

# Satisfaction of Oral Health Education among Parents and Caregivers Regarding Children with Special Healthcare Needs in Riyadh, Saudi Arabia

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## ABSTRACT

**Aim and objective:** The aim of the study was to evaluate the satisfaction of an oral health promotion program among parents and caregivers of children with special healthcare needs (CSHCN) in Riyadh, Saudi Arabia.

**Materials and methods:** A digital survey using Google forms was used during an event to commemorate the World Disability Day. Stalls for oral health education and training were set up at Disabled Children Society, Riyadh, Saudi Arabia. Oral health education was carried out using written pamphlets, brochures, and videos. Live demonstration on dental models was used for tooth-brushing training using a powered toothbrush. Parents and caregivers were asked to complete a survey about oral health education during the event. An overall 189 parents and caregivers of CSHCN including 62 males and 127 females completed the survey. The responses were entered digitally prior to being evaluated.

**Results:** The respondents were parents and/or caregivers of children mostly having cerebral palsy followed by autism. Females consisted of 67% of the respondents. Eight-one percent of respondents rated it as highly satisfied. Ninety-one percent of the respondents perceived that the information provided was new for them regarding oral healthcare for CSHCN. Ninety-eight percent of respondents were likely to attend a similar event in the future.

**Conclusion:** Majority of parents and caregivers of CSHCN were highly satisfied by the oral health education during the event. They felt that they can take better care of the oral health of their CSHCN after the oral health education and training.

**Clinical significance:** Oral health among CSHCN is neglected when compared to children among the general population. CSHCN exhibit many barriers to oral health care. Oral health promotion among CSHCN is important as they have a high unmet oral health need.

**Keywords:** Children, Disabilities, Health promotion, Oral health, Special needs.

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## INTRODUCTION

Children with special healthcare needs (CSHCN) are those who have chronic physical, developmental, behavioral, or emotional conditions which require health care and related services of a type or amount beyond that required by children in general. CSHCN include patient groups with intellectual disabilities, physical disabilities, emotional, and behavioral disorders as well as medically compromising conditions and a wide variety of syndromes. There are a lot of conditions both congenital and developmental, with or without hereditary transmission that can make a child to be grouped among CSHCN.<sup>1</sup> Several studies have noted that CSHCN have poorer oral health and a higher unmet oral healthcare need when compared to children in general population.<sup>2-4</sup> Moreover, parents as well as caregivers of CSHCN do not seem to give much importance to oral health of such children as they are more concerned with the general health of the child.<sup>5</sup> In a way, this oral health neglect for such children results in high prevalence of both dental decay as well as gingival and other oral diseases in CSHCN.<sup>6</sup> There is a greater need for oral health care for CSHCN, this is further compounded by the fact that these children face greater barriers to oral health care. So there is a need to adopt several ways and levels of prevention that can help reduce the overall oral disease burden in CSHCN.<sup>7-9</sup> These measures include oral health promotion and education apart from applications related to primary prevention such as fluoride application and/or sealants.<sup>10-12</sup> World Health Organisation (WHO)

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has suggested health promotion to be one of the main public health strategies for improving oral health of individuals.<sup>13</sup> In view of the increased oral disease burden and greater barriers to oral health care experienced by CSHCN, it becomes more important to

implement oral health promotion strategies for such a group. This process of enabling people to increase control over and improve their health has shown beneficial results for people with certain kind of disability.<sup>14</sup> Apart from training regarding fundamentals of daily practices on oral health care of their children, parents and caregivers of CSHCN should be educated about the prevention of oral disease in children at an early age. This enables the parents as well as caregivers to be involved in the oral health care of CSHCN at an early stage whereby they can render the control of oral health care to the CSHCN at some stage.<sup>15</sup> Oral health care must be an essential part of the overall healthcare transition planning process for all CSHCN.<sup>16</sup> There is clearly a need to educate and train the parents and caregivers of CSHCN about oral health care. American Academy of Pediatrics (2002), published a Consensus statement on healthcare transitions for young adults with special health care needs whereby they advocate the implication of proper health care to maximize lifelong functioning.<sup>17</sup> The aim of this study was to evaluate the level of satisfaction about oral health education among the parents and caregivers of CSHCN at an event held for oral health promotion in Riyadh, Saudi Arabia.

