


Barriers to Dental Care in Individuals with Special Healthcare Needs in Qatif, Saudi Arabia: A Caregiver's Perspective

This article was published in the following Dove Press journal:
Patient Preference and Adherence

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Objective: Access to dental care is a key factor influencing oral health outcomes. Individuals with special healthcare needs are at risk of not having access to dental care services which they need to maintain their oral health. This study assessed the magnitude of this problem and identified barriers responsible for the difficulties in accessing dental care in Qatif, Saudi Arabia, as reported by caregivers of individuals with special healthcare needs.

Methods: This cross-sectional study collected data using a self-administered survey questionnaire from caregivers of individuals with special healthcare needs across 11 centers (eight special needs centers and three schools) in Qatif, Eastern Province of Saudi Arabia, between February and April 2019.

Results: A total of 186 caregivers participated in the study, 102 (54.8%) of whom reported difficulties in getting access to dental care. The key barriers included lack of time on the part of caregivers (60.8%), unsuitable clinic environment (53.9%), difficulties with transportation (51.9%), medical/health status of the individual with special healthcare needs (51.0%), and geographically distant dental clinics (51.0%). Caregiver demographics (age, gender, and educational level) had no significant influence on the difficulties reported by caregivers in getting access to dental care for individuals with special healthcare needs ($p>0.05$).

Conclusion: A large proportion of caregivers in Qatif, Saudi Arabia, experience difficulties with access to dental care services for individuals with special healthcare needs. The most common barriers are physical accessibility of dental facilities (for individuals with special healthcare needs), affordability, and lack of skills and knowledge of dental care providers.

Keywords: health services accessibility, dental care for disabled, caregivers, Saudi Arabia

Introduction

Over the years, access to health care has received increasing attention as a key determinant of health outcomes. Access to dental care is an important but complex component of the debates surrounding access to health care in general. While a significant proportion of the global population still has issues with access to dental care, individuals with special healthcare needs are even more at risk of inadequate access to the dental care services they need to maintain their oral health and manage dental conditions.¹⁻³ A number of studies have identified dental care as one of the most prevalent unmet healthcare needs among people with special needs.^{2,4,5} Even though this is a problem among general populations, it is a bigger issue among those with special healthcare needs; especially those with greater limitations attributable to disability.⁶⁻¹⁰

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Globally, estimates indicate that as many as 500 million people experience one or more disability arising from physical, mental, or sensory impairments; and as a result, require special care.¹¹ In Saudi Arabia alone, about one million people live with one or more disability; pointing at the need for special care considerations for this group of people.¹² Considering the “peculiarity” of individuals with disabilities, they require “special considerations when receiving dental treatments” as the nature of their circumstances often presents challenges while accessing dental care.¹³ However, many of the individuals with special healthcare needs do not have the required access.¹⁴ Being one of the most marginalized groups in society, discrimination, lack of care, and inequity bars individuals with disabilities from receiving many of their rights, especially in education and health care.^{15–17}

With increasing global awareness of the importance of oral health among members of the public and dental care professionals, it would be expected that there should be almost universal access to dental services in Saudi Arabia. However, this is not the case. A Saudi study showed that 46.2% of those with special healthcare needs have difficulties accessing dental care, and 84.7% were only attended to in the dental clinic for emergency treatment.³ A number of barriers have been associated with this poor access to dental care by individuals with special healthcare needs. These include poor income level, low levels of parent education, and not having health/dental insurance coverage.^{18–21} The influence of low socioeconomic status (SES) on access to dental care has been well documented, with families in lower socioeconomic categories more likely than those in higher categories to experience challenges with access to dental services.²² Additionally, there are psychological, behavioral, and physical complications associated with these special healthcare needs individuals who may already have complex medical backgrounds that prevent them from receiving the dental care they require.^{23–26} From the aspect of dental care professionals, the lack of special care training skills among dentists often makes them uncomfortable treating these patients because of their resistant and maladaptive behavior.^{19,27,28}

In order to explore reasons why there is poor access to dental care services in Saudi Arabia, it is important to fully understand the barriers experienced by special healthcare needs individuals. Alumran et al and Al-Sheri attempted to document the magnitude of the problems and identify barriers to dental care for these individuals in Saudi

Arabia.^{3,13} However, considering the uneven distribution of the population across the regions and cities in the country with varying socioeconomic and public health circumstances, it becomes necessary to further investigate this in other parts of Saudi Arabia. This study aimed to assess caregivers’ responses regarding the magnitude of the problems and barriers to accessing dental care experienced by special healthcare needs individuals in Qatif, Saudi Arabia. The objectives were to determine the proportion of individuals with special healthcare needs that have experienced difficulties in accessing dental care and identify the main barriers responsible for this.

