

Perception, interest, and experience of dental students at a Brazilian public university in the care of people with disabilities: a cross-sectional study



Artigo Original

Percepção, interesse e experiência de estudantes de Odontologia de uma universidade pública brasileira no cuidado de pessoas com deficiência: um estudo transversal

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ABSTRACT

Introduction: Oral care for people with disabilities (PwD) represents a growing challenge for healthcare systems, particularly due to inadequate professional training. **Objective:** This study aimed to assess the perception, interest, and experience of dental students at a Brazilian public university regarding the care of PwD. **Material and Methods:** A cross-sectional study was conducted with dental students from the 5th to 10th semesters (total of 149 eligible students). The study involved the development and expert validation of a questionnaire, followed by its remote application to participants. Descriptive statistics and Fisher's Exact Test were used for data analysis, with a significance level set at 5%. **Results:** A total of 133 students participated (response rate 89.26%); 78.9% were female, and 35.3% reported knowing someone with a disability. The majority (82.7%) had never provided care to a PwD, and 91% had not received any formal education on this topic during their dental training. Nearly all participants (98.5%) expressed the need for a specific discipline addressing this area and stated they would enroll if it were offered. Most students (63.9%) reported high interest in the subject, while 78.2% felt unprepared to care for PwD. A statistically significant association was found between prior personal contact with a PwD and higher interest in the topic ($p=0.001$). **Conclusion:** The findings, drawn from this institution and based on self-reported data, indicate that the dental curriculum offers limited practical exposure and reveal a deficiency in educational content focused on PwD. Students recognize the importance of this knowledge and express a desire to incorporate it into their undergraduate course.

Keywords: People with Disabilities; Perception; Students, Dental.

RESUMO

Introdução: O cuidado bucal de pessoas com deficiência (PcD) representa um desafio crescente para os sistemas de saúde, especialmente devido à insuficiência de formação profissional adequada. **Objetivo:** Este estudo objetivou avaliar a percepção, o interesse e a experiência de estudantes de Odontologia de uma universidade pública brasileira em relação ao cuidado de PcD. **Material e Métodos:** Estudo transversal conduzido com estudantes de Odontologia do 5º ao 10º semestre (total de 149 estudantes elegíveis). Foi desenvolvido e validado por especialistas um questionário eletrônico, aplicado remotamente. Utilizaram-se estatística descritiva e Teste Exato de Fisher, com nível de significância de 5%. **Resultados:** Participaram 133 estudantes (taxa de resposta de 89,26%); 78,9% do sexo feminino e 35,3% relataram conhecer alguém com deficiência. A maioria (82,7%) nunca prestou atendimento a uma PcD e 91% não receberam formação formal sobre o tema. Quase todos os participantes (98,5%) reconheceram a necessidade de uma disciplina específica sobre o tema e afirmaram que se matriculariam nela caso fosse ofertada. A maioria (63,9%) demonstrou alto interesse, enquanto 78,2% se sentiram despreparados. Houve associação estatisticamente significativa entre contato prévio com PcD e maior interesse pelo tema ($p=0,001$). **Conclusão:** Os achados, restritos a esta instituição e baseados em dados autorreferidos, indicam que o currículo odontológico oferece exposição prática limitada e revela deficiência no conteúdo educacional voltado às PcD. Os estudantes reconhecem a importância desse conhecimento e expressam o desejo de incorporá-lo à graduação.

Palavras-chave: Pessoas com Deficiência; Percepção; Estudantes de Odontologia.