## MATERIALS AND METHODS

The study was a cross-sectional survey that was conducted digitally using a google form with the help of iPads present at the oral health education stalls set up at the Disabled Childrens' Association, King Fahad Centre, Riyadh, Saudi Arabia to commemorate the World Disability Day on December 3, 2019. An overall of 189 parents and caregivers of CSHCN including 62 males and 127 females completed the survey. The participants consisted of parents and caregivers mostly of children having cerebral palsy followed by autism. Females consisted about 67% of the respondents. Oral health promotion was done with this group using oral health campaign during the event. Oral health education was carried out using written pamphlets, brochures, and videos. Live demonstration on dental models was used for tooth-brushing training using a powered toothbrush. [Table 1](#) explains the stations of oral health education for parents and caregivers of CSHCN. Each station had dental education models, videos, demonstrations, and oral health providers ready to answer any potential questions regarding the

oral health care of CSHCN. To make the activity interesting and keep the participants motivated, an oral health quiz was held for the participants. The participants were asked to fill in a digital survey about the satisfaction of oral health promotion at the event. Prior to the commencement of the event, permission was sought from the Disabled Children Association, King Fahad Centre, Riyadh for conducting the oral health promotion. Information regarding the event was sent to the parents and caregivers of children through the center using emails and SMS services. Information regarding the event was also disseminated via social media as well as advertising roll-ups at the center. Since no intervention was intended with the children, only participant information letters describing the oral health promotion were distributed to the parents and caregivers who wished to attend the event.

### Calibration of Information

All oral healthcare providers who were part of the oral health promotion met two weeks prior to the oral health promotion to finalize the materials and arrangements needed for the event. All information needed to be presented to the participants of the event was calibrated among the oral healthcare providers. Evidence-based oral healthcare guidance was prepared to be given to the participants using the evidence-based toolkit, "Delivering better oral health."<sup>18</sup> Again, all providers calibrated the oral health information one week prior to the event so that there was uniformity of oral health education. All materials including roll-ups, posters, brochures, and videos messages were reviewed and corrected. All information was prepared to be delivered in the native Arabic language. Uniformity of translation from English language was done using the reverse translation by two different translators. Validation of the questionnaire to be used among the participants was discussed among the oral healthcare providers and was approved to be used after certain corrections in language and content.

### Statistical Analysis

The data was entered and analyzed using the Statistical Package for Social Sciences (SPSS) version #20 program. The data were analyzed as percentage of the responses. Pie and bar charts were created depicting various responses from the participants. Four stations

**Table 1:** Describes the stations for oral health education and promotion at Disabled Children Association, Riyadh during the event to commemorate the World Disability Day on December 3, 2019

Station	Materials	Goals	Evaluation
1 Prevention of tooth decay and taking healthy nutrition	Dental caries models, educational posters, samples of healthy and unhealthy food, demonstrations for effective plaque control	Educating the parents and caregivers about the correct way to use the powered toothbrush, use other oral aids for plaque control, and recommend reducing sugars especially between meals	Satisfaction of the participants through an electronic questionnaire that has been filled
2 Oral trauma and bad oral habits	Dental trauma models, educational posters, soft drinks, and sweets to show undesirable foods	Educating people about different ways to prevent oral trauma and tooth wear and avoiding undesirable oral habits in CSHCN	Satisfaction of the participants through an electronic questionnaire that has been filled
3 Prevention of gum diseases and bad breath	Educational posters, mouthwash, dental floss, and periodontal models	Educating the people about the correct way to use dental floss in CSHCN. Mouthwash use for children above 7 years	Satisfaction of the participants through an electronic questionnaire that has been filled
4 Professional ethics and rights of the patient	Scientific posters and questionnaire on the rights of patients	Educating parents about their rights and duties toward oral health care of CSHCN	Satisfaction of the participants through an electronic questionnaire that has been filled

Each station had dental models, videos, demonstrations, and answers to any potential questions. To make the activity interesting and keep the participants motivated, an oral health quiz along with a lucky draw was held for all the participants

labeled numerically were setup for oral health education of the participants as shown in Table 1.

