

Knowledge and Attitude of Health Specialties Students Toward Psychological and Depression Medicines on Oral Health

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ABSTRACT

Background: Oral health is a combination of social, psychological, and physiological factors that are critical for our quality of life. Many commonly prescribed antidepressants and antipsychotics are somehow associated with profound oral health side effects. While dental professionals are well-educated in these effects, the awareness among other health specialty students remains unclear. Since they are involved in patient care and medication prescription, their knowledge at this point is crucial. The study seeks to assess knowledge and awareness levels about the impact of psychological and depression medicines on oral health. In addition, it aims to evaluate their confidence in discussing these effects with patients.

Materials and Methods: A cross-sectional study using a structured questionnaire among 351 health specialty students from medicine, pharmacy, nursing, physical therapy, occupational therapy, respiratory therapy, and health administration, excluding dental students. The data were analyzed to determine knowledge and attitude levels and differences among specialties.

Results: The total knowledge score ranged from 10 to 45, with a mean \pm standard deviation (SD) of 28.20 ± 7.91 . The mean attitude score ranged from 10 to 50, with a mean \pm SD of 32.70 ± 9.01 . Male students scored significantly higher than females in both knowledge (29.23 ± 6.86 vs. 27.45 ± 8.53 ; $P = 0.033$) and attitude (33.84 ± 7.27 vs. 31.87 ± 10.03 ; $P = 0.036$). Students from governmental universities had higher knowledge (30.79 ± 7.33 vs. 26.82 ± 7.88 ; $P < 0.001$) and attitude (36.04 ± 7.85 vs. 30.92 ± 9.10 ; $P < 0.001$) scores compared to private universities. A strong positive correlation was observed between knowledge and attitude ($r = 0.777$, $P < 0.001$), suggesting that improving knowledge may enhance attitude.

Conclusion: Different attitudes toward antidepressants and antipsychotic medicines are common among health specialty students. It is therefore necessary to improve their knowledge levels toward the impact of such drugs on oral health.

Keywords: Antidepressive agents, antipsychotic drugs, attitude, dental, health occupations, healthcare delivery, knowledge, students

Introduction

Individuals with psychiatric disorders also have comorbidities such as diabetes, cardiovascular disease, and chronic lung disease.^[1] Providing an important contribution to physical and mental well-being, oral health is also closely associated with different chronic conditions.^[2] Psychotropic medications such as antidepressants and antipsychotics very often lead to oral health challenges such as dental caries, periodontal disease, xerostomia, and bruxism, according to existing research.^[3]

In Saudi Arabia, using data from the Saudi National Mental Health Survey, the lifetime prevalence of mental

disorders among adolescents has been reported to be around 40.1%, with females being more affected than males.^[4] People suffering from severe mental illness (SMI) are at higher risk of poor physical health and oral health is often neglected in their cases.^[5,6] Medications used to treat psychiatric illness have been shown to worsen dental problems and have been associated with adverse outcomes, including tooth loss, periodontal disease, and poor oral health-related quality of life.^[7] Individuals with SMI have been reported to be 2.8 times more likely to be edentulous and have higher rates of decayed, missing, or filled teeth than the general population.^[8] Other factors such as lack of motivation, poor attitudes of dental personnel, fear of treatment,

and high cost of care also contribute to less oral health maintenance in the above population.^[9]

Systemic inflammatory processes causing disease progress have been linked depression and anxiety through literature establishing the association of mental illnesses with chronic periodontitis.^[10] Adverse oral health effects are associated with the use of psychotropic medications, including selective serotonin reuptake inhibitors but less is known about their risks, including dry mouth, which increases the risk for caries and periodontal complications.^[11] As these medications are commonly prescribed, healthcare providers must recognize their effects on the oral cavity and educate patients accordingly. Given the widespread prescription of these medications, healthcare professionals need to be aware of their impact on oral health and educate patients accordingly.

At present, no sufficient studies were conducted in the Kingdom of Saudi Arabia that assesses the knowledge of health specialty students regarding the effects of psychological and depression medications on oral health. Understanding this knowledge gap is important, as health specialty students play a key role in patient care and medication prescription.^[12] The present study aims to investigate their awareness and identify areas where educational improvements may be necessary to enhance patient care.

