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Dental Students' Perception, Attitude and Willingness to Interact with Mental Illness Patients: A Multicentre Cross-Sectional Study

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Cover Page Footnote

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ORIGINAL ARTICLE

Dental Students' Perception, Attitude and Willingness to Interact with Mental Illness Patients: A Multicentre Cross-Sectional Study

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ABSTRACT

Mental illness is a psychological impairment involving emotions, cognitions, and behaviors, and its prevalence is increasing worldwide. Dental students may encounter patients with underlying psychological problems during their training. **Objective :** To evaluate dental students' perception, attitude, and willingness to interact with patients with mental illness. **Methods:** A multi-center cross-sectional study was conducted involving undergraduates at three dental institutions in Malaysia using an online self-administered questionnaire. Descriptive data analysis was conducted and statistical analysis using chi-square test was done for associations ($p < 0.05$). **Results:** The response rate was 63% (225); the majority of respondents were female (77.8%) and of Malay ethnicity (88.4%). Our study found that positive attitudes are independent of respondents' sociodemographic profiles. No significant differences in attitudes were portrayed by gender, race, or history of mental illness. Our findings suggest that respondents' place of study, gender, and previous encounter with mental illness are associated with willingness to interact with patients ($p < 0.05$). **Conclusions:** Dental students displayed positive attitudes and willingness to interact with patients with mental illness. However, to further improve students' attitudes and enhance their readiness to interact with patients with mental illness, more mental health-related educational programs should be introduced in the dental curricula.

Key words: attitude, dental students, mental illness, perception, willingness

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INTRODUCTION

According to the World Health Organization (WHO), mental illness has become one of the public health concerns worldwide.¹ It is characterized by various abnormalities, including emotions, cognitions, and behaviors that interfere with normal functions and development.¹ Almost 972 million individuals worldwide have suffered from either mental or substance disorders.² According to the WHO, one out of every four people in the world has been diagnosed with this type of illness.¹ It can be anxiety disorders, depression, bipolar disorder, schizophrenia, obsessive-compulsive disorder (OCD), other psychoses, dementia,

or developmental disorders, including autism. The ongoing coronavirus disease 2019 pandemic has had a significant impact on the mental health and wellbeing of the human population globally. It led to various psychosocial consequences resulting from coronavirus patients or close contacts undergoing quarantine or isolation, or people being healthcare providers, changing schooling environment, becoming jobless, and many other circumstances.^{3,4}

In Malaysia, according to the Ministry of Health (MOH), there has been a dramatic growth in the

prevalence of mental illness among Malaysians. Compared to 1996, the incidence had increased almost three-fold to 29.2% in 2015; every three in ten adults aged 16 years and above suffer from some form of mental health problem.⁵ About half a million Malaysian adults had depression in 2019.⁶ The implementation of lockdown worldwide to control the spread of COVID-19 infection worsened this situation. A study by Wong et al. found that as COVID-19 progressed, mental health indicators among Malaysians increased significantly, particularly among young individuals, females, and individuals in financial distress.⁷ The study also highlighted that individuals with fair to poor health status were more susceptible to elevated depressive symptoms than those with good health status.

Apart from poor health status, a patient with mental illness is at higher risk of developing oral health problems. This is due to poor oral hygiene, increased sugar consumption, smoking, adverse effects of psychiatric medications, and barriers to accessing dental care.^{8,9} A systematic review and meta-analysis conducted in 2015 concluded that individuals with severe mental illness have significantly more decayed, missing, and filled teeth than an average individual.¹⁰ In addition, most patients with mental illness tend to have a negative attitude towards dental healthcare providers and lack cooperation during dental treatment.¹¹ This is most likely due to the members of the community's anxiety, stigma, and discrimination they perceive. Nevertheless, another study investigating the experience of stigma among mental health patients in healthcare and dental settings showed an unexpected result. The study concluded that individuals with substance addiction and mental illness consistently experienced direct or indirect stigmatization even in the healthcare system.¹² Stigmatizing and discriminatory behavior among health professionals towards patients is considered a serious issue that needs special attention. It can jeopardize the patient and health practitioner relationship, confidence, compliance with a treatment plan, and consequent recovery.¹³