## RESULTS

The overall number of participants who filled the digital survey was 189. Majority of the participants were females, 127 (67.19%) while 62 males (32.8%) also completed the electronic survey as shown in Figure 1. The participants reported cerebral palsy (73.5%) as the main condition affecting their children, followed by autism (15.3%), Down syndrome (9%), and hearing impairment (2.1%) as shown in Figure 2. Majority of the group of people visiting these stations were highly satisfied (81%) at the level of information provided to them regarding the oral health care of CSHCN as represented in Figure 3. Vast majority (91%) of them agreed that they gained new information regarding the oral health care of CSHCN as represented

in Figure 4. Figure 5 shows that 98% of the participants expressed the desire to attend a similar event in the future.

## DISCUSSION

This study aimed at looking into the satisfaction and willingness about oral health education for CSHCN among their parents and caregivers at an oral health promotion event. Table 1 describes the various themes for oral health awareness and education. Apart from information regarding oral health care and prevention of oral diseases, the target group was also educated regarding the rights of the patients aiming at removing the social barrier for oral health care. Oredugba and Akindayomi in 2008 have advocated that the oral health promotion among parents and caregivers will improve oral hygiene conditions of such a group. They also noted that the oral hygiene of children enrolled in daycare centers was better than those enrolled in public specialized schools.<sup>19</sup> However, in a study of parental perceptions about dental/oral health among CSHCN, it was noted that CSHCN received preventive dental care but their parents reported more dental problems and fewer described their children as having good to excellent dental health.<sup>5</sup> There are a number of conditions that classify someone as CSHCN. Figure 2 shows different types of disabilities among the group at the Disabled Children Society, Riyadh as reported by the participating parents/caregivers. Some studies for similar groups in Saudi Arabia clearly point out to the deficiency of oral health care knowledge among parents as well as caregivers for Individuals with Special Health Care Needs (ISHCN),<sup>20-22</sup> however, one study in Riyadh city reported satisfactory oral health comprehension among parents of children with cerebral palsy.<sup>23</sup> This difference in findings may be attributed to the demographic variation among the parents/caregivers of CSHCN. Similarly, in another study, there was no difference between oral health statuses of children with cerebral palsy when compared to that of normally developing children.<sup>24</sup> However, studies conducted in Saudi Arabia as well as worldwide, it has been already established that ISHCN have greater oral unmet need when compared to the general population.<sup>3,16,24</sup> Moreover, studies with CSHCN in Saudi Arabia have confirmed that the oral health care among CSHCN is poorer and neglected when compared to the general population.<sup>25,26</sup> Even

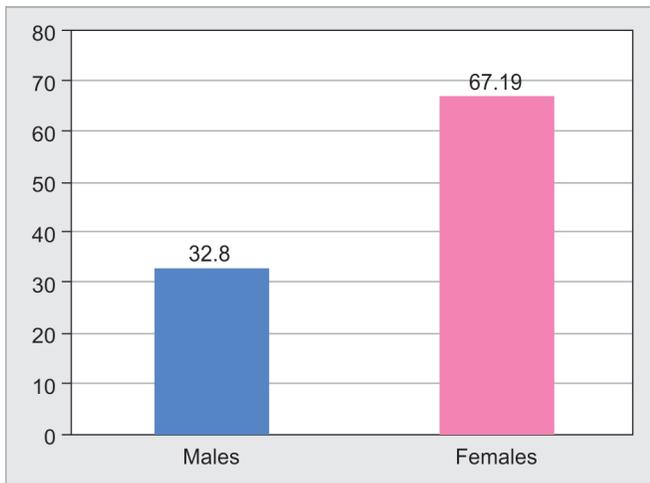


Fig. 1: Gender distribution among the parents and/or caregivers of the children who participated in the oral health promotion during the World Disability Day event held at Disabled Children Association, Riyadh. N = 189 (males = 62, females = 127)