In addition, the study evaluates the barriers faced by individuals with SMI in maintaining oral health and seeks to put forward strategies for better collaboration between healthcare providers and dental professionals.^[13] By addressing these obstacles, healthcare providers can offer more comprehensive care and improve the overall wellness of patients taking psychotropic drugs.^[14,15]

Materials and Methods

Study design and ethics

This study was a cross-sectional questionnaire survey conducted in the southern (Abha city) and western (Jeddah city) regions of Saudi Arabia. The target population included health specialties students enrolled in the following health specialty programs: Medicine, Pharmacy, Nursing, Radiology, Respiratory Therapy, Physical Therapy, and Health Administration. The study aimed to assess their level of knowledge and was carried

out in August 2024. The study was approved by the BMC research ethics committee (IRB: RES-2024-0053).

Study setting

The study was conducted in Saudi Arabia. Participants were health specialty students from different universities in the southern and western regions. The participation access process involved contacting dental schools in Saudi Arabia to gain access to students from other health specialties. Ethical approval and necessary permissions were obtained before data collection. The sampling method employed was a stratified sampling technique, dividing health specialties students into groups based on specific criteria.

Inclusion criteria

- Participants: Health specialties students currently enrolled in accredited health specialty programs
- Age: Participants aged 18 years or older
- Study level: Students from all academic years of health specialty programs
- Consent: Participants who provided informed consent to participate in the study
- Survey completion: Participants who completed the survey in their entirety
- Location: Students from health specialty schools within Saudi Arabia.

Exclusion criteria

- Dental specialties students: Individuals enrolled in a dental program and preparatory year students
- Age: Participants below 18 years of age
- Incomplete surveys: Surveys with missing or incomplete responses
- No consent: Participants who did not provide informed consent
- Location: Students from health specialty schools outside Saudi Arabia.

Sample size

The sample size was calculated using the Qualtrics calculator, assuming an estimated population of 3,000 students from official university websites. With a 95% confidence level and 5% margin of error, the minimum required sample size was 341 participants. A total of 351 responses were received, 8 of which refused participation, resulting in a final sample of 343 participants. Considering that the total number of

eligible students after excluding dental and preparatory year students was 6,656, the study sample represents approximately 45% of the target population, which is sufficiently large to provide a reliable estimate.

Data collection and instrument

The questionnaire was designed to assess knowledge and awareness about the impact of psychological medicines on oral health among health specialty students in Saudi Arabia. By completing the survey, participants gave consent to participate in the research study. All responses were kept confidential and used exclusively for research purposes.

The survey instrument was a self-administered questionnaire developed in English, which assessed health specialties students' knowledge of psychological medicines and their impact on oral health. The questionnaire covered the following areas:

Knowledge score

The knowledge score was derived from questions focused on participants' understanding of psychotropic medicines and their oral health implications. Key areas assessed included:

1. Familiarity with the term "psychotropic medicines"
2. Awareness of the oral health side effects of psychotropic medicines
3. Ability to identify common psychotropic medicines that may impact on oral health
4. Knowledge of interactions between psychotropic medicines and common dental treatments.

Attitude score

The attitude score was based on participants' views regarding the importance of education and collaboration in managing oral health in patients on psychotropic medicines. The areas assessed included:

1. The belief that dental students should receive training on recognizing the oral effects of psychotropic medicines
2. Support for collaboration between dental and mental health professionals
3. Comfort in discussing the oral health implications of psychotropic medicines with patients
4. Perceived need for further research in this field
5. Both the knowledge and attitude scores were calculated using a Likert scale (1–5), where higher

scores reflected greater knowledge and more positive attitudes.

Pilot test

The questionnaire was developed through a thorough literature review and expert consultation to ensure it covered key knowledge and attitude areas related to psychotropic medicines and oral health. A pilot study was conducted with 118 participants; it yielded the following average scores: Knowledge score of 75.4 and attitude score of 68.2.

The pilot test confirmed that the questionnaire was clear, feasible, and appropriately structured, with no major issues reported by participants. Content and face validity were established through expert review and pre-testing. Reliability was acceptable, with Cronbach's alpha values of 0.76 for the knowledge section and 0.80 for the attitude section, indicating good internal consistency and supporting the suitability of the instrument for the main study.

