



# The Open Dentistry Journal

Content list available at: <https://opendentistryjournal.com>



## RESEARCH ARTICLE

### Exploring Dental Students' Perceptions of Mental Illness to Address Unmet Needs: A Preliminary Study

Michelle Zechner<sup>1,\*</sup>, Vaishali Singhal<sup>1,2</sup>, Ann Murphy<sup>1</sup> and Sean Karyczak<sup>1</sup>

<sup>1</sup>Department of Psychiatric Rehabilitation and Counseling Professions, NJ 08854, USA

<sup>2</sup>Department of Psychiatric Dentistry and Community Health, NJ 07101, USA

#### Abstract:

##### Background:

There is little information about dental students' perceptions about providing care to people with serious mental illnesses (SMI), despite the significant oral health challenges of this population. *Objective:* This brief report aims to explore gaps in dental students' knowledge and skills for providing oral health care to people with SMI, along with their attitudes about working with this underserved population.

##### Methods:

Post-graduate dental students in the United States at a large northeastern university were asked to provide feedback and responses to 5 open-ended questions prior to an educational module about working with people with SMI, and 22 anonymous responses were received. Qualitative content analysis was used to code responses using independent coding and consensus meetings.

##### Results:

Dental students expressed concerns about working with this population and felt unprepared to provide services to them. Seven themes were identified and coded into three primary categories: Knowledge, Skills and Attitudes. Codes representing dental student knowledge gaps included mental health literacy and professional role clarification. Skill deficits were coded as an adaptation of dental care practices, communication skills, crisis management, and management of care. Attitudes were coded as beliefs about people with SMI.

##### Conclusion:

Additional attention to mental illness in dental education could assist future professionals in their skills and knowledge to address the extensive unmet oral health needs of people with SMI.

**Keywords:** Underserved population, Oral health education, Serious mental illness, Post-graduate education, Qualitative content analysis, Oral health.

#### Article History

Received: July 06, 2021

Revised: September 20, 2021

Accepted: November 18, 2021

## 1. INTRODUCTION

In the United States, approximately 13 percent of the population has a disability [1]. A significant portion of this population also has special healthcare needs (SHCN) based on chronic disabilities or chronic illness. However, many healthcare providers do not receive training in treating patients with special needs [2]. Dental professionals lack the skills to treat patients with special needs due to insufficient training at the predoctoral educational level [3, 4]. The population with

Serious Mental Illnesses (SMI) is a neglected special needs population in clinical services and research for both general health and oral health. This population has a life span 20% shorter than that of the general population and experiences physical conditions indicative of premature physical aging, including loss of teeth and poor physical functioning [3].

Oral health is an important indicator of general health. The connection between oral health and systemic health is well documented. Research demonstrates that periodontal disease (PDD) is associated with a higher risk of coronary artery disease (CAD), though it is unclear whether the link is causal or if it is due to a common fundamental factor such as an inflammatory process [5]. Similarly, there is likely a link

\* Address correspondence to this author at the Department of Psychiatric Rehabilitation and Counseling Professions, NJ 08854, USA; Tel: (908)889-3154; Fax: (909)889-2701; E-mail: [zechnemr@shp.rutgers.edu](mailto:zechnemr@shp.rutgers.edu)

between diabetes and oral health [6]. Despite the connection between oral health and systemic health, the population with SMI experiences a significantly higher rate of general and oral health problems as compared to the general population [7]. Increased consumption of alcohol, illegal substances, tobacco products and sugary carbonated beverages is believed to be a contributing factor to poor general and oral health in this population [8]. One important barrier may be the low relative importance given to oral health of the population with SMI [9]. Other factors further contribute to unmet oral health needs, including lack of finances and access to care; effects of psychotropic medications such as xerostomia and tardive dyskinesias; increased anxiety regarding care; decreased cognitive skills and lack of motivation for self-care; and fear of stigma and discrimination [9 - 11].

Healthcare professionals treating people with SMI without any formal education or training in this area contribute to negative attitudes about providing health care services [11]. Negative attitudes towards people with SMI and lack of knowledge and skills in this area lead to a diminished ability by the health professional to provide appropriate care to this population. This is further exacerbated by gaps in professional education, including continuing education post-graduation [12]. Additionally, communication between the healthcare provider and the patient is important for quality care [13]. Disabilities, including SMI, have a negative impact on communication between the provider and patient [13].

