undergraduate medical students in our college. There were significant association in gender, religion, and among friends diagnosed with psychiatric disorders. Male gender, Malay, Chinese ethnicities, Muslim, Christian religions and Malaysian nationality revealed a relatively higher stigma. Moreover, students with diagnosed psychiatric disorders, family history of psychiatric illnesses, and students who were aware of friends with a diagnosed psychiatric illness revealed a lower stigma towards psychiatric disorders and mental illness.

Acknowledgements

We would like to extend our gratitude to all participants of this study from Batch 39 and 40. We wish to express our sincere gratitude to Dean Professor Dr Adinegara Lutfi Abas, Professor Dr Htoo Htoo Kyaw Soe, Associate Professor Dr Sujata Khobragade, and Assistant Professor Dr Mila Nu Nu Htay from the Department of Community Medicine of Melaka Manipal Medical College for guiding us throughout the duration of the study in making our study a success. Furthermore, we would like to thank the Research Ethics Commitee, Faculty of Medicine, Melaka Manipal Medical College, Malaysia for approving our study and for allowing us to embark on this research project

References

[1] WHO. World Health Report. Mental disorders affect one in four people, 2001.

[2] Yoshimasu, K., Kiyohara, C., Miyashita, K. et al. Environmental Health and Preventative Medicine (2008) 13: 243.

[3] National Alliance on Mental Illness. Mental health conditions.

[4] Edmund, S. G; Scientific American Mind. Mental Health. Is Mental Heath Declining in th U.S. 2017.

[5] Hannah R, Max R; Our world in Data. Mental Health.

[6] Claire, H., Sara, E. L., Graham, T., AJPH, Mental Illness Stigma, Help Seeking, and Public Health Programs, 2013.

[7] Mental Health Foundation. Stigma and discrimination.

[8] M. Subramaniam, E. Abdin, L Picco, S. Pang, S. Shafie J. A. Vaingankar et al. PMC, Epidemiology and Psychiatric Sciences. 2016.

[9] Patrick, W. C., Amy, C. W., PMC, World Psychiatry, Understanding the impact of stigma on people with mental illness. 2002.

[10] A. Mas., A. Hatim., Stigma in /mental Illness: Attitudes of Medical Students Towards Mental Illness.

[11] Suwalska, J., Suwalska, A., Neumann-Podczaska, A., Lojko D. APA PsycNET, Medical students and stigma of depression. Part 1. Stigmatization of patients. 2017.

[12] Stephanie, K., Ed, M., Andrew, S., SAGE, Healthcare Management Forum, Mental illness related stigma in healthcare. Barriers to care and evidence- based solutions.

[13] JP Reddy, SMK Tan, MT Azmi, MH Shaharom, R Rosdinom, T Maniam et al., Ann Acad Med Singapore, The Effect of a Clinical Posting in Psychiatry on the Attitudes of Medical Students Towards Psychiatry and Mental Illness in a Malaysian Medical School, 2005; 35: 505-10.

[14] Sherilyn, C., Hui, L. O., Esmond, Seow., Boon, Y. C., Edimansyah, A., Allaisha, S., et al., BMJ Open, Medical Education and Training Research, Stigma towards mental illness among medical and nursing students in Singapore: a cross sectional study.

[15] Ministry of Health Malaysia, National Health and Morbidity Survey, Non Communicable Diseases, Risk Factors and other health problems, Volume II, 2015; 187.

[16] Harry, M., Ruzanna, Z., Marhani, M., Alex, C., BMC Public Health, Attitudes of Malaysian General Hospital Staff towards patients with mental illness and diabetes, 2011; 317.

[17] Ainul, N. H., Tine, V. B., International Journal of Mental Health Systems, A qualitative exploration of the perspectives of mental health professionals on stigma and discrimination of mental illness in Malaysia, 2015.

[18] Kassam A., Glozier N., Leese M., Henderson C., Thornicroft G. (2010) Development and responsiveness of a scale to measure clinicians' attitudes to people with mental illness (medical student version). Acta Psychiatrica Scandinavica 122 (2), 153-161.

[19] P. Corry, Stigma Shouts: Service User and Carer Experiences of Stigma and Discrimination, Time to Change, London, UK, 2008.

[20] Mukherjee R, Fiahlo A, Wijetunge A: The stigmatisation of psychiatric illness: the attitudes of medical students and doctors in a London teaching hospital. Psychiatr Bull. 2002, 26: 178-181. 10.1192/pb.26.5.178.

[21] The World Health Report, Approach to Mental Health, WHO, Geneva, Switherland, 2001.

[22] Mann CEHimelein MJ Factors associated with stigmatization of persons with mental illness. *Psychiatr Serv* 2004; 55185-187.

[23] Dinos SStevens SSerfaty MWeich SKing M Stigma: the feelings and experiences of 46 people with mental illness: qualitative study. *Br J Psychiatry* 2004; 184176-181.

[24] Alem A, Kebede D, Woldesemiat G, Jacobsson L, Kullgren G: The prevalence and socio-demographic correlates of mental distress in Butajira, Ethiopia. Acta Psychiatr Scand Suppl. 1999, 397: 48-55.

[25] Addison SJ, Thorpe SJ (2004) Factors involved in the formation of attitudes towards those who are mentally ill. Soc Psychiatry Psychiatr Epidemiol 39: 228–234.

[26] Vistorte, Angel O. R., Ribeiro, W., Ziebold, C., Asevedo, E., Evans- Lacko, S., Keeley, J. W., et al: Clinical decisions and stigmatizing attitudes towards mental health problems in primary care physicians from Latin American countries. PLOS ONE. 2018.

[27] Youssef FF. Attitudes toward mental illness among Caribbean medical students. Educ Health 2018; 31: 3-9.

[28] Kumar MV, Macharapu R, Reddy PK, Babu S. Attitude toward mental illness among medical students and nonpsychiatric doctors [Internet]. Archives of Mental Health. Indian Psychiatric Society-Andhra Pradesh Branch; 2019 [cited 2019Dec5]. Available from: http://www.amhonline.org/article.asp?issn=2589-9171;year=2019;volume=20;issue=1;spage=9;epage=13;aulast=Kumar

[29] Roth, D., Antony, M. M., Kerr, K. L., & Downie, F. (2000). Attitudes toward mental illness in medical students: does personal and professional experience with mental illness make a difference? Medical Education, 34 (3), 234–236. doi: 10.1046/j.1365-2923.2000.00478.x.