In dental curricula, specifically in Malaysia, there is no specific psychiatric clinical rotation. However, students are taught on these selected topics concerning oral health management of psychiatric patients and a general medicine module. A previous study indicated that most dental practitioners ignored patients' psychological problems; only 10% of them would refer their patients to a medical doctor or psychiatrist for further evaluation and management.¹⁴ Thus, the present study highlighted the perception and attitudes of dental students towards patients with mental illness and the degree of willingness to interact with them. With the increased prevalence of mental illness in Malaysia, dental students' perception, attitudes, and willingness to treat patients with mental illness are significantly important and remain uncertain. This

study is anticipated to inform the relevant stakeholders to design and improve the present dental curricula and integrate psychiatry subjects to a greater degree.

METHODS

This was a descriptive, cross-sectional study involving three dental schools in Malaysia, namely dental institution A (DIA), dental institution B (DIB), and dental institution C (DIC). Prior to data collection, an official invitation letter for participation in the study was sent to each dental institution. An electronic-based self-completed questionnaire utilizing Google Forms was developed for this project. All students from the respective institutions in academic years three and four were invited to participate in this study and purposive sampling was used. This cross-sectional study complies with the STrengthening the Reporting of OBservational studies in Epidemiology (STROBE) statement for cross-sectional studies. Ethical approval was obtained from the Universiti Sains Malaysia Ethical Committee (Ethic Number: USM/JEPeM/19120917).

Study tools

The online questionnaire was developed using a validated questionnaire by Wahl et al. for perception, attitude, and willingness to interact with patients (by social distance scale item).¹⁵ Test-retest correlations for overall scores for knowledge, attitude, and willingness to interact were 0.49, 0.74, and 0.89, respectively. The Cronbach's alphas for perception, attitude, and willingness to interact were 0.63, 0.83, and 0.91, respectively. The questionnaire consists of four sections: 1) Section 1: Students' profiles; 2) Section 2: Perception of mental illness; 3) Section 3: Attitude towards mental illness; and 4) Section 4: Willingness to interact with patients with mental illness. The original domain term given for Section 2 was changed to "perception" instead of "knowledge" as items reflected the students' perception rather than knowledge. A dichotomous answer type, which consisted of "yes" or "no" was used in Section 2. The students were asked about their attitudes towards mental illness. They indicated the degree to which they agreed or disagreed with each item based on a Likert scale: "strongly disagree" = 1, "disagree" = 2, "unsure" = 3, "agree" = 4, and "strongly agree" = 5. Several items were negatively scored: A6, A9, A10, A11, A12, A13, A14, A15, A16, and A17. The total score for attitude was 85, with a score less than 51 being considered a negative attitude. As for Section 4 questions, the Likert answer type consisted of 5 = "definitely willing", 4 = "probably willing", 3 = "neither unwilling nor willing", 2 = "probably unwilling", and 1 = "definitely unwilling", respectively, giving a total score of 35. The students were considered as more willing if their scores were ≥ 21 ; otherwise, they were considered as less willing. There was no pretesting of the questionnaire as we

used the English version of a validated questionnaire. The ceiling and floor effects were not examined before conducting the actual study.

Data collection

The study was conducted in four consecutive weeks, starting from June 2020 until July 2020. A co-researcher from each dental institution was responsible for distributing the online questionnaire and research information via students’ group email and a social media platform (WhatsApp messenger). Emails and messages were sent fortnightly as a reminder to answer the questionnaire. Consent was obtained from students before they answered the questionnaire via Google Forms. Exclusion criteria were students with a history of or present mental illness, medical treatment for the disease, and unwillingness to give consent. If they did not meet the exclusion criteria, they had to click “Agree” to proceed to answer the online questionnaire.