In 2004, the U.S. Commission on Dental Accreditation (CODA) updated standards to expand predoctoral education regarding care provided to special needs populations. This population includes those with “developmental disabilities, cognitive impairment, complex medical problems, significant physical limitations and the vulnerable elderly” [14]. Despite the significant need for oral health care and the lack of access, there is little literature regarding dental professional perspectives or dental curriculum teaching about people with SMI [3]. One Australian study examined pre-doctoral dental students’ knowledge, attitudes and social distancing perceptions about people with SMI. The researchers provided a 90-minute inter-professional educational activity and measured attitudes before and after through focus groups and surveys [3]. Results suggested that the students had limited perceptions about people with SMI, but had limited understanding of the intersection of dentistry and mental health prior to the learning activity. Lack of familiarity with patients diagnosed with SMI results in stereotyping of this population and hesitation in the provision of care [15]. Empathy towards persons with disabilities results in better patient outcomes, including satisfaction with the treatment provided [13]. One study conducted in Austria found that the attitudes of 4<sup>th</sup>-year dental students towards patients with special healthcare needs to be improved after a series of seminars [15]. Similarly, a study conducted in three Asian countries found that the confidence of nurses was linked with the level of involvement of care of patients with SMI [16]. Studies regarding attitudes of dental students and dental hygiene students conducted in the United States are minimal.

The first step to improve dental education, identify standardized competencies needed for working with people with SMI, and ultimately improve the quality of oral health care is to explore specific knowledge and skill gaps

experienced by dental students related to treating people with SMI. Research demonstrates that healthcare professionals gain confidence in treating patients with disabilities, including SMI, through educational experiences [13]. Other studies have demonstrated the need for educational programs related to patients with special healthcare needs. Our study explored 3rd year dental students’ perspectives about working with people with SMI, and identified recommendations for enhancement of the existing dental curriculum.

## 2. METHODS

### 2.1. Participants

Information was collected from students enrolled in a community dentistry course at a large northeastern university prior to a planned lecture on SMI to tailor the information to be provided. Students in the class were asked to provide feedback *via* an online platform prior to the synchronous web-based class. No identity-related information was collected. Response to the survey was voluntary, and 22 students out of 125 opted to complete it. As the primary purpose of the project was improvement and evaluation of course quality, the project was determined to be IRB exempt.

### 2.2. Survey

A survey based on 5 questions was designed based upon previous author's study on health professions education about individuals with SMI [17]. The questions were:

- (1) What have you previously heard about SMI?
- (2) What questions do you have about SMI?
- (3) What questions do you have about providing care to people with SMI?
- (4) What information is important for dental students to learn about SMI?
- (5) What additional information would you like to have?

### 2.3. Methodology

Qualitative content analysis was used to identify recurring patterns and themes in the data (Table 1) [18, 19].

**Table 1. Qualitative content analysis process.**

<b>Step 1:</b> Generate initial codes by segmenting data and tagging it with a conceptual label [18]
<b>Step 2:</b> Comparisons were made among the initial codes to cluster them for the identification of patterns and a smaller number of categories
<b>Step 3:</b> Connections among the categories were identified as themes.
Strategies to ensure the reliability and trustworthiness of the data were used [19]. Researchers conducted team coding and discussed disagreements. The researchers also performed debriefings with content experts. Due to overlapping responses across questions, the questions were analyzed collectively to identify overarching themes.

## 3. RESULTS

The data collected were synthesized with respect to the five questions asked from the dental students. Seven themes emerged, with these themes falling into the three primary categories of knowledge, skills, and attitudes (Table 2).