Data entry and statistical analysis

Data entry was performed using Microsoft Excel 2021, with subsequent transfer to the Statistical Package for the Social Sciences (SPSS) for analysis. Descriptive statistics were used to summarize sociodemographic data, including frequencies and percentages for academic year and specialty. The statistical analysis of the data was performed using IBM SPSS software version 20.0 (Armonk, NY: IBM Corp, released 2011). Categorical data were summarized as numbers and percentages. For continuous data, normality was assessed using the Shapiro–Wilk test.

Quantitative data were described using range (minimum and maximum), mean, and standard deviation. The significance of the results obtained was judged at the 5% level. The tests used were Student t-test for normally distributed quantitative variables, to compare between two studied groups, F-test (analysis of variance) for normally distributed quantitative variables, to compare between more than two groups, and Pearson coefficient to correlate between two distributed quantitative variables. The level of significance will be set at 0.05 for all tests. These statistical tests align with the study's objectives, which aim to explore associations between demographic factors and knowledge/attitudes, as well as identify predictors for effective oral health management.

Results

Demographic characteristics of participants

A total of 343 students from health programs participated in this study. Most respondents were Saudi citizens (81.9%) while the remaining respondents (18.1%) belonged to different nationalities. Regarding gender, the number of females, constituting 58.0% is more compared to males, who made up 42.0%, with respect to the type of institution, 65.3% of the students were from private institutions and 34.7% were from public institutions.

The respondents were from various universities as follows: Batterjee Medical College (38.2%), King Khalid University (35.0%), and Ibn Sina College (26.8%). Most of the participants were represented by Medicine (38.5%), followed by Nursing (19.0%), Pharmacology (12.5%), and Radiology (11.4%). A few numbers were represented by Physical Therapy (9.9%), Respiratory Therapy (4.7%), and Health Administration (4.1%).

In terms of age, 16.9% were aged 18–20 years, 60.3% were 21–25 years, 17.5% were 26–30 years, and 5.2% were older than 30. The participants had diverse GPAs, such that 33.5% were rated excellent, 42.0% very good, 16.9% good, 2.3% satisfactory, and 5.2% classified under others, as depicted in Figure 1.

Knowledge score assessment

The distribution of answers for the knowledge items for health specialty students is displayed in Table 1. While

other items revealed different degrees of participant uncertainty and disagreement, Question 1 had the highest percentage of agreement (either “Agree” or “Strongly Agree”) (59.5%).

Attitude score assessment

The distribution of answers for attitude items for students specializing in health is shown in Table 2. With a high percentage of agreement across a range of issues, most participants expressed favorable opinions regarding the significance of education regarding psychotropic medications and oral health.

Relation between overall knowledge and attitude scores

Figure 2 displays the total knowledge score from 10 to 45, and the mean \pm standard deviation (SD) was 28.20 ± 7.91 . The mean knowledge score on a 5-point Likert scale was 3.13 ± 0.88 . The total attitude score ranged from 10 to 50, with a mean \pm SD of 32.70 ± 9.01 . The mean attitude score on a 5-point Likert scale was 3.27 ± 0.90 .

Table 3 shows a strong positive correlation between knowledge and attitude scores among participants. ($r = 0.777$, $P < 0.001$). This suggests that students with greater knowledge scores tend to exhibit a more favorable attitude toward oral health and psychiatric drugs.

Table 4 shows the association of knowledge and attitude scores with demographic parameters of the participating students. It was shown that males (mean = 29.23 ± 6.86)