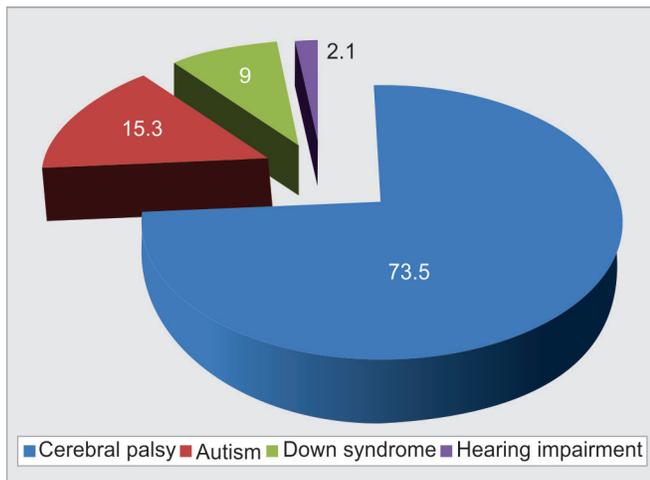


Fig. 2: Various types of disabilities as reported by the parents/and or caregivers of their children at the Disabled Children Association, Riyadh during the World Disability Day oral health promotion event

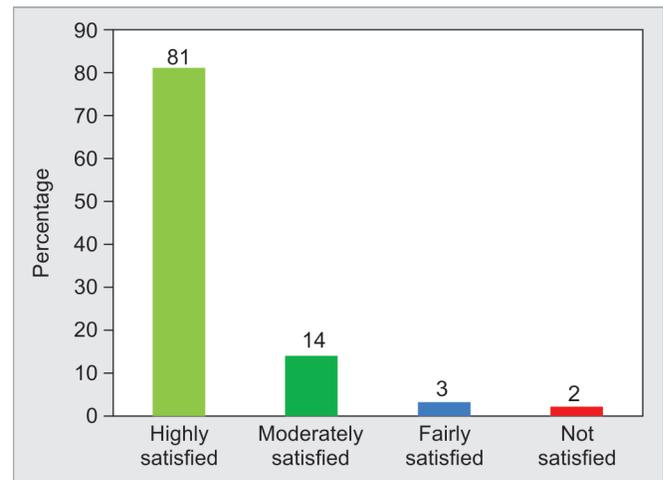
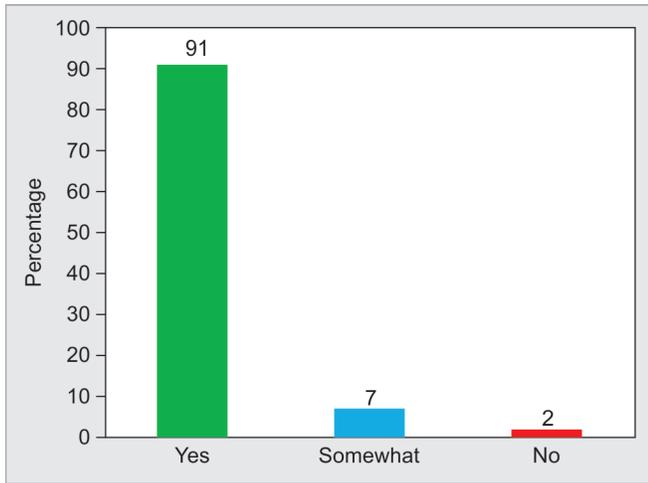
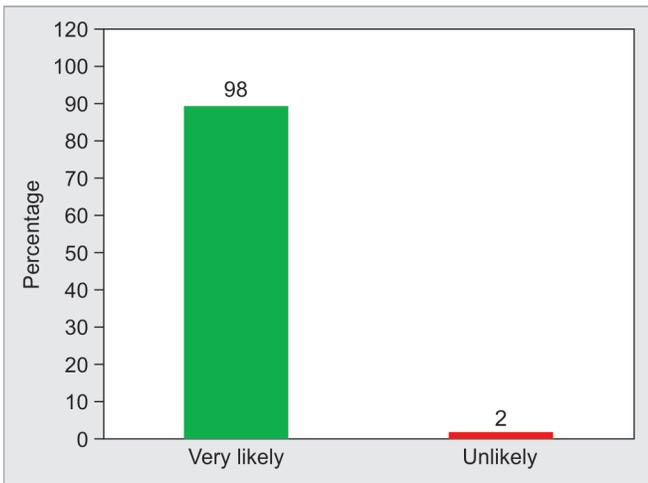


Fig. 3: Level of satisfaction for oral health promotion during the World Disability Day event among the participants at Disabled Children's Association, Riyadh