**Table 2. Qualitative analysis of students’ responses to online survey about providing care to people with serious mental illnesses.**

Theme	Codes	Quotes
<b>Knowledge</b>		
Mental Health Literacy	Assessment of Mental Illness, Onset of Illness, Course of Illness, Medications, Substance Use, Mental Health Treatment, Prevalence of Mental Illness, Knowledge of Mental Illness, Awareness	<ul style="list-style-type: none"> <li>▪ What are the symptoms of common mental illnesses that we can detect early on to help refer our patients?</li> <li>▪ I should be made more aware of the types of medications that a patient could be on that might affect treatment.</li> <li>▪ [I would like] a list of the primary disorders, their manifestations, and efficacious treatment modifications.</li> </ul>
Professional Role Clarification	Scope of Practice, Responsibility to Address MH Concerns, Job Role	<ul style="list-style-type: none"> <li>▪ How far can a dental professional go in... talking to a patient that may be dealing with a serious personal issue? Can we give advice?</li> <li>▪ [It is important for dental students to know about mental illness] to correctly diagnose and treat patients having a mental illness.</li> </ul>
<b>Skills</b>		
Adaptation of Dental Care Practices	Patient Care Practices	<ul style="list-style-type: none"> <li>▪ Should we treat them differently?</li> <li>▪ What are the most important things to do differently when treating a patient with mental illness?</li> <li>▪ It is crucial that dental students can at least recognize common mental illnesses and know how to change their approach when interacting... and making treatment plans for them. People with mental illness may not be able to follow ordinary treatment plans or instructions as well.</li> </ul>
Communication Skills	Medical Interviewing, Communication Skills, Motivation and Engagement, Empathy	<ul style="list-style-type: none"> <li>▪ How [do I] get more detail about their current mental status without making them feel uncomfortable?</li> <li>▪ Should I speak to [people with mental illness] differently, or should I be more careful about my word choice?</li> <li>▪ How can I motivate someone with clinical depression to care about oral hygiene?</li> </ul>
Crisis Management	Crisis Management, Violence, Suicide, Behavior Management	<ul style="list-style-type: none"> <li>▪ How do you manage their symptoms if they happen to have an episode in your dental chair?</li> <li>▪ What do we do if we think a patient is suicidal?</li> </ul>
Management of Care	Holistic Care, Informed Consent, Referral for MH Treatment Follow-Up, Quality of Care	<ul style="list-style-type: none"> <li>▪ How are you sure that you received proper consent?</li> <li>▪ What is the best course of action if you suspect that a patient has a mental illness which has not been diagnosed?</li> <li>▪ [It is important for dental students to know about mental illness] so we can provide optimal care to our patients who may suffer from it.</li> </ul>
<b>Attitudes</b>		
Beliefs About People with Mental Illnesses	Stigma, Dental Treatment Adherence	<ul style="list-style-type: none"> <li>▪ Many dental articles say that dentists [should] avoid patients with mental illness because they could face a problem with esthetic treatments.</li> <li>▪ What are the chances [of] violent behavior from mental illness patients?</li> <li>▪ What are the best ways we can protect ourselves when treating such a patient?</li> </ul>

Students identified specific knowledge areas about which they wanted to know more. Many responses focused on improved mental health literacy and their desire to have a better understanding of mental illnesses, their prevalence and common symptoms, psychotropic medications, and common treatment modalities. They also wanted clarification regarding the scope of their professional role as it intersects with patients’ mental health needs as well as their responsibilities as dental professionals to address mental health concerns and provide patients with proper mental health care services.

Students reported questions related to the adaptation and application of their skills. They were curious if and how they should modify their dental care practices when working with a patient with SMI. The use of communication skills, specifically, the potential need to change the way they speak to their patients, collect medical and mental health information, and motivate home care, was extended. Students also expressed

concerns related to crisis and symptom management with a patient when in an office. They also queried approaches to care management, including concerns around informed consent, undiagnosed mental illness, and overall quality of care.

Through the questions and comments from the students, evidence was collected regarding their attitudes that reflected inaccurate perceptions of people with SMI, primarily that they are dangerous and do not care for their teeth or adhere to treatment plans.

**4. DISCUSSION**

Dental students expressed many questions and concerns that suggested they felt unprepared to provide care to people with SMI, a group with significant unmet oral health care needs. The unique oral health issues of this vulnerable population require specific knowledge, skills and attitudes for appropriate treatment. This evaluation identified gaps in

knowledge about mental illness etiology, treatment, and patient management. There were also questions about the provision of dental care and oral health management among this population. Dental students expressed a commitment to provide care to people with SMI. However, their responses suggest they hold some negative stereotypes (e.g. fear) that can interfere with optimal care.

