Dentists’ Perception of the Care of Patients with Special Health Care Needs in Jeddah, Saudi Arabia

Najlaa M Alamoudi1*, Abdullah S Almushayt1, Douaa A El Derwi2,3, Lujain H Mirdad4 and Eman A El-Ashiry1,5

1Pediatric Dentistry Department, King Abdulaziz University, Jeddah, Kingdom of Saudi Arabia
2Pediatric Dentistry Department, Community Medicine and Public Health, King Abdulaziz University, Jeddah, Kingdom of Saudi Arabia
3Public Health and Community Medicine, Cairo University, Cairo, Egypt
4King Abdulaziz University, Jeddah, Kingdom of Saudi Arabia
5Pedodontic Department, El Azhar University, Cairo, Egypt

Abstract

Objectives: The study aimed to explore dentists’ perception and level of satisfaction with their dental education in preparing them to provide care to patients with special health care needs (SHCNs).

Materials and methods: This was a cross-sectional study. Study participants were dentists working in clinics in Jeddah, Saudi Arabia.

Results: Dentists reported low confidence in caring for patients with SHCNs. A relationship existed between the quality of dental education and the dentists’ perception of their patient care. A great proportion of respondents were willing to attain educational activities to enhance their knowledge and skills.

Conclusion: Extensive efforts for curriculum needs assessment should be adopted to include core skills that are transferable through the entire dental curriculum and encourage a patient-centered approach in learning. The proposed curricula should also adopt the development of joint medical and dental curricula modules that focus on the care of individuals with SHCNs. These efforts should be expanded to include a national strategy to disseminate these curricula to all Saudi medical and dental schools.

Keywords: Curriculum development; Dental care; Education outcome; Special health care need

Introduction

According to the World Health Organization estimates, individuals with disabilities comprise 10% of the population in developed countries and 12% of the population in developing countries [1]. Saudi Arabia has undergone rapid economic development in recent decades, which has been reflected in improved health care services and decreased child mortality so that children with disabilities are more likely to survive [2].

The awareness of the importance of oral health as a part of general health is becoming widespread [3]. However, dental care remains the most common unmet health care need [4,5]. In a study [6] conducted in the United States, most surveyed general dentists responded that they would not provide care for adults (67%) and for children (60%) with special health care needs (SHCNs) [6]. The willingness of general dentists to treat patients was significantly associated with the intensity of their educational experience [7]. Dental students had significantly higher expectations of their capability after attending a presentation on managing patients with SHCNs. However, hands-on experience had a significant positive relationship with their comfort levels [8]. General dentists who were prepared by hands-on experience in treating SHCNs did not consider their patients’ disability as an obstacle to providing treatment [9]. In fact, they were more likely to treat more of these patients and use behavior management techniques, compared to other general practitioners who were not well prepared by their dental education [5,6,9].

Earlier studies have revealed that dentists did not believe that their dental education prepared them to manage patients with SHCNs [5,6,9,10]. In the United States, 50% of dental school deans stated that adding a curriculum for treating patients with special needs was not a major priority at their schools. Most graduates from dental schools did not feel competent to treat patients with SHCNs [11,12]. In addition, most dental residences’ directors indicate that their residents require more training with these patients [7,12]. Less than one-half of dental programs in the United States provide hands-on experience with disabled patients [7]. Patients treated in dental schools typically do not require complicated behavior management techniques. Therefore, graduate dentists will continue to treat the same type of patients they were treating in dental school [7,10].

On investigating the oral health care needs of patients with SHCNs, a study in the United Arab Emirates showed extensive unmet needs for dental care in a SHCNs sample, compared to a healthy control group [8]. In one study [13] in three major cities in Saudi Arabia, more than one-half (53.7%) of the studied SHCNs children had no previous dental experience. The study revealed that 46.2% of caregivers of disabled patients reported that it was difficult to obtain dental care and 84.7% would only visit a dentist in case of emergency. The possible barriers to access in their opinion were fear of the dentist (52.1%), cost of treatment (48.7%), and inability to sit in the dental chair (28.2%), transportation difficulties (26.9%), distance to the clinic (18.5%), and unwillingness of the dentist to treat a disabled patient (16.8%) [3]. In another study in Saudi Arabia, nearly one-half of caregivers of autistic children did
not give a reason for not visiting a dentist, whereas 13.3% of caregivers stated that the reason was because of the absence of dental clinics that are specialized in treating children with SHCNs [13].