Statistical analysis

Data entry and analysis were performed using Statistical Package for Social Sciences (IBM SPSS Statistics for Windows, Version 26.0, IBM Corp., Armonk, NY, USA). Accordingly, descriptive data analysis was conducted using frequency and percentage for categorical variables or mean and standard deviation (SD) for numerical variables. Chi-square analysis was used to determine the association between variables. The significance level was set at $p < 0.05$.

RESULTS

The overall response rate was 63.0% ($n = 225/357$; DIA 36.0%, DIB 30.7%, and DIC 33.3%). The majority of the respondents were female (77.8%, $n = 175$) and Malay (88.4%, $n = 190$). About 62% of students indicated that they had a history of encounters with individuals with mental illness. Table 1 summarizes the students’ profiles and previous history experience of individuals with mental illness.

The degree to which students agreed with statements regarding mental illness is depicted in Figure 1. Almost all students agreed that mental illness is a very serious problem (item P3, 97.3%). A majority agreed that psychological treatment is beneficial in treating the disease, while 70.7% agreed that it could be treated with medication.

Table 2 depicts the attitudes towards mental illness among the students. The result showed that 67% (item A2) of students strongly agreed that more efforts should be made to help people with mental illness to get better. Most students (item A3, 71%) strongly agreed that jokes about mental illness are hurtful.

Table 1. Characteristic students’ profiles and previous experience with mental illness individual (N = 225)

| Variables | Frequency (N) | Percentage (%) |
|--|---------------|----------------|
| Dental institution | | |
| A | 81 | 36 |
| B | 69 | 30.7 |
| C | 75 | 33.3 |
| Year of study | | |
| Year 3 | 102 | 45.3 |
| Year 4 | 123 | 54.7 |
| Gender | | |
| Female | 175 | 77.8 |
| Male | 50 | 22.2 |
| Race | | |
| Malay | 190 | 84.4 |
| Chinese | 25 | 11.1 |
| Indian | 5 | 2.2 |
| Others | 5 | 2.2 |
| Family history of mental illness | | |
| Yes | 19 | 8.4 |
| No | 206 | 91.6 |
| Living in neighbourhood with mental illness patient | | |
| Yes | 37 | 16.4 |
| No | 188 | 83.6 |
| Previous encounter with mental illness patient | | |
| Yes | 139 | 61.8 |
| No | 86 | 38.2 |

Table 3 shows the undergraduate dental students’ willingness to interact with patients with mental illness. The majority of students reported that they were willing to talk to someone with mental illness (40%, $n = 89$); however, almost 66% did not want to date someone with mental illness. There was no significant association detected between the dental institution, year of study, gender, race, family history of mental illness, or home neighborhood and mental illness, or previous encounter with patients with mental illness concerning attitude towards mental illness (see Table 4). There was a significant association detected between dental institution, gender, and previous encounter with mental illness and willingness to interact with patients with mental illness ($p < 0.05$) (see Table 5).

DISCUSSION

This study evaluated the perception, attitude, and willingness of dental students to interact with patients with mental illness in three different institutions.