Methods

Study Design and Population

This cross-sectional study was conducted in the city of Qatif, Eastern Province of Saudi Arabia with a population over 98,000. Participants for the study were selected from special needs centers affiliated with the Saudi Ministry of Social Affairs, public schools with integrated special needs education, and charity organizations taking care of special healthcare needs individuals in Qatif. A total of 11 centers were involved in the study on the basis of their assent to the study being conducted at their locations. These centers provide supportive care and attend to the daily needs of special healthcare needs individuals across all ages.

The study focused on caregivers of individuals with special healthcare needs across these locations. Using a convenience sampling method, participants who met the study’s main inclusion criteria of i) being a caregiver for a special healthcare needs individual, ii) with a history of taking the individual with special healthcare needs under their care to the dentist, and iii) willing to provide informed consent, were allowed to participate in the study and sequentially recruited until the total sample size had been met. Those who were not willing to provide informed consent or had not been taking care of a special healthcare needs individual were excluded. Only one caregiver was randomly selected for each healthcare needs individual (in cases where there was more than one caregiver available), indicating an equal number of caregivers and individuals with special healthcare needs. The authors were responsible for identifying those who met the study’s criteria, provided them with brief information on the study’s goals and procedures, and obtained informed consent.

Data Collection and Analysis

A self-administered survey questionnaire in Arabic designed purposely for the study was distributed to participants in each center between February and April 2019. This questionnaire was adapted from previously used surveys in studies.^{3,28} The data collection tool was piloted on a sample of 10 caregivers to ensure proper presentation, easy comprehension and completion of the questionnaire by the target population. The survey gathered information from the caregiver about the individual with special healthcare needs whom the caregiver cares for with respect to: i) their demographic information, ii) disability (as diagnosed by previous health care providers), iii) degree of access to dental care, and iv) difficulties associated with access to dental care.

The resulting information was compiled in an Excel spreadsheet where it was cleaned and transferred to Statistical Package for Social Science (SPSS) software, version 20 (Chicago, IL, USA) for analysis. The results of descriptive analysis were summarized in frequency (proportion) tables, while those of inferential analyses (chi squared tests) carried out to determine the presence and magnitude of associations between variables were summarized in an odds ratio table. The major and minor reasons why caregivers had experienced difficulties in getting their special healthcare care individuals under their care to see and be attended to by a dentist were later combined as barriers to accessing dental care. Also, the odds ratio table shows barriers to accessing dental care and associations with age, gender, and level of education. The table presents this information as individuals who had experienced the challenge (major and minor reasons) versus those who had not (no reason) with regards to age, gender, and level of education. Significant differences were considered at a *p*-value of <0.05.

Ethical Approval

Ethical approval was obtained from the Institutional Review Board at the Imam Abdulrahman Bin Faisal University, Dammam. Informed consent was obtained from all eligible participants and the study was carried out in line with ethical principles outlined in the Helsinki Declaration.

Results

A total of 186 caregivers participated across the eleven study locations in Qatif. This was based on a response

rate of 26.6% out of the 700 caregivers who were approached for the study. Of the participating caregivers, the majority of them were females (64.5%; Table 1). A larger proportion (30.6%) of the caregivers were between the ages of 35 and 44 years, closely followed by those in the 25–34 years category (28.0%). With regards to education, 36.0% of the caregivers had high school education, 34.4% had college or higher education, while 29.6% had no education or did not get to high school level. Each caregiver provided information on one individual with special healthcare needs. The majority of individuals with special healthcare needs were of male gender (67.2%) and had developmental disabilities (44.6%). The remaining had sensory impairment (26.9%), physical disabilities (18.3%), and behavioral and emotional disorders (10.2%).

As many as 102 (54.8%) of the caregivers reported difficulties in accessing dental care for special healthcare needs individuals in the community (Table 2), while the rest responded negative. Also, 88.2% of them indicated that they were willing to support the presence of a specialized dental facility/hospital that can provide dental care for special healthcare needs individuals.