Data regarding dentists' attitude toward the care of disabled patients and their level of satisfaction of dental education in the matter have not been investigated thoroughly in Saudi Arabia. Such information seems necessary to tackle rising problems in access to oral health care. Therefore, the aim of this study was to explore the dentists' perception of dental education outcome and their level of satisfaction of the dental education in preparing them to provide care for patients with SHCNs.

Materials and Methods

The study was approved by the Ethical Research Committee-Faculty of Dentistry at King Abdulaziz University (Jeddah, Saudi Arabia). This was an exploratory cross-sectional study. Participants were dentists working in Jeddah, Saudi Arabia in 2014. According to the Ministry of Health Statistical Year Book, 2014 (http://www.moh.gov.sa/en/ministry/statistics/book/pages/default.aspx), there are approximately 2000 dentists working in Jeddah. A sample of 92 dentists was determined by using an online calculator for sample size for survey studies; it is available at http://www.surveysystem.com/sscalc.htm.

Two hundred questionnaires were distributed to dentists from all fields of dentistry. Responses from 108 dentists were available, resulting in a response rate of 54%. The study tool was developed after reviewing the literature on the subject [5,6,9].

The questionnaire was a self-administered questionnaire consisting of three components:

- The first component dealt with the dentists' perception of the quality of education outcomes. The responses to these statements were measured using a four-point Likert scale: "strongly disagree," "disagree," "agree," and "strongly agree." It consisted of three subsections. Subsection a included two statements about dentists' attitudes toward their capability of treating autistic patients; Section b consisted of three statements related to the dentists' attitude toward their capability of treating autistic patients; and Section c consisted of two statements about the need for more undergraduate and postgraduate education. A total score was calculated to evaluate their perceptions in the three sections. Calculation of the total score for the education outcome scale took into account the positive and negative statements.

- The second component of the study tool dealt with the level of satisfaction of the undergraduate and/or postgraduate dental education in providing care to patients with SHCNs. A four-point Likert scale (i.e., "very dissatisfied," "dissatisfied," "satisfied," and "very satisfied") was used to ask participants about their satisfaction with the educational programs.

- The third component asked participants to provide demographic data. Data were collected, coded, and analyzed using SPSS software version 18 (SPSS Inc. Released 2009. PASW Statistics for Windows, Version 18.0. Chicago: SPSS Inc.) Simple descriptive analysis presented as the mean and standard deviation were calculated for numerical data. The mean scores were calculated for each subsection. Descriptive data were expressed as percentages. Inferential statistic as the t test and the analysis of variance (ANOVA) were used to detect differences between categories at a significance level of P<0.05.

Results

The sample comprised 108 dentists. The mean age of the surveyed dentists was 29 ± 6.15 years. Seventy-three percent were graduates from Saudi Arabian dental schools. Approximately 90% of the sample had graduated in the years 1997–2012.

Table 1 demonstrates the dentists' perception about the quality of education outcomes, based on the three subsections: (a) special health care needs (SHCNs)-related education outcome and training environment; (b) their attitude toward their capability in managing autistic patients; and (c) the need for more education and training about patients with SHCNs. The table demonstrates the dentists' responses on a four-point Likert scale. For the interpretation of the results, scores were combined and expressed as "positive" responses (i.e., agree) and "negative" responses (i.e., "disagree"). It was determined that 59.2% of dentists disagreed to statements indicating that the undergraduate education prepared them for managing patients with SHCNs and 63.0% of dentists disagreed that the dental school clinics ensured a suitable environment for managing patients with SHCNs. However, 52.3% of respondents stated that they like to manage patients with SHCNs; 61.1% of respondents disagreed that they were knowledgeable and comfortable in managing patients with SHCNs and 63.9% of respondents disagreed that their dental team was knowledgeable and comfortable in managing patients with SHCNs. Moreover, 82.4% of respondents agreed that a dental undergraduate curriculum should contain more education about managing patients with SHCNs, and 77.8% of respondents agreed there was a need for more postgraduate training and continuing education to feel knowledgeable and comfortable managing patients with SHCNs.