One interesting area that stood out was dental students' confusion about their role in providing care for people with SMI and specifically, their responsibilities regarding treating mental health symptoms or identifying mental illness and referring for additional care. Similar to the findings of Holzinger, Lettner and Franz [15], dental students may benefit from training to clarify their role in the treatment of people with SMI; specifically directing issues related to psychiatric symptoms to mental health providers and making referrals when the patient has no mental health provider.

There is limited previous work to compare these findings with. Similar to Patterson and Ford [3], the current study noted a general willingness to treat the population. Additionally, some of the concerns that were identified represented the stereotypes reported in previous assessments of dental students [20]. However, role of identity was an area that was uniquely identified as a knowledge gap in this study. This may represent the differences in health care systems between the United States and those shown in the previous reports (e.g. Australia and India). Interestingly, addressing the unique oral health needs of patients with SMI, such as management of xerostomia or treatment of patients experiencing medication induced movement disorders, was not high.

Results from this study should be interpreted cautiously as the sample size was modest and from a single course at a university, limiting its generalizability. However, it is encouraging that multiple students shared similar notions and gaps in understanding, suggesting that the themes may be relevant across other programs. Another limitation was the interpretation of the qualitative data, which is more subjective than quantitative data analysis, however, all efforts were made to follow best strategies to reduce bias, including separate coding of co-authors and consensus discussions. Additionally, qualitative research does not measure the intensity of beliefs, which leaves questions about the amount of coursework and experience needed to overcome negative beliefs. The limited response rate was due, in part, to time constraints in survey and course offering, which left no time for additional follow-up; however, future efforts to make the activities mandatory would increase participation. Finally, the survey was researcher-developed, but was based upon similar previous studies and health profession education literature.

Future research is recommended in this important area to learn more about oral health student attitudes about providing care to people with SMI. Other dental schools should consider asking students questions about people with SMI prior to coursework. Attitudinal surveys and reflective activities could be incorporated into existing assignments to learn more about the knowledge needed and strategies to increase comfort in working with people with SMI. Scheduling administration of such surveys should allow additional time to encourage survey

response, and when in the semester students are most likely to participate should be identified. Lastly, future work should identify best practices to expose pre-doctoral students to people with SMI throughout their educational experience.

## CONCLUSION

Dental students have gaps in their knowledge and skills for the provision of care to people with SMI, which likely further exacerbates access to quality oral health care. In order to address the unmet dental needs of this population and address their significant oral health difficulties, additional education is needed.

## ETHICAL STATEMENT

As the primary purpose of the project was improvement and evaluation of course quality, the project was determined to be IRB exempt.

## CONSENT FOR PUBLICATION

Not applicable.

## AVAILABILITY OF DATA AND MATERIALS

The data supporting findings of this study is available from the corresponding author [M.Z], upon reasonable request.

## FUNDING

None.

## CONFLICT OF INTEREST

The authors declare no conflict of interest, financial or otherwise.

## ACKNOWLEDGEMENTS

Declared none.

## REFERENCES

- [1] Sacks A. Special education: A reference book for policy and curriculum development. Amenia, NY: Grey House Publishing 2020.
- [2] Jain S. Care of patients with disabilities: An important and often ignored aspect of family medicine teaching. *Fam Med* 2006; 38(1): 13-5. [PMID: 16378252]
- [3] Patterson S, Ford P. Dentistry students' views about mental illness and impact of a targeted seminar on knowledge and attitudes: A mixed-method study. *J Ment Health Train Educ Pract* 2014; 9: 190-202. [http://dx.doi.org/10.1108/JMHTEP-05-2014-0013]
- [4] Wolff AJ, Waldman HB, Milano M, Perlman SP. Dental students' experiences with and attitudes toward people with mental retardation. *J Am Dent Assoc* 2004; 135(3): 353-7. [http://dx.doi.org/10.14219/jada.archive.2004.0187] [PMID: 15058626]
- [5] Mathews MJ, Mathews EH, Mathews GE. Oral health and coronary heart disease. *BMC Oral Health* 2016; 16(1): 122. [http://dx.doi.org/10.1186/s12903-016-0316-7] [PMID: 27846870]
- [6] Albert DA, Ward A, Allweiss P, et al. Diabetes and oral disease: Implications for health professionals. *Ann N Y Acad Sci* 2012; 1255: 1-15. [http://dx.doi.org/10.1111/j.1749-6632.2011.06460.x] [PMID: 22409777]
- [7] McKibbin CL, Kitchen-Andren KA, Lee AA, Wykes TL, Bourassa KA. Oral health in adults with serious mental illness: Needs for and perspectives on care. *Community Ment Health J* 2015; 51(2): 222-8. [http://dx.doi.org/10.1007/s10597-014-9758-z] [PMID: 25091719]