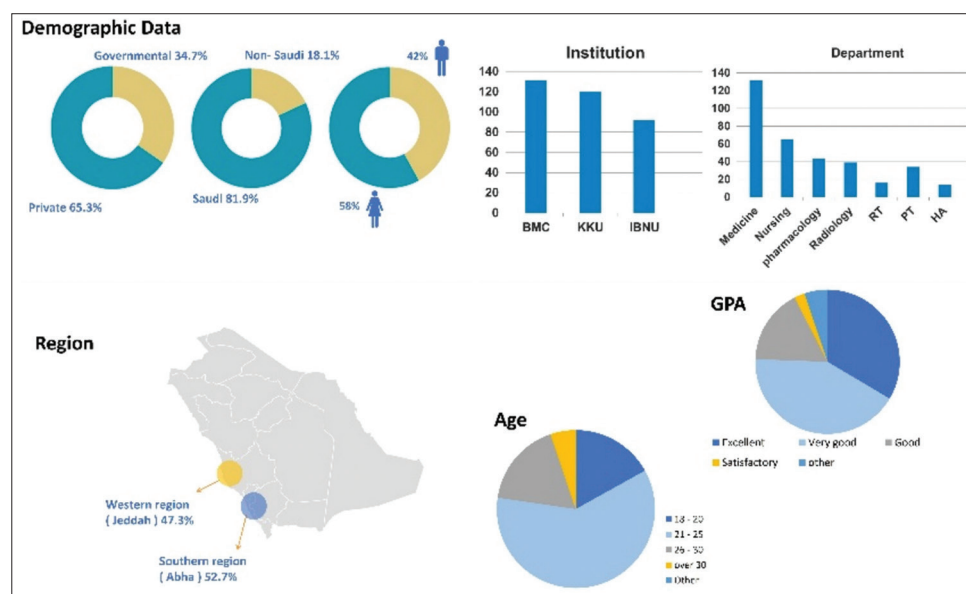


Figure 1: Demographic data of the participating health specialties' students ($n = 343$)

Table 1: Distribution of the participants studied according to knowledge items (n=343)

Q	Knowledge	Strongly disagree		Disagree		Not sure		Agree		Strongly agree	
		No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage
1	I am familiar with the term “psychotropic medicines” and their general uses.	39	11.4	50	14.6	50	14.6	132	38.5	72	21.0
2	I am aware that some psychotropic medicines can have oral health side effects.	31	9.0	73	21.3	119	34.7	83	24.2	37	10.8
3	I can identify common psychotropic medicines that may impact oral health	40	11.7	64	18.7	95	27.7	109	31.8	35	10.2
4	I understand the potential oral health implications of long-term use of psychotropic medicines.	43	12.5	56	16.3	105	30.6	108	31.5	31	9.0
5	I am knowledgeable about the interactions between psychotropic medicines and common dental treatments.	49	14.3	68	19.8	93	27.1	100	29.2	33	9.6
6	I am confident in my ability to communicate with patients about their psychotropic medicine use and its effects on oral health.	40	11.7	61	17.8	106	30.9	101	29.4	35	10.2
7	I am aware of the potential impact of psychotropic medicines on gum health and periodontal conditions.	33	9.6	64	18.7	98	28.6	101	29.4	47	13.7
8	I am knowledgeable about the connection between certain psychotropic medicines and the increased risk of oral infections.	39	11.4	56	16.3	110	32.1	90	26.2	48	14.0
9	I understand the importance of considering a patient's psychotropic medicine regimen when recommending oral hygiene practices.	45	13.1	66	19.2	97	28.3	83	24.2	52	15.2

scored higher in knowledge than female participants (mean = 27.45 ± 8.53 , $P = 0.033$), also, males (mean = 33.84 ± 7.27) scored higher attitude than female participants (mean = 31.87 ± 10.03 , $P = 0.036$).

Although there was no statistically significant difference between departments ($P = 0.065$), substantial variance was found. Nursing (29.32 ± 7.41), physical therapy (29.32 ± 8.79), and medicine (28.70 ± 7.99) students had the highest knowledge scores, while health administration (24.07 ± 6.12) and respiratory therapy (25.13 ± 5.85) had the lowest. Significant differences in attitude scores were found among health specialties ($P < 0.001$), with radiology students having the highest scores (34.82 ± 9.02), followed by nursing (34.29 ± 7.89), medicine (33.65 ± 8.50), and pharmacology (29.16 ± 10.33).

Discussion

The goal of this study is to analyze the attitude and knowledge of health specialist university students

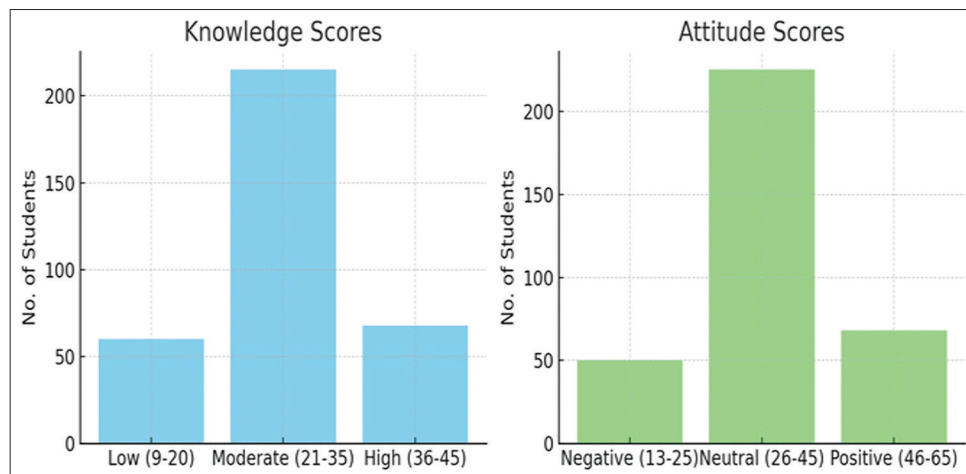
regarding how psychiatric drugs can affect oral health. The results were moderate levels of knowledge for all but significant differences by demographic characteristics such as gender, type of organization, and prior knowledge of psychiatric medications. Second, it was established that people who had better knowledge had better attitudes about oral health care ($r = 0.777$, $P < 0.001$).