Table 2 presents the relationship of the dentist demographic and basic information with the calculated total score of the three subsections of the study scale that measured the dentists' perception of the quality of education outcome. Table 2 reveals no statistical significant difference in these scores when comparing the studied sample by sex, postgraduate education, years of experience, and specialty. On the other hand, dentists who reported graduating from non-Saudi dental faculties reported a more positive perception about their education outcome and training environment (score, 4.96 ± 1.13), and their capability of managing patients with SHCNs (score, 7.80 ± 2.58) with a value of P=0.011 and P=0.039, respectively. Dentists who treated patients with SHCNs had an insignificant mean difference (score, 4.67 ± 1.31) in their attitude toward education outcome and training environment, compared to dentists who did not score (score, 4.32 ± 1.36) (P=0.176). Dentists who reported treating patients with SHCNs in their practice recorded a significantly higher mean perception score in their capability in treating patients with SHCNs (7.53 ± 1.97), compared to dentists who did not treat such patients (P=0.032). Dentists reporting treating patients with SHCNs recorded a significantly higher score in the concept of education prepared them for managing patients with SHCNs' and 63.0% of dentists disagreed to statements indicating that the undergraduate dental education areas (i.e., theoretical experience (5.05 ± 1.47), clinical experience, the patient pool, and teaching resources. It also shows that dissatisfaction in postgraduate education ranged 53%–69% in the same areas.

Tables 4 and 5 present the results concerning the dentists' level of satisfaction, based on the three subsections of quality of education outcomes in (a) SHCNs-related education outcome and training environment, (b) attitude toward the capability of managing autistic patients, and (c) the need for more education and training about patients with SHCNs.

Table 4 demonstrates a positive attitude toward the different education areas (i.e., theoretical experience (5.05 ± 1.47), clinical experience, the patient pool, and teaching resources. It also shows that dissatisfaction in postgraduate education ranged 53%–69% in the same areas.
The mean scores of dental physicians’ perception on the quality of outcome of education and training environment and their capability in treating autistic patients are presented in Table 2. The mean scores of education and training environment were found to be [5.23 ± 1.74], patient pool (6.21 ± 1.05), and teaching resources (5.31 ± 1.44), and the recorded P values are 0.000, 0.001, 0.000, and 0.000, respectively. Similarly satisfied dentist reported a significantly positive perception regarding their capability in managing autistic patients. On the other hand, dissatisfaction with the education aspects was reported by dentists requesting more education and training. This dissatisfaction was denoted by higher scores in all aspects, but was only significant in the clinical experience aspect (P=0.032).
In this study, 39 dentists reported attaining postgraduate education. Table 5 shows no statistical significant difference in the score of education outcome and training section between the satisfied and dissatisfied dentists with regard to postgraduate education aspects (i.e., theoretical experience, clinical experience, patient pool, and teaching resources; P=0.863, P=0.837, P=0.348, and P=0.300, respectively). In addition, dentists satisfied about the aforementioned aspects of postgraduate education recorded a higher mean score (i.e., positive attitude) concerning their capability to manage autistic children. These values were only significant in the theoretical experience and teaching resources with a recorded P value of 0.007 for each.

Dissatisfaction of the postgraduate education aspects was reported by dentists who felt a need for more education and training in the SHCNs field, as denoted by a higher score in all aspects of postgraduate education outcome and training environment (P=0.007*). The score was only significant with regard to clinical experience (P=0.012) and patient pool (P=0.004).

### Discussion

The Commission on Dental Accreditation set standards that prepare the next generations of dental professionals to care for people with limitations that extend beyond the known description of a medically compromised patient [14]. The Commission states that “Graduates

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**Table 3:** Satisfaction with dental education program regarding patients with SHCNs.