The study tested 17 potential reasons for the difficulties that caregivers experienced with accessing dental care for the special healthcare needs individuals in their care (n=102). As summarized in Table 3, the most common

Table 1 Demographic Distribution of the Study Participants

Group	Variables	Values (n=186)	N	%
Caregivers	Gender	Male	66	35.5
		Female	120	64.5
	Age	Under 25 years	39	21.0
		25–34 years	52	28.0
35–44 years		57	30.6	
Over 45 years		38	20.4	
Level of education	Under high school	55	29.6	
	High school	67	36.0	
	College and higher	64	34.4	
Special needs individuals	Special needs types	Behavioral & emotional	19	10.2
		Developmental disability	83	44.6
		Physically disabled/others	34	18.3
		Sensory impairment	50	26.9
	Gender	Male	125	67.2
	Female	61	32.8	

Note: N and n represent the frequency and sample size respectively; % - sample proportion.

Table 2 Caregivers' Perceptions of Issues with Access to Dental Care in the Community

Variables	Values (n=186)	N	%
Does the person you care for face any difficulties in accessing dental care in your community?	Yes	102	54.8
	No	65	34.9
	Do not know	19	10.2
Do you support the presence of a specialized dental hospital/center that treats special needs individuals?	Yes	164	88.2
	No	12	6.5
	Do not know	10	5.4

Note: N and n represent the frequency and sample size respectively; % - sample proportion.

reasons for these difficulties were issues with lack of time on the part of caregivers (60.8%), dental condition of the special healthcare needs individual not being too serious enough to see a dentist (55.8%), and the design and environment of the dental clinic which were disturbing to special healthcare needs individuals (53.9%). Others include difficulties with transportation to the dental clinic (51.9%), medical health status of the special healthcare needs individual which hinders him/her from receiving immediate dental care (51.0%), and large geographical distances between the dental clinic and the special healthcare needs individual (51.0%).

Among all the reasons tested, there were a number of them that the caregivers considered major reasons for the challenges they had been experiencing with access to dental care. These included issues with lack of time on the part of caregivers (41.2%), the environment and design

of the dental clinic being too disturbing for individuals with special healthcare needs (36.3%), special healthcare need individual requiring informed consent from primary physician for hospitalization (33.3%), and special healthcare need individual's dental condition not being serious enough to see a dentist (33.3%).

Going further to assess the influence of caregiver age, gender, and level of education on the prevalence of these difficulties, Table 4 shows that caregiver demographics places some caregivers at higher risk of experiencing these difficulties that make access to dental care challenging than others. Even though not found to be statistically significant, caregivers aged less than 35 years were more likely than older caregivers to have special healthcare needs individuals under their care experiencing the following difficulties with access to dental care: i) dental clinic waiting area and general services not being suitable (odds ratio, OR 1.2, 95% CI: 0.5–2.7), ii) dental clinic not equipped to facilitate treatment of special healthcare needs individuals (OR 1.7, 95% CI: 0.7–4.3), iii) dental staff not friendly or do not know how to manage special healthcare needs individuals (OR 1.7, 95% CI: 0.7–3.9), iv) medical health status of the special healthcare needs individual hindering him/her from receiving immediate dental care (OR 1.5, 95% CI: 0.6–3.5), and v) special healthcare needs individual unable to sit on the dental chair or cooperate with the dentist (OR 1.3, 95% CI: 0.6–2.8).

Similarly, male caregivers were more likely than female caregivers to have issues with disturbing dental

Table 3 Reasons Given by Caregivers for Difficulties in Accessing Dental Care for Special Care Needs Individuals in the Community