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INTRODUCTION

People with disabilities (PwD) constitute a diverse and substantial portion of the global population, with over one billion individuals, approximately 15%, living with some form of disability, according to the World Health Organization.¹ However, they often encounter significant challenges in managing oral health due to communication difficulties, physical limitations, and behavioral barriers. Additionally, many PwD are prescribed medications that may adversely affect their oral health.²

Despite the growing recognition of the need for inclusive health services, access to oral healthcare remains disproportionately limited for this population. Contributing factors include inadequate infrastructure, social stigma, long waiting times, high costs, limited caregiver awareness of oral health, and, most notably, insufficient professional training.²⁻⁵ These barriers reflect broader systemic deficiencies and are frequently reported by parents and caregivers, particularly in cases involving varying degrees of intellectual disability.⁶

Special Care Dentistry (SCD) plays a crucial role in addressing these disparities. Brazil has been a pioneer in this field, becoming the first country to officially recognize Dentistry for individuals with disabilities as a specialty.⁷ Since its inclusion in undergraduate curricula in 2002, SCD has served as a complementary discipline, providing students with both theoretical knowledge and practical skills.⁸

Nevertheless, this specialty remains underemphasized in academic institutions worldwide.⁹ Although some dental schools have taken steps to modernize their programs, many continue to lack structured training necessary to adequately prepare students for treating PwD.¹⁰⁻¹¹ Consequently, many graduates report low confidence in managing patients with disabilities.^{12,13} Overcoming this gap requires educational environments that promote early, multidisciplinary engagement and build students' competence in SCD and promote trained professionals.¹⁰

Greater clinical exposure to patients with disabilities has been shown to improve students' attitudes and increase their willingness to provide care.¹⁴ Such experiences are also positively associated with students' perceived preparedness and intention to treat this population in future practice.¹⁵⁻¹⁸

In this context, the present study hypothesizes that dental students at a Brazilian public university have higher interest and limited clinical experience in caring for PwD. Therefore, this study aims to assess the perception, interest, and experience of undergraduate dental students at this institution regarding the dental care of PwD.

MATERIAL AND METHODS

Ethical considerations

This study was approved by the institutional Research Ethics Committee (Process n° 28571220.6.0000.0030). All participants provided informed consent electronically, in accordance with ethical guidelines.

Study design

A cross-sectional study was conducted with undergraduate dental students at a public university located in the capital of Brazil. In the first phase, a questionnaire was created and validated by expert reviewers to evaluate students' perception, interest, and experience about caring for patients with disabilities. In the second phase, the questionnaire was distributed online to participants.

Inclusion and exclusion criteria

Eligible judges were selected based on their professional involvement with disability care, including university professors, dentists at a public hospital, or recent graduates with relevant experience or interest in this field. Judges occupying administrative positions at academic or public institutions were excluded.

Undergraduate dental students were selected through convenience sampling from 149 eligible students. Inclusion criteria comprised students from the 5th to 10th semesters of both genders, as these levels correspond to the clinical practice phase of the dental curriculum. Exclusion criteria included students who considered themselves unable to complete the electronic questionnaire due to any physical or mental condition at the time of data collection. This criterion was assessed through participants' self-evaluation of their ability to access and complete the survey, as the questionnaire was self-administered electronically.

Questionnaire development and validation

A data collection instrument was developed in the form of a semi-structured questionnaire, based on previously published studies.^{10,19} Initially, the questionnaire consisted of 23 items, including multiple choice, checkbox, and short-answer questions. It was divided into three thematic sections: Experience; Interest; and Perception.

The part Experience assessed the extent of students' experiences with PwD, both within and outside the undergraduate curriculum, comprising six questions. The Interest domain comprised four questions assessing students' interest in learning about the care of PwD, their perceptions of the need for a dedicated undergraduate course, preferences regarding its curricular inclusion, and their willingness to enroll if such a course were

offered.

Finally, the part Perception included four questions aimed at understanding students' perceptions of providing dental care to PwD. An additional eight questions gathered general demographic data such as sex, age, semester, and other background information.

To validate the content of the questionnaire, five judges were invited to participate in the review process. The questionnaire and the informed consent form were sent to them via email. Content validity was assessed using the Content Validity Method,²⁰ which evaluates the relevance of each item in the research instrument. Demographic and professional data of the judges were also collected, including sex, age, education level, years of professional experience, and current workplace.

