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REVIEW

Preparedness and willingness of dental care providers to treat patients with special needs

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Abstract: This study aimed to review the available literature about special needs dentistry, factors affecting treatment of patients with special needs, dental education, and the preparedness and willingness of dental care providers to treat patients with special needs. The study also aimed to assess the validity and reliability of available scales that measure the preparedness of dental care providers to treat patients with special needs. Forty studies from esteemed refereed journals were reviewed in this article. The topics in the study were relevant to special needs dentistry, Saudi Arabia, and dental care providers' perceptions of treating patients with special needs. Reviewed studies were extracted from several electronic databases, such as PubMed and Medline. Studies in Saudi Arabia about special needs dentistry and the preparedness of dental care providers to treat patients with special needs are scarce. Further research in this area needs to be conducted in Saudi Arabia.

Keywords: oral health, dental education, quality of healthcare, social determinants of health

Introduction

As reported by the United Nations, more than half of a billion people worldwide experience disabilities due to mental, physical, or sensory impairment.[1] According to the American Dental Association (2017), people with disabilities – special needs – often require "special consideration when receiving dental treatments because of their developmental or cognitive conditions". This can also include patients with Autism spectrum disorder, Alzheimer's disease, Down syndrome, or any conditions that make dental procedures more difficult.[2]

In fact, this complexity in treating patients with special needs had led to the evolution of special care dentistry. In the USA, special needs dentistry is defined as "a method of oral health management that is specially designed for patients with special needs who have a variety of medical conditions or disabilities that require more time or altered delivery methods than the routine delivery of dental care for the general population."[2] Also, special needs dentistry is defined by the Royal Australasian College of Dental Surgeons as a type of dentistry that focuses attention on oral health care for disabled patients who required special methods and techniques to treat their oral health conditions.[3] According to Gallagher and Fiske,[4,5] special care dentistry extends beyond health management to the improvement of oral health outcomes in patients with special needs who often have a combination of different disabling conditions.

Despite this remarkable progress in medicine and dentistry, studies have shown that individuals with special health care needs have more risk of developing dental

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problems and untreated dental diseases compared with their healthier counterparts.[5,6] In addition to the poorer oral health outcomes, patients with special needs are more likely to have limited access to dental care services, which can contribute to a major health disparity between people with special needs and the general population.

In fact, the lack of willingness and the competence of dental care providers to treat patients with special health care needs, as well as the hurdles these providers face themselves, remain barriers to provide access to dental care.[6,7] Thus, dental care providers should be better educated, trained, and prepared to effectively manage patients with special needs in an effort to minimize oral health disparities within this population. Furthermore, all patients with special needs must have equal access and high-quality treatment that focuses on patient safety, patient-centered care, and treatment of all dental needs.

In Saudi Arabia alone, there are approximately one million individuals with a disability,[5] which represents a pressing demand for special needs dentistry to be further explored on a national level. This study lays the foundation for understanding the factors that influence access to dental health services by people with special needs through a review of the literature concerning dental care providers' perceptions of treating this population of patients.

The Iron Triangle of Health Care[8] framework has been used to guide this literature review, where this framework suggests that health care relies on the following three major aspects: access, quality, and cost. An increase or a decrease in one aspect will have an effect on the other aspects someway.

Methodology

Studies about dental care providers and patients with special needs were reviewed from several electronic databases, such as PubMed and Medline. A total of 40 studies were reviewed from different countries around the world, including the USA, Malaysia, Taiwan, ROC, and Saudi Arabia. From the reviewed studies, 16 scales that measure the preparedness and willingness of dental care providers were assessed for their reliability and validity (Table 1).

Literature review

Access to health care

Various studies have indicated that individuals with special needs have limited access to dental clinics for many reasons, including their physical or mental disabilities.[6] Their ability to physically access the dental clinics and offices, along with their ability to afford the cost of the treatment and inadequate financing for dental treatment, may hinder their access to dental clinics.[6,9–12] Moreover, the preparedness and willingness of dental care providers to treat patients with special needs may impact access and thus their oral health.[1,3,13]

One of the studies that investigated dentists' knowledge and attitudes toward treating patients with special needs found that majority of the studied dentists reported having difficulty treating such patients. The study also highlighted those dentists did not have training or special education to handle this type of patients.[14] Another study that was conducted in Poland in 2014 assessed the access of special needs schoolchildren to dental care services based on parents' perception and found that the level of intellectual disability can play a role in the accessibility of individuals with special needs to dental care services. In that study, parents with children with mild disability reported facing fewer barriers to access dental health care. This was contrary to the parents of children with severe disability, who reported encountering more access problems. This can indicate the degree to which the level of training and education of dentists can influence the access to dental care services of patients with special needs, who will have different levels of disability.[15]