Variables (n=102)	Major Reason	Minor Reason	Not a Reason	Do Not Know
Dentist unwilling to treat or inadequately trained in treating patients with special needs	11 (10.8%)	9 (8.8%)	64 (62.7%)	18 (17.6%)
Dental clinic environment, colors, light and design are disturbing to special needs persons	37 (36.3%)	18 (17.6%)	33 (32.4%)	14 (13.7%)
Dental clinic waiting area and general services (example: toilets) are not suitable	31 (30.4%)	14 (13.7%)	45 (44.1%)	12 (11.8%)
Dental clinic is not equipped to facilitate treatment of special needs individuals	12 (11.8%)	13 (12.7%)	60 (58.8%)	17 (16.7%)
Dental staff are not friendly or do not know how to manage special needs individuals	23 (22.5%)	22 (21.6%)	45 (44.1%)	12 (11.8%)
Patient has communication difficulties with the dentist during treatment visits	12 (11.8%)	17 (16.7%)	65 (63.7%)	8 (7.8%)
Medical health status of the patient hinders him/her from receiving immediate dental care	32 (31.4%)	20 (19.6%)	38 (37.3%)	12 (11.8%)
Patient needs informed consent from his physician or needs hospitalization	34 (33.3%)	8 (7.8%)	46 (45.1%)	14 (13.7%)
Patient is afraid of the dentist	25 (24.5%)	13 (12.7%)	57 (55.9%)	7 (6.9%)
Patient unable to sit on the dental chair or cooperate with the dentist	30 (29.4%)	19 (18.6%)	51 (50.0%)	2 (2.0%)
Patient's dental condition was not serious enough to see a dentist	34 (33.3%)	23 (22.5%)	35 (34.3%)	10 (9.8%)
Dental centers/units that treat special needs patients are rare and limited	7 (6.9%)	8 (7.8%)	81 (79.4%)	6 (5.9%)
Difficulty in getting appointments	11 (10.8%)	10 (9.8%)	76 (74.5%)	5 (4.9%)
No time to visit the dentist	42 (41.2%)	20 (19.6%)	33 (32.4%)	7 (6.9%)
Cost or financial difficulty	24 (23.5%)	19 (18.6%)	55 (53.9%)	4 (3.9%)
Transportation difficulty	29 (28.4%)	24 (23.5%)	44 (43.1%)	5 (4.9%)
Dental clinic is too far away	31 (30.4%)	21 (20.6%)	48 (47.1%)	2 (2.0%)

Table 4 Reasons for Difficulties with Access to Dental Care Expressed by Caregivers (n = 102)

Reasons for Difficulties with Access to Dental Care (n=102)	Age		Gender		Level of Education	
	OR	95% CI	OR	95% CI	OR	95% CI
Dentist unwilling to treat or inadequately trained in treating patients with special needs	0.82	0.30–2.24	0.82	0.28–2.43	1.49	0.51–4.35
Dental clinic environment, colors, light and design are disturbing to special needs persons	0.60	0.25–1.43	1.31	0.52–3.31	1.03	0.40–2.63
Dental clinic waiting area and general services (example: toilets) are not suitable	1.20	0.52–2.74	1.48	0.62–3.52	1.12	0.44–2.81
Dental clinic is not equipped to facilitate treatment of special needs individuals	1.66	0.65–4.26	0.87	0.32–2.36	1.41	0.51–3.93
Dental staff are not friendly or do not know how to manage special needs individuals	1.71	0.74–3.94	1.00	0.42–2.40	0.57	0.22–1.46
Patient has communication difficulties with the dentist during treatment visits	1.18	0.49–2.82	1.48	0.60–3.65	1.38	0.52–3.63
Medical health status of the patient hinders him/her from receiving immediate dental care	1.49	0.64–3.45	0.91	0.38–2.17	0.80	0.32–2.00
Patient needs informed consent from his physician or needs hospitalization	1.09	0.47–2.52	0.75	0.30–1.85	1.02	0.40–2.57
Patient is afraid of the dentist	0.57	0.25–1.30	1.41	0.60–3.33	1.42	0.57–3.53
Patient unable to sit on the dental chair or cooperate with the dentist	1.27	0.58–2.79	1.27	0.55–2.91	1.29	0.54–3.09
Patient's dental condition was not serious enough to see a dentist	0.76	0.33–1.76	1.25	0.50–3.13	0.71	0.28–1.81
Dental centers/units that treat special needs patients are rare and limited	0.44	0.14–1.41	1.00	0.31–3.22	0.63	0.16–2.44
Difficulty in getting appointments	0.55	0.21–1.49	1.18	0.44–3.22	0.77	0.25–2.35
No time to visit the dentist	1.13	0.49–2.64	1.97	0.77–5.08	0.76	0.30–1.88
Cost or financial difficulty	0.84	0.38–1.86	0.89	0.38–2.11	0.68	0.27–1.68
Transportation difficulty	0.87	0.39–1.94	1.85	0.77–4.45	0.80	0.33–1.91
Dental clinic is too far away	0.62	0.28–1.36	0.74	0.32–1.70	0.55	0.23–1.31

Notes: Age: 12–34 years *vs ≥ 35 years; gender: males *vs females; level of education: under high school/no education *vs high school graduate and above (*indicates the reference values). Level of significance set at $p < 0.05$; none of the ORs were statistically significant.