| No. | a. Outcome of education and training environment | b. Capability of treating autistic patients | c. The need for more education |
|-----|-----------------------------------------------|------------------------------------------|------------------------------|
|     | x     | SD  | P    | x     | SD  | P    | x     | SD  | P    |
| Theoretical experience | 41 | 67 | 5.05 | 1.47 | 4.20 | 1.08 | 6.74 | 2.18 | 6.73 | 2.08 | 6.25 | 1.86 | 6.48 | 1.35 | 0.459 |
| Satisfied | 0.000* | 0.033* | 0.495 |
| Dissatisfied | 6.14 | 1.87 | 6.88 | 1.17 | 0.080 |
| Clinical experience | 23 | 85 | 5.23 | 1.74 | 4.20 | 1.12 | 8.45 | 2.13 | 6.70 | 2.02 | 5.77 | 2.00 | 6.56 | 1.40 | 0.032* |
| Satisfied | 0.001* | 0.000* | 0.634 |
| Dissatisfied | 9.36 | 1.34 | 6.72 | 2.04 | 0.000* | 6.21 | 1.58 | 6.42 | 1.53 | 0.634 |
| Patient pool | 14 | 94 | 6.21 | 1.05 | 4.13 | 1.14 | 9.36 | 1.34 | 6.72 | 2.04 | 9.36 | 1.34 | 6.72 | 2.04 | 0.000* |
| Satisfied | 0.000* | 0.000* | 0.634 |
| Dissatisfied | 12 | 27 | 6.21 | 1.05 | 4.13 | 1.14 | 9.36 | 1.34 | 6.72 | 2.04 | 9.36 | 1.34 | 6.72 | 2.04 | 0.000* |
| Teaching resources | 30 | 78 | 5.31 | 1.44 | 4.07 | 1.12 | 8.54 | 1.93 | 6.53 | 1.88 | 8.54 | 1.93 | 6.53 | 1.88 | 0.000* |
| Satisfied | 0.000* | 0.000* | 0.790 |
| Dissatisfied | 13 | 26 | 4.40 | 1.17 | 4.47 | 0.98 | 7.70 | 2.26 | 6.39 | 1.75 | 7.70 | 2.26 | 6.39 | 1.75 | 0.053 |

**Note:** SD: standard deviation; x: mean SHCNs; special health care needs. *Significant at P<0.05

**Table 4:** The mean score of the education outcome scale, based on the “Satisfaction with Undergraduate Dental Education Regarding Patients with SHCNs” subscale.

| SHCNs | Undergraduate education | Postgraduate education |
|-------|-------------------------|------------------------|
|       | Total (N=108) | % | Total (N=39) | % |
| Theoretical experience | 41 | 31.96 | 62.04 | 17 | 43.59 | 56.41 |
| Satisfied | 67 | 6.29 | 3.95 |
| Dissatisfied | 23 | 21.30 | 78.70 | 13 | 33.33 | 66.67 |
| Clinical experience | 21 | 18.75 | 81.25 | 12 | 30.77 | 69.23 |
| Satisfied | 81 | 21.30 | 78.70 | 27 | 33.33 | 66.67 |
| Dissatisfied | 14 | 12.96 | 87.04 | 12 | 30.77 | 69.23 |
| Patient pool | 26 | 25.93 | 74.07 | 18 | 46.15 | 53.85 |
| Satisfied | 18 | 25.93 | 74.07 | 18 | 46.15 | 53.85 |
| Dissatisfied | 8 | 10.00 | 90.00 | 3 | 10.00 | 90.00 |
| Teaching resources | 30 | 27.86 | 72.14 | 18 | 46.15 | 53.85 |
| Satisfied | 78 | 72.86 | 27.14 | 72 | 72.22 | 27.78 |
| Dissatisfied | 22 | 27.14 | 72.86 | 21 | 27.78 | 72.22 |

**Note:** SHCNs; special health care needs
must be competent in assessing the treatment needs of patients with special needs" [15].

Surveys of health care providers are an important tool for assessing health care practices and the settings in which care is delivered [16]. Thus, the current research is a cross-sectional study that aim at exploring dentists' perception about their dental education outcome and level of satisfaction with undergraduate and/or postgraduate dental education in preparing them to provide care for patients with SHCNs. It targeted practicing dentists working in various health facilities in Jeddah City, Saudi Arabia in the year 2014.

Researchers distributed more than 200 questionnaires and were confronted with a low response rate. This level of response may indicate the low priority given to the dental health demands of patients with SHCNs and the extent of the gap in dentists' awareness about this increasing health problem. However, this response rate was higher than that of a study that recruited members of the Michigan Dental Association (32%), and members of the American Academy of Pediatric Dentistry (42%) [5].