The lack of preparedness of dentists to treat patients with special needs can influence their degree of willingness to treat those patients. However, this is not always the case since sometimes dentists are willing to treat patients with special needs to help reduce the inequality in accessing dental health care services. Nonetheless, their willingness to treat special needs patients is hampered by their perceived level of preparedness to provide dental services to this population.[10,14]

Quality of care

Dental education

Attempts to promote the education of undergraduate dental students with regard to treating patients with special needs and making them more prepared date back to the 1970s, when Robert Wood Johnson provided large grants to 11 dental colleges in the USA to develop teaching programs for patients with special needs or disabling conditions.[13,14] One study found that in Saudi Arabia, dentists who treat patients with special needs are dental pediatrics; there are no dental specialists to manage patients who are adults with special needs, and there are no structured dental programs or courses for undergraduate dental students.[5] Lack of training and experience of undergraduate dental students in dealing with patients with special needs was one of the most reported issues that inhibits the treatment of these patients.[3] Moreover, most dental educators are specialists in their field and have little or no interest in other dentistry fields.[15]

Table 1 Scale directed to dental care providers

Study	Country	Target population	Development and validation of instrument	Implementation	Reliability of instrument	Dimensions measured in the scale
Holder, Waldman, and Hood, 2009[1]	USA	Deans of dental/ medical schools, directors of residency programs, and medical students	Development and validation were not mentioned	E-mailed questionnaire	Reliability was not mentioned	Perceptions of preparation
Dao, Zwetchkenbaum, and Inglehart, 2005[13]	USA	Dentists	Development and validation were not mentioned	Mailed questionnaire	Reliability was not mentioned	Experience, attitudes
Clemetson et al, 2012[16]	USA	Dentists	Self-developed, content and face validity conducted	Mailed questionnaire	Reliability was not mentioned	Infrastructure at dental school, availability of services, and knowledge, and compliance with standards
Alkahtani et al, 2014[26]	Saudi Arabia and USA	Dental school alumni	Self-developed using instruments from the literature. Face validity was done	Web-based questionnaire	Retest reliability	Attitudes, knowledge, and experience
Derbi and Borromeo, 2016[30]	Australia	Dentists	Previously validated survey	Self-administered questionnaire	Reliability was not mentioned	Perception, awareness of government programs, criteria for referral, teaching and training, consideration of postgraduate training
Casamassimo, Seale, and Ruehs, 2004[31]	USA	General practitioners from the American Dental Association	Not mentioned	Mailed questionnaire	Reliability was not mentioned	Experience, and educational preparation
Vainio, Krause, and Inglehart, 2013[34]	USA	Deans at dental schools and pre-doctoral dental students	Self-developed using instruments from the literature. Content and face validity was done	Web-based questionnaire, and paper based	Reliability was not mentioned	Perceptions of education, attitudes, satisfaction, confidence, and future intentions
Ahmad, Razak, and Borromeo, 2014[35]	Malaysia and Australia	The deans of Malaysian and Australian dental schools	Validated (type of validation was not mentioned)	Postal questionnaire	Reliability was not mentioned	Education, and perception of education
Kleinert et al, 2007[36]	USA	Dental students	Development and validation were not mentioned	Interactive, multimedia, virtual patient modules, with pre- and post-tests	Reliability was not mentioned	The difficulty of understanding Down syndrome
DeLucia and Davis, 2009[37]	USA	Dental students	Development was not mentioned. Construct validity was done (inter-item correlation)	Self-administered questionnaire	Reliability (Cronbach's alpha)	Prior experience, perceptions, and expectations

(*Continued*)

Table 1 (*Continued*)

Study	Country	Target population	Development and validation of instrument	Implementation	Reliability of instrument	Dimensions measured in the scale
Murshid, 2015[32]	Saudi Arabia	Health care providers	A validated questionnaire from another published study was used. Content validity was done	Self-administered questionnaire	Reliability (Cronbach's alpha)	Knowledge and experiences
Tsai et al, 2007[38]	Taiwan, ROC	Dentists	Development was not mentioned. Content validity was done	Mailed questionnaire	No reliability test was done	Opinions and experiences
Moore et al, 2009[39]	USA	Alumni	Self-developed, pilot-tested. Validation was not mentioned	Mailed questionnaire	Reliability was not mentioned	Education, perceived preparedness, and experience
Chávez et al, 2011[40]	USA	Alumni	Development and validation were not mentioned	Mailed questionnaire	Reliability was not mentioned	Perceptions of education
Wolff et al, 2004[41]	USA	Dental student	Previously developed survey. Not mentioned	Self-administered questionnaire	Reliability was not mentioned	Didactic and clinical preparation, attitudes, comfort levels, and experiences
Al-Abdulwahab and Al-Gain 2003[42]	Saudi Arabia	Health care professionals	Validity previously mentioned in another study	Self-administrative questionnaire	Reliability previously mentioned in another study	Attitudes