Knowledge of psychotropic medications and oral health

Participants had moderate knowledge (mean knowledge score of 28.20 ± 7.91 , range 9–45). The findings align with previous studies that reported limited exposure to oral health education relevant to psychotropic medications for healthcare students.^[10] A gap was observed between students who had received prior education on this topic and those who had not, reinforcing the need for integrated educational programs that emphasize the oral side effects of psychiatric drugs.^[2]

Table 2: Distribution of the participants studied according to attitude items (n=343)

Q	Attitude	Strongly Disagree		Disagree		Not sure		Agree		Strongly agree	
		No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage
1	I believe dental students should receive training on recognizing the oral effects of psychological medicines.	30	8.7	44	12.8	109	31.8	113	32.9	47	13.7
2	Dental professionals should work closely with mental health professionals to provide comprehensive patient care	26	7.6	61	17.8	97	28.3	122	35.6	37	10.8
3	I am confident in my ability to identify oral symptoms related to psychological medicine use.	35	10.2	61	17.8	93	27.1	126	36.7	28	8.2
4	Dental care plans should be tailored considering a patient's psychological medication regimen.	35	10.2	45	13.1	100	29.2	127	37.0	36	10.5
5	Patients often overlook the oral health effects of psychological medicines.	35	10.2	50	14.6	96	28.0	113	32.9	49	14.3
6	I am aware of specific psychological medicines that can lead to an increased risk of dental caries.	39	11.4	55	16.0	106	30.9	94	27.4	49	14.3
7	I believe addressing oral health issues can positively impact a patient's overall mental well-being. Dental students should ask patients about their psychological medicine use during intake assessments.	35	10.2	36	10.5	104	30.3	118	34.4	50	14.6
8	I am comfortable discussing the oral health implications of psychological medicines with patients.	30	8.7	59	17.2	99	28.9	103	30.0	52	15.2
9	There is a need for more research on the oral health effects of psychological medicines	27	7.9	37	10.8	106	30.9	120	35.0	53	15.5
10	I believe collaboration between dental and mental health services can improve patient outcomes.	38	11.1	36	10.5	95	27.7	116	33.8	58	16.9


Figure 2: Distribution of overall knowledge and attitude scores among participants

Knowledge scores were significantly higher among students from governmental institutions (mean \pm SD: 30.79 ± 7.33) than those from private institutions (26.82 ± 7.88 , $P < 0.001$). Although the study did not

directly evaluate curriculum content, these findings may suggest potential influences such as differences in educational programs, access to clinical opportunities, or availability of experienced staff. Further research is needed to confirm these associations.^[15,16]

Table 3: Overall knowledge and attitude scores, with correlation (n=343)

Knowledge score	
Total score (9–45)	
Min.–Max.	10.0–45.0
Mean \pm SD.	28.20 \pm 7.91
Average score (1 – 5) (Mean \pm SD.)	3.13 \pm 0.88
Attitude score	
Total score (10–50)	
Min.–Max.	10.0–50.0
Mean \pm SD.	32.70 \pm 9.01
Average score (1–5) (mean \pm SD.)	3.27 \pm 0.90
Correlation between knowledge versus attitude	
Knowledge versus attitude	
r	P
0.777*	<0.001*

*Pearson coefficient. *Statistically significant at $P \leq 0.05$

Regarding universities, students from King Khalid University scored higher (30.46 ± 7.77) compared to Batterjee Medical College (28.11 ± 8.34) and Ibn Sina College (25.38 ± 6.47 , $P < 0.001$). While this may reflect institutional factors, the study did not directly evaluate curricular differences, and therefore, the observation should be interpreted as a suggestion rather than a definitive conclusion.^[16,17]