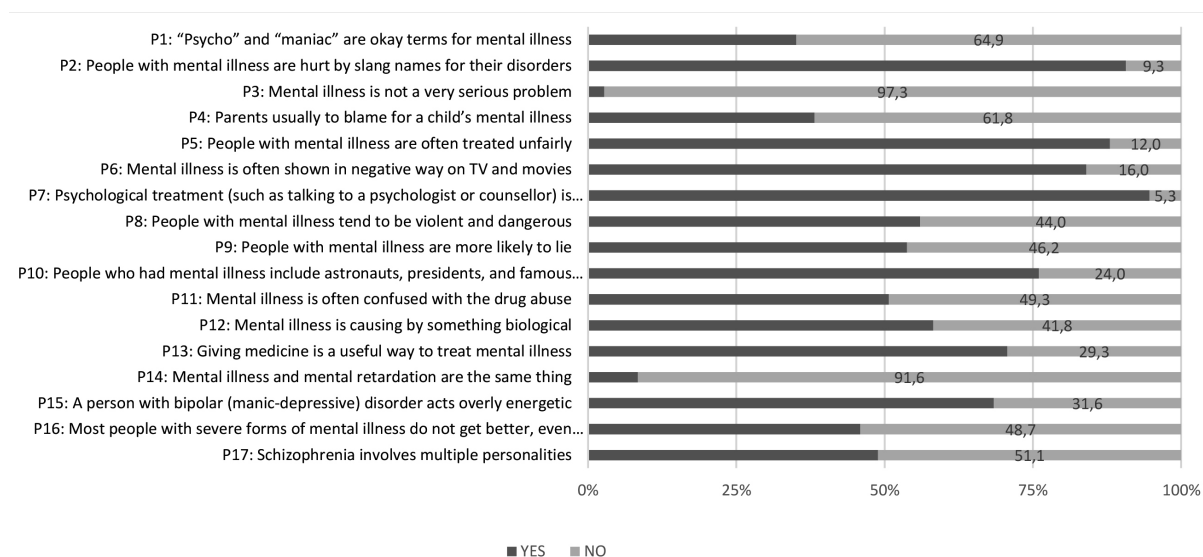


Figure 1. Proportion of perception towards mental illness among undergraduate dental students (N = 225)

Table 2. Students' attitude toward mental illness patients (N=225)

| Item | Strongly agree (%) | Agree (%) | Unsure (%) | Disagree (%) | Strongly disagree (%) | Mean (SD) |
|--|--------------------|-----------|------------|--------------|-----------------------|------------|
| A1: People with mental illness deserve respect | 56.9 | 22.2 | 9.3 | 5.3 | 6.2 | 4.2 (1.19) |
| A2: We should do more to help people with mental illness get better | 67.1 | 16.9 | 3.1 | 5.8 | 7.1 | 4.3 (1.22) |
| A3: Jokes about mental illness are hurtful | 70.7 | 12.0 | 2.2 | 7.1 | 8.0 | 4.3 (1.28) |
| A4: It is important to learn about mental illness | 65.8 | 18.2 | 2.2 | 6.7 | 7.1 | 4.3 (1.23) |
| A5: A person with mental illness is able to be a good friend | 31.6 | 29.3 | 24.9 | 10.2 | 4.0 | 3.7 (1.13) |
| A6: It is a good idea to avoid people who have mental illness | 12.0 | 7.6 | 23.6 | 26.7 | 30.2 | 3.6 (1.32) |
| A7: I would be comfortable meeting a person with mental illness | 12.9 | 29.3 | 40.0 | 14.2 | 3.6 | 3.3 (0.99) |
| A8: People with mental illness are able to help others | 24.9 | 32.0 | 28.0 | 10.7 | 4.4 | 3.6 (1.10) |
| A9: I would be frightened if approached by a person with mental illness | 7.1 | 20.4 | 36.4 | 20.9 | 15.1 | 3.2 (1.13) |
| A10: If I had mental illness, I would not tell any of my friends | 13.8 | 31.6 | 33.3 | 14.2 | 7.1 | 2.7 (1.10) |
| A11: If any friends of mine had a mental illness, I would tell them not to tell anyone | 9.3 | 14.2 | 29.8 | 30.7 | 16.0 | 3.3 (1.17) |
| A12: Keeping people with mental illness in the hospital makes the community safer | 5.8 | 14.7 | 37.8 | 24.9 | 16.9 | 3.3 (1.10) |
| A13: Only people who are weak and overly sensitive let mental illness affect them | 9.3 | 14.7 | 20.0 | 30.2 | 25.8 | 3.5 (1.28) |
| A14: It would be embarrassing to have a mental illness | 10.7 | 19.6 | 20.4 | 24.0 | 25.3 | 3.3 (1.33) |
| A15: Students with mental illness should not be in regular classes | 6.2 | 12.4 | 27.1 | 28.4 | 25.8 | 3.6 (1.18) |
| A16: I have little in common with people who have mental illness | 7.6 | 16.0 | 49.3 | 16.9 | 10.2 | 3.1 (1.02) |
| A17: Students with mental illness need special programs to learn | 12.4 | 26.7 | 33.8 | 19.6 | 7.6 | 2.8 (1.11) |