Abbreviations: OR, odds ratio; 95% CI, 95% confidence interval.

clinic environment and design (OR 1.3, 95% CI: 0.5–3.3), unsuitable dental clinic waiting area and general services (OR 1.5, 95% CI: 0.6–3.5), special healthcare needs individual having communication difficulties with the dentist during treatment visits (OR 1.5, 95% CI: 0.6–3.7), special healthcare needs individual being afraid of the dentist (OR 1.4, 95% CI: 0.6–3.3), special healthcare needs individual being unable to sit on the dental chair or cooperate with the dentist (OR 1.3, 95% CI: 0.6–2.9), special healthcare needs individual's dental condition not being serious enough to see a dentist (OR 1.3, 95% CI: 0.5–3.1), difficulty in getting dental appointments (OR 1.2, 95% CI: 0.4–3.2), not having enough time to visit the dentist (OR 2.0, 95% CI: 0.8–5.1), and difficulties with transportation for dental appointments (OR 1.9, 95% CI: 0.8–4.5).

With regards to the level of education, caregivers who had no education or had education below the level of high school were more likely than their counterparts with education at the level of high school and above to experience issues with: i) dentists unwilling to treat or inadequately trained in treating individuals with special healthcare needs (OR 1.5, 95% CI: 0.51–4.35), ii) disturbing dental clinic environment and design (OR 1.0, 95% CI: 0.40–2.63), iii) unsuitable dental clinic waiting area and general services (OR 1.1, 95% CI: 0.44–2.81), iv) dental clinic unequipped to facilitate treatment of special healthcare needs individuals (OR 1.4, 95% CI: 0.51–3.93), v) special healthcare needs individual

having communication difficulties with the dentist during treatment visits (OR 1.4, 95% CI: 0.52–3.63), vi) special healthcare needs individual being afraid of the dentist (OR 1.4, 95% CI: 0.57–3.53), and vii) special healthcare needs individual being unable to sit on the dental chair or cooperate with the dentist (OR 1.3, 95% CI: 0.54–3.09). While it is key to note that none of these associations were found to be statistically significant, they are still valid reasons why caregivers experience difficulties with access to dental care for individuals with special healthcare needs.

Discussion

This paper describes the challenges and barriers that caregivers in Qatif, Saudi Arabia, experience with access to dental care services for individuals with special healthcare needs in their care. The responses suggest that caregivers are aware of the need for dental care for individuals with special healthcare needs under their care and that they try to get access to these services. In spite of this, a significant proportion of the special healthcare needs individuals still have challenges accessing the dental care they need. As much as 54.8% of the caregivers surveyed indicated that the individuals with special healthcare needs under their care experience difficulties with accessing dental care. This proportion is similar to the 46.2% reported by Al-Shehri as being the proportion of those who had experienced difficulties getting dental care for individuals with

special healthcare needs, and as much as 55% of them had unmet dental needs.³ Similar findings have also been reported by investigators in other countries with approximately 35% of respondents indicating that they have difficulties in finding dentists willing to treat individuals who had disabilities.^{23,29} The implications of difficult access to dental services are poor dental outcomes such as higher prevalence of dental caries and need for restorative care.^{30,31}

As identified by the caregivers in this study, the most prevalent reasons for not being able to access dental care were lack of time on their part, poor design and environment of the dental clinic, transportation difficulties, medical health status of the special healthcare needs individual which hinders him/her from receiving immediate dental care, and having the dental clinic too far away from the intending special healthcare needs individual. Poor design and environment include lack of wheelchair accessible entrances and the presence of physical impediments that make it difficult for a disabled individual to get access to the facility. Other barriers included unfriendly and incompetent dental staff, cost/financial difficulty, fear of the dentist, communication issues between the special healthcare needs individual and the dentist, difficulty in getting dental appointments, and insufficient dental care centers to cater for special healthcare needs individuals. These barriers are congruent with those reported by other studies,^{3,13,32} and can be grouped into those relating to special healthcare needs individuals' ability to physically access dental facilities, inability to afford dental services due to high costs of treatment and insufficient financing for dental treatment, and the preparedness and willingness of dentists and dental nurses to treat special healthcare needs individuals.¹³