Each judge independently reviewed the questionnaire and rated the relevance of each item. For quantitative validation, the Content Validity Index (CVI)²¹ was calculated using the following formula:

$$CVI = (\text{number of judges rating the item as relevant} / \text{total number of judges}) \times 100.$$

According to established criteria,²² items with a CVI $\geq 80\%$ were accepted without changes. Items with a CVI between 50% and 79% were revised, while items with a CVI of $<50\%$ were excluded.

Data collection

A pilot test was conducted remotely with 15 students to evaluate the clarity of the questionnaire items and the level of difficulty associated with the response options. These participants were not included in the final study sample.

The questionnaire was then administered remotely to undergraduate students enrolled in the Dentistry program at the University of Brasília. Invitations were distributed via WhatsApp and included a link to the questionnaire hosted on the Google Forms platform.

The questionnaires were administered electronically over a two-month period. Responses were subsequently collected and analyzed according to students' academic semesters.

Statistical analyses

Data were organized in a Microsoft Excel spreadsheet. Descriptive statistics were used to characterize the sample, with results expressed as absolute and relative frequencies. To examine associations between categorical outcomes, such as students' perception, interest, and experience, and the explanatory variables, Fisher's Exact Test was employed. All statistical analyses were conducted using SPSS software, version 26.0 (SPSS Inc., Chicago, IL, USA). A significance level of $p < 0.05$ was adopted.

RESULTS

Instrument Content Validation

The judges ranged in age from 31 to 54 years, with professional experience spanning 5 to 31 years. The group consisted of four women and one man. All were dentists, and three held university teaching positions.

Of the initial 23 questions in the questionnaire, 15 achieved a CVI of 100%, while 5 obtained a CVI of 80%. Three questions had a CVI of 60% and were revised based on the judges' feedback. No item was excluded, as none received a CVI below 50%. However, the judges recommended merging questions 13 and 14, resulting in a final instrument comprising 22 questions.

Application of electronic questionnaires and students' profile

The finalized 22-item questionnaire was electronically distributed to undergraduate dental students. The overall response rate was 89.26% ($n = 133$). Most respondents were female (78.9%). Participants' ages ranged from 19 to 33 years, with a mean age of 22.29 years ($SD=2.47$). The highest participation rate was observed among students in the fifth semester (21.05%), followed by those in the ninth semester (18.04%), sixth and eighth semesters (both 17.30%), and seventh semester (15.79%). Among the respondents, 104 students (78.2%) indicated that Dentistry was their first choice of study, while 29 students (21.8%) initially considered other courses, including Nursing, Medicine, and Engineering.

A summary of the descriptive findings on Experience, Interest and Perception is presented in Table 1.

Table 1: Summary of descriptive findings on Experience, Interest, and Perception ($n = 133$).

Domain	Item	n (%)
Experience	Friend/relative with a disability	47 (35.3)
	Reported difficulty accessing dental care (among participants with a friend/relative with disability)	40 (85.2)
	No previous experience providing care to PwD	110 (82.7)
Interest	Exposure to educational content on PwD care	90 (67.7)
	No dedicated PwD care course in the curriculum	121 (91.0)
	Perceive the absence of a dedicated course as a curricular gap	131 (98.5)
	Would enroll if a dedicated course were offered	131 (98.5)
Perception	Consider knowledge on PwD care important	133 (100)
	Feel unprepared to provide care to a PwD	104 (78.2)
	Report high interest in the topic	85 (63.9)

Legend: PwD - people with disability.

Experience with PwD

In the "Experience" section, 47 students (35.3%) reported having a friend or relative with a disability, and among these, 40 (85.2%) stated that the individual had experienced difficulties in accessing dental care due to their condition. In terms of clinical experience, 110 students (82.7%) reported having no prior experience providing dental care to a PwD during their undergraduate training. Among the 23 students who had such experience, 15 (65.2%) had treated individuals with mental disabilities, 4 (17.4%) had experience with patients with hearing impairments, and 4 (17.4%) with physical impairments.