- [8] Kisely S, Quek LH, Pais J, Lalloo R, Johnson NW, Lawrence D. Advanced dental disease in people with severe mental illness: Systematic review and meta-analysis. *Br J Psychiatry* 2011; 199(3): 187-93. [http://dx.doi.org/10.1192/bjp.bp.110.081695] [PMID: 21881097]
- [9] Singhal V, Heuer AJ, York J, Gill KJ. The effects of oral health instruction, and the use of a battery-operated toothbrush on oral health of persons with serious mental illness: A quasi-experimental study. *Community Ment Health J* 2021; 57(2): 357-64. [PMID: 32519153]
- [10] Lam PC, John DA, Galfalvy H, Kunzel C, Lewis-Fernández R. Oral health-related quality of life among publicly insured mental health service outpatients with serious mental illness. *Psychiatr Serv* 2019; 70(12): 1101-9. [http://dx.doi.org/10.1176/appi.ps.201900111] [PMID: 31522632]
- [11] Brondani MA, Alan R, Donnelly L. Stigma of addiction and mental illness in healthcare: The case of patients' experiences in dental settings. *PLoS One* 2017; 12(5): e0177388. [http://dx.doi.org/10.1371/journal.pone.0177388] [PMID: 28531176]
- [12] Brunero S, Jeon YH, Foster K. Mental health education programmes for generalist health professionals: an integrative review. *Int J Ment Health Nurs* 2012; 21(5): 428-44. [http://dx.doi.org/10.1111/j.1447-0349.2011.00802.x] [PMID: 22500589]
- [13] Jones DM, Miller SR. Effectiveness of an educational module on dental hygiene students' attitudes towards persons with disabilities. *J Dent Hyg* 2018; 92(4): 27-34. [PMID: 30143547]
- [14] Commission on Dental Accreditation. Accreditation standards for dental education programs. 2019.
- [15] Holzinger A, Lettner S, Franz A. Attitudes of dental students towards patients with special healthcare needs: Can they be improved? *Eur J Dent Educ* 2020; 24(2): 243-51. [http://dx.doi.org/10.1111/eje.12490] [PMID: 31845452]
- [16] Bressington D, Badnapurkar A, Inoue S, *et al*. Physical health care for people with severe mental illness: The attitudes, practices, and training needs of nurses in three asian countries. *Int J Environ Res Public Health* 2018; 15: 343. [http://dx.doi.org/10.3390/ijerph15020343]
- [17] Karyczak S, Murphy AA, Zechner M, Anderson EZ, Zazzarino A. Service learning experiences of doctor of physical therapy students with a severe mental illness population. *J Educ Health Promot* 2020; 9(316): 316. [http://dx.doi.org/10.4103/jehp.jehp\_298\_20] [PMID: 33426120]
- [18] Hsieh HF, Shannon SE. Three approaches to qualitative content analysis. *Qual Health Res* 2005; 15(9): 1277-88. [http://dx.doi.org/10.1177/1049732305276687] [PMID: 16204405]
- [19] Nowell LS, Norris JM, White DE, Moules NJ. Thematic analysis: Striving to meet the trustworthiness criteria. *Int J Qual Methods* 2017; 16: 1-13. [http://dx.doi.org/10.1177/1609406917733847]
- [20] Rasmina V, Hafeeq B, Uvais NA, Sreeraj VS. Attitudes of dental interns towards mental illness. *Int J Med Public Health* 2019; 9(1): 28-30. [http://dx.doi.org/10.5530/ijmedph.2019.1.7]