In the current study, two-thirds or more of the dentists disagreed with the statements that their undergraduate education and the teaching environment prepared them well for managing patients with SHCNs. This finding is in accordance with Wolff et al. [17] Dao et al. [6] and Smith et al. [18] who reported that a small portion of participants in their studies reported that their undergraduate dental education prepared them for caring for patients with SHCNs.

The dentists' perception in the current study of the quality of the education is reflected by the negative attitude toward their capability in providing care to patients with SHCNs. This finding is in agreement with studies [6,17,18] reporting that the more positive the respondents felt about their dental education, the more they had positive attitudes and showed constructive performance in providing care for these patients.

The current study also revealed dentists' low perception of their capability in providing care to patients with SHCNs: more than two-thirds of respondents did not feel that the dental team was comfortable or knowledgeable when dealing with these patients. This finding is in accordance with the study by Wolff et al. [17] which surveyed students at five United States dental schools about their comfort levels treating people with mental retardation. Nearly 60% of students reported that they had little to no confidence in providing care, whereas 74.6% reported they had little to no preparation in providing care. The Wolff study showed that students who had experience working with patients with SHCNs reported greater capability in treating such people than did students who had no such experience.

The current findings pinpoints some concerns. First, if most respondents do not feel competent to manage patients with SHCNs, they would probably avoid including these patients' lists. Second, feeling unprepared to treat patients with special needs could interfere with the providers' professional self-assurance as they encounter these patients in their daily practices.

More than one-half of the dentists in the current study stated that they like treating children with SHCNs. This generally positive attitude exhibited by dentists reflected the reported affirmative attitudes of Saudi Arabian health care professionals (excluding dentists) concerning people with disabilities [19]. The researchers reported, in agreement with previous studies, that professionals who are more involved with disabled people seemed to have more affirmative attitudes. This involvement appears to diminish the anxiety of the unknown and delete undesirable stereotypes [19,20].

The constructive finding in the current study is that dentists expressed their consensus about the need for more education and their willingness to attain more education and training in the SHCNs field. Research has revealed that dental education has a vital impact on prospect providers' attitudes and performance when managing patients with SHCNs. Identifying the precise requirements of patients and warranting that future practitioners are properly equipped to respond to these challenges must be a main objective of dental education in this century [21].

The dentists' profiles of the current research, years of experience, and specialty had no reflection on perception of the quality of education outcomes. However, graduates of non-Saudi dental schools perceived their education outcome as more positive, compared to graduates of Saudi dental schools. These findings pinpoint the deficiency in the Saudi dental education and on-the-job training opportunities.

In the current study, one-half of the dentists were exposed to patients with SHCNs. In a Saudi study [3] of caregivers of patients with SHCNs in Riyadh, the investigators stated that the most common barrier to accessing dental care were fear of the dentist (52%), cost (48.7%), the patient's inability to sit in a dental chair (28%), and the unwillingness of the dentist to treat patients with disabilities (16.8%). The Saudi study concluded that an important factor leading to these barriers was the lack of dental professionals with advanced training in the management of patients with disabilities.

Dentist treating patients with SHCNs had a significantly more positive attitude about their capability to provide services and belief there is a need for more education. This finding is in accordance with that of Al Sarheen et al. [22] who reported that 94% of the dentists were generally positive toward sensory impairment in the society [22]. However, there were significant variations in attitudes, with a more positive score for dentists who had worked for 30 years or more and who had received their undergraduate training in Europe or North America. The differences may have been because of variations in dental schools' curriculum training and cultural backgrounds [22]. Other aspects such as adequate recompense and the special measures needed when caring for these patients may influence a dentist's decisions to provide care for patients with SHCNs [18].

Investigators of the current research revealed the dentist's dissatisfaction with components of dental education programs—namely, theoretical experience, clinical experience, patient pool, and teaching resources. This finding is in agreement with the 2005 study by Dao et al. [6] who found that most of their respondents felt unequipped to treat patients with SHCNs [6].

In 2007, standards for dental education program issued by the Commission on Dental Accreditation identified that "the right patient pool should be provided to offer an extensive range of patient experiences whose conditions may create a necessity to adjust standard dental routines to care for such patients" [23].