Knowledge scores were also significantly associated with age ($P < 0.001$) and academic performance ($P = 0.006$). Older students and those with higher GPAs may demonstrate greater awareness as a result of

Table 4: Relation between total score of knowledge and attitude with different demographic parameters among total participants

Demographic parameters	No.	Knowledge score	Test of significance	P	Attitude score	Test of significance	P
		Mean \pm SD			Mean \pm SD		
Nationality							
Saudi	281	28.62 \pm 8.02	t=2.091*	0.037*	33.11 \pm 9.12	t=1.818	0.070
Other	62	26.31 \pm 7.14			30.82 \pm 8.31		
Gender							
Male	144	29.23 \pm 6.86	t=2.136*	0.033*	33.84 \pm 7.27	t=2.105*	0.036*
Female	199	27.45 \pm 8.53			31.87 \pm 10.03		
Institution							
Private	224	26.82 \pm 7.88	t=4.549*	<0.001*	30.92 \pm 9.10	t=5.193*	<0.001*
Governmental	119	30.79 \pm 7.33			36.04 \pm 7.85		
University							
BMC	131	28.11 \pm 8.34	F=11.402*	<0.001*	31.63 \pm 9.37	F=13.949*	<0.001*
KKU	120	30.46 \pm 7.77			35.96 \pm 8.46		
Ibnsina college	92	25.38 \pm 6.47			29.98 \pm 7.94		
Department							
Medicine	132	28.70 \pm 7.99	F=2.002	0.065	33.65 \pm 8.50	F=4.786*	<0.001*
Nursing	65	29.32 \pm 7.41			34.29 \pm 7.89		
Pharmacology	43	26.14 \pm 8.13			29.16 \pm 10.33		
Radiology	39	28.67 \pm 8.03			34.82 \pm 9.02		
Respiratory	16	25.13 \pm 5.85			25.44 \pm 7.63		
Physical	34	29.32 \pm 8.79			33.41 \pm 9.12		
Therapy							
Health Admin	14	24.07 \pm 6.12			27.86 \pm 8.57		
Age							
18–20	58	24.91 \pm 8.77	F=7.514*	<0.001*	29.91 \pm 10.35	F=3.796*	0.011*
21–25	207	28.60 \pm 6.92			32.81 \pm 8.15		
26–30	60	31.0 \pm 9.28			35.37 \pm 10.06		
Above 30	18	24.83 \pm 6.53			31.56 \pm 8.09		
GPA							
Excellent	115	26.55 \pm 8.95	F=3.665*	0.006*	30.78 \pm 10.08	F=2.211	0.067
Very good	144	29.56 \pm 7.57			33.76 \pm 8.75		
Good	58	29.41 \pm 6.93			34.02 \pm 7.94		
Satisfactory	8	24.88 \pm 5.77			33.75 \pm 9.92		
Other	18	25.44 \pm 3.57			31.78 \pm 3.84		
Have you received formal or informal education about the effects of psychotropic medicines on oral health?							
Yes	303	28.47 \pm 8.04	t=2.076*	0.042*	32.86 \pm 9.14	t=0.933	0.352
No	40	26.13 \pm 6.52			31.45 \pm 8.01		

SD: Standard deviation, t: Student t-test, F: One-way analysis of variance test, P: value for comparing between the different categories, *Statistically significant at $P \leq 0.05$

more exposure to academia or clinical training.^[3] These findings align with those of who showed that knowledge of the adverse oral effects of psychotropic drugs could improve with academic progression.^[10]

Attitudes toward psychotropic medications and oral health

The mean attitude score (scale 10–50) was 32.70 ± 9.01 , implying that students who received information about psychiatric medications showed a more favorable attitude about the treatment of affected oral health. The statements about the importance of integrating education on psychotropic medications in dental education and the need for interprofessional collaboration showed the highest level of agreement. These findings align with previous studies illustrating multidisciplinary care as a potential way to improve patient outcomes.^[17–22]

Male students showed slightly more positive attitudes than female students, with the gender differences in attitude scores reaching statistical significance ($P = 0.036$). The reasons for this difference are not fully understood; previous research has suggested that confidence levels when discussing oral health issues could play a role.^[14,15,23]