Table 3. Students' willingness to interact with mental illness patient (N = 225)

| Item | Definitely willing (%) | Probably willing (%) | Neither willing nor unwilling (%) | Probably unwilling (%) | Definitely unwilling (%) | Mean (SD) |
|---|------------------------|----------------------|-----------------------------------|------------------------|--------------------------|------------|
| 1) Talk to someone with mental illness | 39.6 | 40 | 9.3 | 8.4 | 2.7 | 4.1 (1.03) |
| 2) Make friends with someone with a mental illness | 37.3 | 34.7 | 18.7 | 6.2 | 3.1 | 4.0 (0.98) |
| 3) Have someone with a mental illness in a class with you | 37.3 | 34.7 | 18.7 | 6.2 | 3.1 | 3.9 (1.04) |
| 4) Sit next to someone with mental illness | 32.9 | 32 | 24.9 | 8.9 | 1.3 | 3.7 (1.02) |
| 5) Invite someone with mental illness to your home | 24.4 | 30.2 | 30.7 | 12 | 2.7 | 3.6 (1.06) |
| 6) Work on class project with someone with mental illness | 25.3 | 36 | 24.4 | 11.6 | 2.7 | 3.7 (1.06) |
| 7) Go on a date with someone with mental illness | 14.7 | 19.6 | 37.8 | 14.2 | 13.8 | 3.1 (1.22) |

Table 4. Association between demographic background, history and experience of students in relation to attitude towards mental illness individual (N = 225)

| Variable | Attitude towards mental illness, N (%) | | (df) | p |
|---|--|-------------------|-----------|-------|
| | Positive attitude | Negative attitude | | |
| Dentistry institution | | | | |
| DIA | 70 (31.1) | 11 (4.9) | 3.484 (2) | 0.175 |
| DIB | 56 (24.9) | 13 (5.8) | | |
| DIC | 56 (24.9) | 19 (8.4) | | |
| Year | | | | |
| Year 3 | 82 (36.4) | 20 (8.9) | 0.030 (1) | 0.863 |
| Year 4 | 100 (44.4) | 23 (10.2) | | |
| Gender | | | | |
| Male | 37 (16.4) | 13 (5.8) | 1.974 (1) | 0.160 |
| Female | 145 (64.4) | 30 (13.3) | | |
| Race | | | | |
| Malay | 152 (67.6) | 38 (16.9) | 0.624 (1) | 0.429 |
| Others | 30 (13.3) | 5 (2.2) | | |
| Family history of mental illness | | | | |
| Yes | 15 (6.7) | 4 (1.8) | 0.051 (1) | 0.822 |
| No | 167 (74.2) | 39 (17.3) | | |
| Living in a neighbourhood with mental illness patients | | | | |
| Yes | 30 (13.3) | 7 (3.1) | 0.001 (1) | 0.974 |
| No | 152 (67.6) | 36 (16) | | |
| Previous encounter with mental illness patients | | | | |
| Yes | 117 (52) | 22 (9.8) | 2.537 (1) | 0.111 |
| No | 65 (28.9) | 21 (9.3) | | |