Preparedness and willingness of dental care providers

One of the challenges regarding dental care for special needs patients is whether dental care students are sufficiently prepared to treat patients with special needs.[16] The Commission on Dental Accreditation (CODA)[17] establishes new standards for dental care and dental hygiene education programs to ensure clinical opportunities to prepare future dental professionals to provide high-quality dental care to patients with special needs, stating that "graduates must be competent in assessing the treatment needs of patients with special needs" (p. 25). Because this issue has an impact on the oral health quality of patients with special needs, many studies have pointed out dental students' lack of attempts to treat patients with special needs and have documented that the predoctoral curricula for treating patients with special needs are inadequate.[9,18] Moreover, studies have documented that limited dental care providers offer to treat patients with special needs and there are few who are prepared to educate dental students to be more competent to treat these patients in the future.[9,19] Furthermore, the more experience dental students have with the patients with special needs, the more able and willing they are to handle these patients.[22] Finally, this highlights the importance of establishing high-quality dental education programs to prepare undergraduate dental students for and to increase their willingness to treat patients with special needs now and throughout their careers.[23,24] Obviously, there are many issues that influence dental care providers' willingness and competence to treat patients with special needs.[25] It may be valuable to better understand dental education programs with regard to the treatment of patients with special needs and the impact it has on dental care practitioners' willingness to treat this population.[13]

Cost of health care service

One of the major issues associated with the quality of clinical services provided to patients with special needs is the knowledge of the health care provider and his/her ability to deliver and prescribe effective treatment.[28] The lack of preparedness due to inadequate education and training of dentists in treating patients with special needs can lead to the provision of ineffective treatment, which can bring about further complications of oral health problems, thereby increasing the cost burden.

Although oral health care is typically relatively inexpensive, it becomes costly when it is neglected due to the lack of timely access to dental care services. Dao et al pointed out that if patients with special needs have limited access to dental care

due to the lack of preparedness of dental care providers, it will lead to more oral complications for these patients that will be costly to the government and patients.[13] Thus, this issue needs to be addressed thoroughly in the Saudi community.

In terms of willingness to treat patients with special needs, Tsai et al showed that reimbursement of dentists will affect their willingness to treat disabled patients; dentists under reward programs will be more willing in contrast with dentists from teaching hospitals. Nevertheless, the study pointed out that dental students who participate in programs to treat patients with special needs have more willingness and competence to treat these patients in the future.[11,20,21]

Scales measuring preparedness and willingness

Several studies have been directed toward dental students and dental health care providers to measure the factors influencing their behaviors that may limit or improve the access of patients with special needs to dental clinics (Table 1).[1,3,7,13,16,19,22–24,26–30] These studies attempted to measure the preparedness,[9,13,26,27] experience,[19,22,23,26,27] knowledge,[3] attitudes,[13,26,29] and perceptions[7,24,31] of the dental care providers in regard to treating patients with special needs. The studies were directed at different target populations, where some targeted decision makers at dental teaching institutions,[1,3,27] while others targeted clinical dental care providers[29–32] and some studies targeted alumni and/or current students.[7,13,19,22–24,26,28]

Some of the reviewed scales were self-developed by the authors,[16,23,26,27] while others adapted scales from the literature,[22,29,30,32] and most of the reviewed studies did not mention the development of their scales.

Most of the reviewed studies either did not mention validation of their scale[7,22–24,29] or conducted face and/or content validity.[16,26–28,32] Only one study mentioned conducting construct validity by conducting inter-item correlation.[19] None of the reviewed scales were fully validated.

Conclusion

The Iron Triangle of Health Care[8] has been used as a framework for this study, where the following three major aspects are the core of any health care system: access to health care, the quality of health care, and the cost.

Patients with special needs are likely to experience poor oral health and have limited access to dental care services. This leads to an increase in oral health disease of patients with special needs, and if it is not managed, it will be costly to the government and patients themselves. Equitable and timely health care are two of the six domains of quality health care identified by the Institute of Medicine.[33] There were limited data in Saudi dental literature describing the effect of dental care providers' training and willingness regarding treating individuals with special needs. Therefore, it is important to fill this gap of knowledge by studying dental care providers' perceptions of treating patients with special needs and the issues affecting their treatment in Saudi Arabia.

Disclosure

The authors report no conflicts of interest in this work.

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