Similar to the results in knowledge scores, attitudes were also substantially correlated with university affiliation and institution type ($P < 0.001$). This implies that students attending government schools might be exposed to more multidisciplinary instruction, which would encourage a more proactive attitude to collaborating on mental and oral health.^[3,19]

Interestingly, GPA and prior knowledge were not statistically significant predictors of attitude scores ($P = 0.067$ and $P = 0.352$, respectively). This indicates that while students with higher academic performance demonstrated greater knowledge, this did not necessarily translate into more positive attitudes toward managing oral health in psychiatric patients. These findings highlight the need for targeted educational interventions that not only improve knowledge but also encourage a more patient-centered approach among future healthcare providers.^[23,24]

Correlation between knowledge and attitude

Scores of knowledge and attitude were significantly positively associated ($r = 0.777$, $P < 0.001$), suggesting that the more knowledge students had of systems of

psychiatric drugs and oral health, the more positive attitudes they had. This finding is consistent with previous research.^[3,10] That has stressed the importance of enhanced knowledge about the effect of psychotropic medications to improve patient care practices and interdisciplinary collaboration.

Barriers to oral health in psychiatric patients

The major highlight identified by the literature is the existence of poor oral health among individuals with severe mental illness (SMI), often attributed to a lack of motivation, financial limitations, and systemic challenges in accessing dental.^[15] Our findings from this study underscore the need for educating healthcare students related to these barriers and to foster interdisciplinary care by facilitating a patient-centric model whereby dental professionals collaborate alongside mental health professionals.^[2]

Implications for clinical practice and education

The results of this study underscore the need for integrating oral health education into medical, nursing, and pharmacy curricula, especially regarding how psychotropic medications affect oral health. Given that knowledge among students was only moderate, there is a potential risk that patient counseling and clinical decisions regarding oral health in psychiatric patients may be suboptimal. However, due to the fact that only 88.3% of the participants had prior education about psychotropic medications, this calls for the need for such interdisciplinary training programs to improve future health professionals for these problems. However, institutions should develop collaborative programs between dental and medical faculties to encourage team-based learning and interdisciplinary care models. Research suggests that interprofessional education can significantly improve attitudes and knowledge retention in healthcare students,^[2,10] which may ultimately lead to better patient outcomes.

Strengths and limitations

The research delivers significant findings about healthcare students' understanding and behavioral tendencies regarding psychotropic medications' impact on oral health. The study's reliable findings are supported by the large number of participants ($n = 343$) who come from different health specialties and different universities.

Some limitations need consideration in this analysis:

- Responses from study participants could show bias because they may provide information that is either overestimated or underestimated about their understanding and opinions.
- Cross-sectional research design restricts investigators from determining cause-and-effect relationships between investigated variables.
- The differences between universities in curriculum styles may have affected participant responses which creates challenges to apply all research findings throughout academic institutions.
- Future research should utilize longitudinal methodologies to assess how student knowledge and attitudes evolve over time. This approach will help evaluate the impact of targeted educational strategies on learning outcomes.

Future studies

Longitudinal studies are needed to track the development of students' knowledge and attitudes over time. In addition, intervention-based research is recommended to evaluate the effectiveness of educational programs in enhancing knowledge and promoting interprofessional collaboration in providing oral health care for psychiatric patients. Such studies will help determine the impact of focused education on both learning outcomes and future clinical practice.

Conclusion

The research demonstrates that health specialty students possess average levels of knowledge and behavioral responses regarding the effects of psychotropic medications on oral health. The study revealed substantial differences among the studied groups based on gender, academic background, and educational institutional affiliation. The strong connection between knowledge and attitude scores indicates that educational improvements in this subject will enhance patient overall health care.

Future educational programs should implement interprofessional training, clinical practice experience, and interdisciplinary teamwork to address existing knowledge deficits. Improved integration of healthcare education will better prepare future professionals to effectively manage the oral healthcare needs of patients receiving psychotropic treatments.

Authors Contributions

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Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Conflicts of Interest

The authors declare no conflict of interest.