While 67.7% of students ($n = 90$) reported previous exposure to the topic through lectures, conferences, or independent reading, 91% ($n = 121$) indicated that their undergraduate curriculum did not include a formal, dedicated course on the care of PwD.

Interest about dental care for PwD

A substantial majority ($n = 131$; 98.5%) perceived the absence of a dedicated course on dental care for PwD a gap in the curriculum. Similarly, 98.5% ($n = 131$) of participants expressed interest in the inclusion of a specific course focused on dental care for PwD. Furthermore, 85 students (63.9%) believed this content should be incorporated as a mandatory component within the Dentistry course.

Students' perceptions

All students (100%) agreed that knowledge regarding the care of PwD is important for their professional career. Despite this, the majority ($n = 104$; 78.2%) reported feeling unprepared to provide dental care to PwD if needed. Additionally, more than half of the students ($n = 85$; 63.9%) stated that they were very interested in subjects involving the care of PwD.

The most frequent behavioral reactions expressed by participants when faced with the possibility of providing dental care to PwD included lack of knowledge (82%), insecurity (80.5%), lack of skills (78.2%), anxiety (44.40%), fear (18.8%), and pressure (9.8%) highlighting a sense of uncertainty and unpreparedness regarding this specific demand. When asked about the importance of including content on care for PwD in their academic training, all participants affirmed that access to such education would better prepare them to provide care with greater confidence and empathy.

Association between variables

Table 2 presents the characteristics of the students and their level of interest in PwD. However,

no significant associations were found between interest and variables sex ($p=0.206$), Dentistry as the first course option ($p=0.115$) and semester ($p=0.435$). The association between the students' level of interest in the topic and their previous contact with a friend or family member with any disability was statistically significant ($p=0.001$), as shown in Table 3.

Table 2: Association between level of interest and students' characteristics.

Variables		High Interest n (%)	Medium Interest n (%)	Low Interest n (%)	p-value
Sex	Female	70 (53.6)	34 (25.6)	1 (0.8)	0.206
	Male	15 (11.3)	12 (9.0)	1 (0.8)	
Dentistry as first course option	Yes	63 (47.4)	40 (30.1)	1 (0.8)	0.115
	No	22 (16.5)	6 (4.5)	1 (0.8)	
Semester	5th	17 (12.8)	9 (6.8)	1 (0.8)	0.435
	6th	15 (11.3)	8 (6.0)	0 (0.0)	
	7th	10 (7.5)	11 (8.3)	0 (0.0)	
	8th	18 (13.5)	4 (3.0)	1 (0.8)	
	9th	16 (12.0)	9 (6.8)	0 (0.0)	
	10th	9 (6.8)	5 (3.8)	0 (0.0)	

Legend: *Fisher's Exact Test.

Table 3: Association between level of interest and prior contact with PwD (friend, familiar).

Variables		High n (%)	Medium n (%)	Low n (%)	Total n (%)	p-value
Acquaintance, friend, or family member with a disability	Yes	40 (30.1)	7 (5.3)	0 (0.0)	47 (35.3)	0.001*
	No	45 (33.8)	39 (29.3)	2 (1.5)	86 (64.7)	
TOTAL		85 (63.9)	46 (34.6)	2 (1.5)	133 (100)	

Legend:*Fisher's Exact Test; PwD - people with disability.

However, between the students' current semester and the perception of the lack of dedicated discipline on PwD, no significant association was found ($p=1.000$), as shown in Table 4.

Table 4: Association between semesters and need for a dedicated discipline about PwD.