Table 5. Association between demographic background, history and experience of students in relation willingness to interact with patients (N=225)

| Variable | Willingness towards mental illness, N (%) | | (df) | p |
|---|---|------------------|----------|--------|
| | More willingness | Less willingness | | |
| Dentistry institution | | | | |
| DIA | 68 (30.2) | 13 (5.8) | 9.707(2) | 0.008* |
| DIB | 59 (26.2) | 10 (4.4) | | |
| DIC | 50 (22.2) | 25 (11.1) | | |
| Year | | | | |
| Year 3 | 80 (35.6) | 22 (9.8) | 0.006(1) | 0.937 |
| Year 4 | 97 (43.10) | 26 (11.6) | | |
| Gender | | | | |
| Male | 34 (15.1) | 16 (7.1) | 4.358(1) | 0.037* |
| Female | 143 (63.6) | 32 (14.2) | | |
| Race | | | | |
| Malay | 151 (67.1) | 39 (17.3) | 0.474(1) | 0.491 |
| Others | 26 (11.6) | 9 (4) | | |
| Family history of mental illness | | | | |
| Yes | 17 (7.6) | 2 (0.9) | 1.444(1) | 0.229 |
| No | 160 (71.1) | 46 (20.4) | | |
| Living in a neighbourhood with mental illness | | | | |
| Yes | 33 (14.7) | 4 (1.8) | 2.922(1) | 0.087 |
| No | 144 (64) | 44 (19.6) | | |
| Previous encounter with mental illness patient | | | | |
| Yes | 116 (51.6) | 23 (10.2) | 4.965(1) | 0.026* |
| No | 61 (27.1) | 25 (11.1) | | |

^aChi-square analysis
*significant at the 0.05 level

Based on the author’s knowledge, no study has been conducted to evaluate this issue from the perspective of dental students in Malaysia. In the present study, the majority of the students were female. It has been reported that about 71% of female students in Malaysian public universities enroll in health and welfare-related courses.¹⁶ More than half of the students surveyed indicated that they had a history with individuals with mental illness. This is considered a substantially high proportion and might be related to the current location of each dental institute; DIA is in Kelantan, which displayed the highest prevalence of mental illness (39.1%) according to the National Health and Morbidity Survey (NHMS) 2015, DIB is in Selangor (29.3%), and DIC is in Pahang (27.8%).⁵ However, there is a possibility that the students had encountered individuals with mental illness outside of a dental institution.

Students’ perception of mental illness

More than half of undergraduate dental students

disagreed with use of the terms “psycho” and “maniac” for patients with mental illness. In another study among university students in Asian countries, almost 90% of the students did not agree with labeling patients with mental illness as insane, and about 51% of them had negative perceptions.¹⁷ Insane may not carry the same meaning as psycho or maniac. There is a broad spectrum of mental illness disorders, patients having illnesses with varying severity and symptoms.¹⁸ Patients with mental illness who have poor insight also have a higher tendency to be labeled as insane than those with good insight.¹⁹ Our study reflected a good perception of mental illness being mistreated and negatively shown in social media. However, about 56% of students agreed that patients with mental illness tend to be more violent and dangerous; the percentage was very much higher than that found by Puspitasari et al. (13%) but did not differ much from that in the studies by Sadik et al. (50%) and Youssef et al. (53%).^{17,20,21} However, a much higher percentage (72%) of medical students in their clinical years agree with the statement

due to their experience in contact with those with mental illness.²¹ A high percentage (90%) was also found in another study among students in health-related fields (medical/pharmacy/nursing).²² Despite having a psychiatric syllabus as part of the medical topics in dentistry teaching, in the current study we discovered a gap in understanding specific psychiatric illnesses including bipolar disorder and schizophrenia.