References

1. Lawrence D, Hancock KJ, Kisely S. The gap in life expectancy from preventable physical illness in psychiatric patients in Western Australia: Retrospective analysis of population based registers. *BMJ* 2013;346:f2539.
2. Kisely S, Sawyer E, Siskind D, Lalloo R. The oral health of people with anxiety and depressive disorders - a systematic review and meta-analysis. *J Affect Disord* 2016;200:119-32.
3. Kisely S. No mental health without oral health. *Can J Psychiatry* 2016;61:277-82.
4. Altwaijri Y, Kazdin AE, Al-Subaie A, Al-Habeeb A, Hyder S, Bilal L, *et al.* Lifetime prevalence and treatment of mental disorders in Saudi youth and adolescents. *Sci Rep* 2023;13:6186.
5. De Mooij LD, Kikkert M, Theunissen J, Beekman AT, De Haan L, Duurkoop PW, *et al.* Dying too soon: Excess mortality in severe mental illness. *Front Psychiatry* 2019;10:855.
6. Demyati H. Psychological stress and periodontal disease in Saudi Arabia: A systematic review. *Saudi Dent J* 2020;32:157-63.
7. Corridore D, Saccucci M, Zumbo G, Fontana E, Lamazza L, Stamegna C, *et al.* Impact of stress on periodontal health: Literature revision. *Healthcare (Basel)* 2023;11:1516.
8. Velasco-Ortega E, Monsalve-Guil L, Ortiz-Garcia I, Jimenez-Guerra A, Lopez-Lopez J, Segura-Egea JJ. Dental caries status of patients with schizophrenia in Seville, Spain: A case-control study. *BMC Res Notes* 2017;10:50.
9. Skallevoid HE, Rokaya N, Wongsirichat N, Rokaya D. Importance of oral health in mental health disorders: An updated review [published correction appears in *J Oral Biol Craniofac Res* 2024;14:353-4.
10. Macnamara A, Mishu MP, Faisal MR, Islam M, Peckham E. Improving oral health in people with severe mental illness (SMI): A systematic review. *PLoS One* 2021;16:e0260766.
11. Martínez-García M, Hernández-Lemus E. Periodontal inflammation and systemic diseases: An overview. *Front Physiol* 2021;12:709438.
12. Goh V, Hassan FW, Baharin B, Rosli TI. Impact of psychological states on periodontitis severity and oral health-related quality of life. *J Oral Sci* 2022;64:1-5.
13. Hathiwalwa S, Acharya S, Patil S. Personality and psychological factors: Effects on dental beliefs. *J Indian Soc Pedod Prev Dent*

- 2015;33:88-92.
14. Xiang B, Wong HM, Perfecto AP, McGrath CP. The association of socio-economic status, dental anxiety, and behavioral and clinical variables with adolescents' oral health-related quality of life. *Qual Life Res* 2020;29:2455-64.
15. Bjørkvik J, Henriquez Quintero DP, Vika ME, Nielsen GH, Virtanen JI. Barriers and facilitators for dental care among patients with severe or long-term mental illness. *Scand J Caring Sci* 2022;36:27-35.
16. Quaranta A, D'Isidoro O, Piattelli A, Hui WL, Perrotti V. Illegal drugs and periodontal conditions. *Periodontol 2000* 2022;90:62-87.
17. Gaffar B, Farooqi FA, Nazir MA, Bakhurji E, Al-Khalifa KS, Alhareky M, *et al.* Oral health-related interdisciplinary practices among healthcare professionals in Saudi Arabia: Does integrated care exist? *BMC Oral Health* 2022;22:75.
18. Sheiham A. Oral health, general health and quality of life. *Bull World Health Organ* 2005;83:644.
19. McFarland, Megan L, Inglehart MR. Depression, self-efficacy, and oral health: An exploration. *Ohdmbosc* 2010;9:214-22.
20. Peres MA, Macpherson LM, Weyant RJ, Daly B, Venturelli R, Mathur MR, *et al.* Oral diseases: A global public health challenge [published correction appears in *Lancet* 2019;394:249-60.
21. Coulthard P. Dentistry and coronavirus (COVID-19) - moral decision-making. *Br Dent J* 2020;228:503-5.
22. Ball J, Darby I. Mental health and periodontal and peri-implant diseases. *Periodontol 2000* 2022;90:106-24.
23. Dumitrescu AL. Depression and inflammatory periodontal disease considerations - an interdisciplinary approach. *Front Psychol* 2016;7:347.
24. Arigbede AO, Babatope BO, Bamidele MK. Periodontitis and systemic diseases: A literature review. *J Indian Soc Periodontol* 2012;16:487-91.