	Semester	Yes n (%)	No n (%)	Total n (%)	p- value
Semester	5th	26 (96.3)	1 (3.7)	27 (100)	1.000
	6th	23 (100)	0 (0.0)	23 (100)	
	7th	21 (100)	0 (0.0)	21 (100)	
	8th	23 (100)	0 (0.0)	23 (100)	
	9th	24 (96.3)	1 (3.7)	25 (100)	
	10th	14 (100)	0 (0.0)	14 (100)	
TOTAL		131 (98.5)	2 (1.5)	133 (100)	

Legend: *Fisher's Exact Test; PwD - people with disability.

Of the 23 participants (17.3%) who had previously provided care to PwD, only one (4.3%) reported feeling prepared, while eight (34.8%) reported not feeling prepared and 14 (60.9%) were unsure. A statistically significant association was observed between previous experience providing care to PwD and students' responses regarding self-perceived preparedness ($p=0.001$). Regarding students who know a PwD, of the 47 (35.3%) only 2 (4.3%) would feel prepared, 37 (78.7%) would not feel prepared and 8 (17%) could not say. The association between knowing a PwD and feeling prepared was not significant ($p=0.142$), as shown in Table 5.

Table 5: Association between previous experience with PwD and students' self-perceived preparedness to provide dental care for PwD.

Variables		Prepared n (%)	Not prepared n (%)	Unsure n (%)	Total n (%)	p- value
Previous clinical experience providing care to PwD	Yes	1 (4.3)	8 (34.8)	14 (60.9)	23 (100)	0.001*
	No	1 (0.9)	96 (87.3)	13 (11.8)	110 (100)	
Acquaintance, friend, or family member with a disability	Yes	2 (4.3)	37 (78.7)	8 (17.0)	47 (100)	0.142
	No	0 (0.0)	67 (77.9)	19 (21.1)	86 (100)	

Legend: *Fisher's Exact Test; PwD - people with disability.

DISCUSSION

This study evaluated dental students' perceptions, interest, and clinical experiences regarding the care of PwD at a Brazilian public university. Overall, the results indicate that while participants generally recognize the barriers faced by PwD, they report limited preparedness and insufficient structured training within the undergraduate dental curriculum.

Approximately one-third of students reported knowing a friend or relative with a disability, and most of these respondents indicated that their familiarity had difficulty accessing dental care due to their condition.⁴ These findings are consistent with prior research that identifies multiple barriers, including infrastructure limitations, inadequate training, and provider attitudes, as impediments to oral healthcare for PwD.²³ It is essential to advance equity in oral health by guaranteeing that individuals with disabilities receive care of the same quality and accessibility as those available to the general population.²⁴ Therefore, promoting awareness of the unique oral health needs of PwD and emphasizing the importance of inclusive care are essential strategies to improve access and reduce disparities in service utilization.¹⁴

In this study, personal contact with PwD was significantly associated with greater interest in treating this population, regardless of sex or academic year. Similarly, a previous study reported that both the frequency and quality of interactions with PwD are positively associated with increased student engagement, highlighting the importance of meaningful clinical and social experiences.¹⁹ However, heightened interest did not correspond to greater self-confidence; most students still felt unprepared for clinical care, reinforcing a gap between awareness and competence. This suggests

that personal familiarity alone is insufficient without structured educational and clinical experiences.

Clinical exposure to PwD did not correspond to high levels of self-confidence among the students in this study. Among the 23 students who had previously provided care to a people with a disability, only one reported feeling prepared. These findings suggest that the limited clinical exposure currently available during undergraduate training may not be sufficient, by itself, to foster students' confidence and perceived preparedness. Previous studies have likewise emphasized that meaningful improvements in confidence and competence are more likely when clinical experiences are structured, supervised, and integrated with theoretical instruction and feedback.¹⁶ Therefore, these findings reinforce the need for curricular strategies that adopt a holistic approach to the delivery of care across diverse clinical settings, better preparing future dentists to provide comprehensive care for PwD.¹⁰