Students' attitude towards mental illness

In the present study, about 12% of students disagreed that patients with mental illness need respect, which is much higher than the proportions recorded by Puspitasari et al. and Wahl et al. (less than 1%).^{15,17} This might be due to a lack of respect as patients with mental illness were perceived as more violent and dangerous. People dealing with unstable and aggressive patients with mental illness are more likely to demonstrate a negative attitude. It has been reported that nurses working at acute psychiatric units have more negative attitudes towards mental illness compared with those working in psychiatric rehabilitation units and outpatient clinics or community psychiatric rehabilitation centers.²³

This study demonstrated a smaller percentage of students having attitudes to keep patients with mental illness away from other people, either becoming part of a community, or living or studying together. More negative attitudes towards patients with mental illness will result in avoidance behavior. About 86% of the students felt that the dangerous behavior of patients with mental illness might be a good reason to avoid contact with them.²² The present study recorded positive attitudes towards individuals with mental illness, with no significant association with students' sociodemographic characteristics. However, the data should be interpreted with caution as most students were Malay with smaller and uneven samples of those of other ethnicities. A study by Li et al. stated that Chinese people tend to show negative attitudes towards individuals with mental illness;²⁴ however, in the Malaysian context, a previous study described that Chinese families were more accepting and supportive of individuals with mental illness.¹³

A study among Indonesian university students found an association between gender and attitudes towards mental health disorders ($p < 0.05$); specifically, female students were more tolerant of people with mental illness.¹⁷ In another study, age, year of study, knowing or having direct contact with patients with mental illness, and knowledge of mental illness were found to be the associated factors.²⁵

Students' willingness to interact with patients with mental illness

Overall, most students were willing to interact with patients with mental illness; however, the proportion

of those unwilling to interact or unsure of interacting increased when it comes to closer relationships. Likewise, other studies have described less willingness towards closer relationships.^{15,26,27} In our study, it was noted that female students were more willing to interact with patients with mental illness. A previous study showed that females had more sympathetic attitudes,²⁸ and even though they were fearful and avoidant, they were more open-minded.²⁹ In contrast, a study among university students in Hong Kong showed that females were less willing to interact.³⁰ This difference is most likely due to factors external to mental disorders such as differences in personality, a non-medical background, the presence of prejudice, or no previous contact with people with mental illness.²⁹⁻³¹

In our study, students' dental institution was also associated with the willingness to interact. There were differences in the type and depth of mental illness-related topics delivered in each institution. It is possible that the sociocultural background of the area could influence this as the institutions are in semi-urban and urban regions. A previous qualitative study among healthcare students revealed that the program they attended did not provide an adequate mental illness education syllabus to prepare them effectively for interacting with individuals with mental illness. As the respondents anticipated learning more during their training, the authors also suggested including practical training as one of the interventions in the program.²⁸ Apart from classroom training and clinical experiences, a study used academic instruction to evaluate the effects of a one-hour educational program on medical students' attitudes and found that attitudes towards mental illness changed favorably following the program.³²

Limitations of study

This study has a few limitations. It was conducted with a specific cohort of registered dental students, involving only three dental institutions in Malaysia. As Malaysia has 13 dental institutions, the representative view might be varied in another student cohort differing by dental institution, demographically, and socially. The distribution of the sample in terms of gender and ethnicity was also comparably uneven. Thus, it is advisable to include more dental institutions with a larger sample size, using a systematic sampling technique, to have a true representation of the subject matter. In addition, this study might also be subject to response bias; students could be reluctant to acknowledge their negative perceptions of individuals with mental illness. The ceiling and floor effects of the questionnaire were not evaluated in the original development of the questionnaire. However, in the current study, there is a likelihood of a ceiling effect as most of the scores for each section favored the highest range of score compared to lowest range.³³ However, despite the limitations, our study managed to provide

an insight into dental students' perception, attitudes, and willingness to interact with individuals with mental illness, and highlight the importance of mental health education in dental curricula.

CONCLUSION

From this study, we concluded that the majority of students displayed a positive attitude toward mental illness individuals, with no significant association found between respondents' demographic data. Females' student is more positive in willingness to interact with patient presented with mental illness.

CONFLICT OF INTERESTS

The author declared that there is no conflict of interest. This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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