In the United States, an analysis of the educational strategies for preparing future dentists for managing patients with SHCNs before issuing accreditation standard revealed that dentists reported a lack of knowledge and indicated that they did not have sufficient clinical involvement with these patients [10]. A survey [24] of deans of dental schools in the United States, which asked about the strategies their schools use to instruct students about patients with SHCNs and plans.
for curricular changes, found that 91% of the programs tackled this area in a clinical setting. They also reported that 64% of the deans’ schools presented a special course in managing these patients [24].

In Saudi Arabia, Waldman et al. [25] reported the lack of a well-established dental education program covering patients with SHCNs. Interviewing the pediatric dentistry department heads of three governmental and two private dental schools in Saudi Arabia, the investigators found no structured undergraduate dental courses in any of the schools to ensure adequate preparation during the basic science foundation and clinical experiences providing dental care to children with SHCNs. Only postgraduate residents in departments of pediatric dentistry received lectures and clinical training for the care of patients with SHCNs as part the curriculum. However, these efforts were not followed up by studies to determine the effects.

Investigators of the current research compared the mean score of education outcome components according to the “Satisfaction with under and Postgraduate Dental Education Regarding Patients with SHCNs” subsection of the questionnaire. Satisfied dentists recorded a significantly positive perception toward the outcome of education in preparing them to manage patients and provide a sensitive training environment, and augmenting their capability in providing care to autistic patients. The satisfied dentists still felt the need for more under and postgraduate education and training.

Treating patients with special needs has been studied in several dental settings. In 2004, Casamassimo et al. [9] reported that general practitioners who experienced theoretical and clinical education in SHCNs in dental school significantly treated more of these patients and desired further guidance regarding the management of these patients. In addition, Wolff et al. [17] found that, as the students gained more experience with patients with special needs, they had a more positive attitude toward people with disabilities, greater appreciation of the patients’ dental needs, and greater awareness of their’ capabilities.

Inquiring dentists about their experience with postgraduate programs revealed that the studied sample was composed of mostly recent graduates with 63% of them reporting less than 5 years of experience. Thus only 39% of the sample had postgraduate studies. Dissatisfaction with the postgraduate dental education programs was high: the participants reporting dissatisfaction ranged from more than 56% in the theoretical component to 69% in the patient pool.

Conclusion

Several conclusions can be drawn from the findings of this study. First, dentists agreed that their dental education did not enable them to manage patients with SHCNs. Second, dentists reported a relatively low level of self-confidence when managing autistic patients. Third, a connection exists between the quality of dental education and the attitudes of proficiency among the studied sample. These findings challenge dental educators to enhance dental program outcomes. Fourth, the willingness of most respondents to attain educational activities to enhance their knowledge and skills is a positive sign for higher education authorities and pave the way for implementing future upgraded curricula.

Recommendations

In this study, the evaluation of educational outcome confirms the results of other studies conducted in various parts of the world. Based on our findings in this study, we strongly believe that the way to overcome this shortcoming is by providing a curriculum that prepares dental school graduates to be competent in assessing and managing patients with SHCNs. This curriculum should include theoretical knowledge, clinical experience, a patient pool, and competent well-experienced educators in the field of patients with SHCNs. It should include core skills in special care needs that are transferable through the entire dental curriculum and encourage a patient-centered approach in learning. This requires a strategy that includes short- and long-term plans. Short-term plans include training trainers in condensed courses that may be held locally or with international affiliation. A long-term plan should target future dental graduates to prepare them to be competent in managing these patients and set up subgroups to be an educator and a trainer in the future.

Involving medical colleagues is of paramount importance because the patients usually present with multiple and sometimes complex medical problems. Working in a team with medical colleagues is a very enriching experience and educational for both parties. Researchers of the current study experienced that once the medical colleagues are involved in such an exercise, a patient’s access to dental care is increased because of increased awareness of the treating physician about the importance of dental care, and it increased their personal commitment to a holistic approach that is enhanced through personal contact with the dental team. Thus, the proposed curricula should also adopt the development of joint medical and dental curricula modules that focus on the care of individuals with disabilities. These efforts should be expanded to include a national strategy to disseminate these curricula to all Saudi medical and dental schools.

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Disclosure

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