Although many students reported some theoretical exposure to PwD-related content through lectures or independent study, only a small minority had received formal training via a dedicated course in SCD. While theoretical knowledge did stimulate interest, it failed to build practical competence.²⁵ This disconnect points to the need for integrated curricula that combine didactic learning with supervised clinical experiences.¹⁰

The overwhelming majority of participants supported integrating a mandatory SCD course into the undergraduate curriculum. This aligns with evidence that structured coursework and patient exposure significantly enhance student preparedness. Incorporating such experiences through service-learning or outreach programs has been shown to improve competence, confidence, and inclusive attitudes.^{25,26}

The majority of students expressed strong interest in enrolling in a dedicated course on dental care for PwD, reflecting both a perceived need and a willingness to engage in self-directed learning, as similarly observed previously.²⁷ This aligns with evidence that structured educational programs integrating theoretical instruction with supervised clinical experiences improve students' preparedness and confidence to care for PwD.²⁸

Dental students frequently reported emotional and behavioral responses, such as insecurity, anxiety, and perceived lack of self-reported competence, when considering the treatment of patients with disabilities. Also, they frequently report feeling unprepared to manage these patients.^{10,29} These barriers are likely associated with a lack of institutional support and limited curricular emphasis, as well as apprehension regarding communication and treatment challenges specific to this population.³

Based on our results, dental education providers should integrate SCD into undergraduate programs through both formal coursework and experiential learning opportunities. Educational strategies such

as community-based outreach programs, service-learning experiences, and specialized training modules have been shown to enhance student preparedness in treating PwD. For instance, Ahmad et al.³⁰ highlight that extramural activities provide valuable exposure to real-world scenarios, thereby improving students' confidence and clinical competence. Similarly, structured interventions embedded within the SCD curriculum have demonstrated positive impacts on students' knowledge, attitudes, and clinical abilities in caring for individuals with disabilities.²⁶ Beyond curricular content, effective implementation should prioritize the longitudinal integration of SCD throughout the undergraduate curriculum rather than limiting the topic to isolated lectures or optional activities. Educational strategies may include progressive supervised clinical experiences, active learning approaches such as case-based discussions, simulation, and reflective practice, as well as interdisciplinary learning opportunities involving other health professions to foster collaborative, person-centered care. Consequently, there is a clear imperative for dental institutions to incorporate a dedicated course on SCD within the undergraduate curriculum²⁷ and to recognize training in this field as an essential component of comprehensive dental education.³¹

Although increased curricular exposure and hands-on training in SCD are linked to improved student technical skills, the evidence remains limited by small, non-representative samples, inconsistent study designs, reliance on self-reported outcomes, and short-term follow-up.³² Therefore, there is a clear need for robust, high-quality longitudinal research to evaluate the sustained impact of educational interventions on student competence and practical performance.

This study has some limitations. The sample was drawn from a single public university in Brazil using convenience sampling, which may limit the generalizability of the findings to other educational settings. Data collection relied entirely on self-reported responses, making the results susceptible to response and social desirability biases. Furthermore, the questionnaire did not include an objective assessment of participants' knowledge or clinical competence; instead, it evaluated students' educational exposure, perceptions, and self-perceived preparedness regarding the care of PwD. Additionally, the study focused exclusively on students' perspectives and did not include faculty members, clinical supervisors, or academic administrators, whose views are also important for understanding curricular development and institutional readiness. Future research should employ objective knowledge assessments, include multiple institutions, and explore faculty and administrator perspectives on institutional facilitators and barriers to SCD implementation.

CONCLUSION

In conclusion, undergraduate dental students at this Brazilian public university demonstrated limited clinical and curricular exposure to the care of PwD, based on self-reported data. However, they acknowledged the importance of such training and showed strong interest in receiving it. While these findings cannot be generalized beyond the institution studied, they suggest that dental curricula should consider incorporating mandatory SCD components that combine theoretical instruction with practical, supervised experiences to prepare more inclusive, competent future professionals.

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