Furthermore, caregiver demographics appeared to have placed some individuals with special healthcare needs at a higher risk of experiencing access difficulties than others. For instance, caregivers aged less than 35 years were more likely than older caregivers to experience issues with unsuitable and unequipped dental clinics or not having time to take individual with special healthcare needs under their care to visit the dentist, among other challenges. Similarly, male caregivers were more likely to have issues with access to dental services due to unsuitable dental clinic environments and having fearful special healthcare needs individuals who were unable to sit on the dental chair or cooperate with the dentist. Not having enough education at least up to

high school level meant that some caregivers were more likely to have challenges with access than others.

While some had it better than others, caregivers in this study who were male, younger than 35 years, and not enough education were more likely than others to have even more difficulties with access to dental services for the special healthcare needs individuals they were taking care of. As several researchers such as Gondlach et al, Gerreth and Borysewicz-Lewicka, and Chadwick et al have shown, multiple factors such as poor socioeconomic status of the families within which special healthcare needs individuals are brought up, young age, and low literacy worsens the ability of individuals with special healthcare needs to access care.^{1,6,7} Even though this study did not examine the influence of insurance on access to dental care, some of the caregivers in this study indicated that they had experienced cost and financial difficulties which could have been reduced if they had the benefit of insurance, as Al-Shehri emphasizes.³ Furthermore, individuals with disabling conditions are in many cases overwhelmed by the psychological, financial, and physical demands of the disability in such a way that seeking dental care drops on their list of priorities.^{33,34} This is illustrated by the large proportion of caregivers in this study who had indicated that the special healthcare needs individual's condition was either not serious enough to see the dentist based on their self-assessment or they did not have enough time to take the special healthcare needs individual to see the dentist.

Another factor that needs to be considered is the lack of preparedness, on the part of dental care providers, to take care of individuals with special healthcare needs. Even though dental staff were not directly asked as part of the study, many of the caregivers indicated that some dental staff in the dental facilities they visited did not know how to cater for individuals with special healthcare needs, neither did they have adequate infrastructure to cater for this special clientele. Studies have extensively documented how much of a problem this is in the developed world. This has been attributed in part to i) inadequate training of dental professionals on how to take care of individuals with special healthcare needs and ii) lack of necessary equipment and infrastructure for individuals with disabilities.^{3,13,35-37}

In generalizing this study's findings, care needs to be taken in considering the limitations encountered during the course of the study. Firstly, the response rate of 26.6% is below the normal range for surveys.³⁸ This may be

explained by the lack of incentive to participate in the study, unawareness of this type of surveys, and/or lack of time. Considering that this study used a self-administered questionnaire which is based on caregivers' perceptions rather than on objective data, there is an increased chance of bias as participants might provide a range of skewed responses based on personal desirability. Also, the conduct of the study among caregivers of special healthcare needs individuals housed in special care facilities rather than at home suggests caution in generalizing the study to all individuals with disabilities. Further studies will be required to test the barriers identified in this study and find out the extent to which they made access to dental care difficult. Also, it will be important to obtain the perspective of dental care practitioners with regards to access to dental care for individuals with special healthcare needs.

Conclusion

It is clear that caregivers of individuals with special healthcare needs in Qatif, Saudi Arabia, experience some difficulties with access to dental care services for individuals with special healthcare needs. This is mostly due to special healthcare needs individuals' inability to physically access dental facilities, inability to afford dental services due to high costs of treatment, and the unpreparedness and unwillingness of dental care practitioners to treat individuals with special healthcare needs. Considering the importance of dental care to the overall health of individuals with special healthcare needs, there is a need for the inclusion of dental care as a standard component of comprehensive care for these individuals. Also, there needs to be deliberate actions to address other barriers such as improved training for dental care practitioners, and investments in equipment and other physical infrastructure to support the dental care of individuals with disabilities.

Disclosure

The authors report no conflicts of interest for this work.

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