**Fig. 4:** Level of new information that the participants perceived to get for oral health care of children with disabilities during the oral health promotion event



**Fig. 5:** Willingness of the participants to attend a similar oral health promotion event in the future

there is a need for healthcare providers to be updated regarding oral health care of such a group.<sup>25,26</sup> Several studies among similar groups in Saudi Arabia clearly show the benefit and recommend preventive oral health measures for CSHCN.<sup>27-30</sup> However, the efforts for prevention of oral disease and oral health care have to be continuous and lifelong so that CSHCN have a better quality of life.<sup>3,4,6,21</sup> Majority of the sample among the parents/caregivers as shown in the Figure 1 are females. Studies have shown that such a group exhibit many barriers to oral health care, one significant barrier is the social barrier experienced by the parents of CSHCN particularly the females in Saudi Arabia. Alrubiyea points out to significant social barriers exhibited by Saudi society in terms of healthcare access.<sup>31</sup> Similarly, Battal in 2016 noted that there are many social barriers exhibited by ISHCN in Saudi Arabia.<sup>32</sup>

More than 80% of the participants as shown in Figure 3 were highly satisfied by the oral health promotion at the event. Apart from oral health promotion, there are lots of other solutions, ideas, and opinions that have been proposed to overcome barriers

experienced by CSHCN and to improve their oral health care.<sup>1,5,9</sup> This may include the provision of accurate time and remuneration, improving the information system, specialist referral's guides, increases in medical education and training.<sup>33-35</sup> However, such steps do not take into account the hindrances faced by CSHCN in the context of the oral healthcare system and prevention of oral diseases.<sup>30,31</sup> In one recent study in Saudi Arabia among ISHCN, it was concluded that caregivers of ISHCN faced a wide variety of barriers to oral health care that include physical accessibility of dental facilities, affordability, as well as lack of skills and knowledge of dental care providers.<sup>36</sup> Jürgensen and Petersen in 2012 noted that while number of well-known strategies are being applied, the full range of health-promoting actions is not being used globally. They suggested greater emphasis on integrated health promotion in place of narrower, disease- or project-specific approaches.<sup>37</sup> Figure 4 shows that more than 90% of the participants felt that the information provided to them was new. This is consistent with the earlier findings from other studies regarding the urgent need to educate the caregivers and parents of CSHCN.<sup>10,12</sup> Huebner et al. noted that the majority of the parents of CSHCN do not meet minimal recommendations and guidelines set for preventive dental care for their children, especially at home.<sup>38</sup> However, Wyne in 2007 found that parents of cerebral palsy patients in Saudi Arabia had satisfactory knowledge about the oral health care of their children.<sup>39</sup> Similarly, in another study in Saudi Arabia, it was found that most mothers had a positive attitude toward their children's oral health and were reasonably knowledgeable about it; however, further health education was required.<sup>21</sup> As per Figure 5, 98% of participants were likely to attend a similar program for oral health promotion about their children in the future. Preventive dental measures have been proven to be effective in reducing the burden of oral diseases.<sup>1,4</sup> Among various strategies that have been proposed to improve the oral health of ISHCN, it was found that educating the caregivers alone will not yield much effect.<sup>1,2,5,10-12,33,31</sup> However, when other forms of prevention are incorporated along with the oral health education of parents and/or caregivers, it does seem to improve the oral health as well as the quality of life for the ISHCN.<sup>17,21,28,29</sup> In the present study, authors assumed that the parents and caregivers of CSHCN felt that they can take better care of the oral health of their CSHCN after the oral health education and training.

## CONCLUSION

Within the limitations of the study, authors concluded that the majority of the group of parents and caregivers of CSHCN were satisfied with the oral health education at the event and would like to be part of further such initiatives. However, the limited sample size and one study center cannot be generalized over the whole population. Educating alone in terms of better oral health care may not yield better oral health benefits. Oral health promotion has to be sustained and tailored according to the specific special need of CSHCN.

## CLINICAL RELEVANCE AND RECOMMENDATIONS

Oral health education is a part of a preventive oral health program that can be implemented for the parents and caregivers of CSHCN. However, this needs to be a sustained effort and in conjugation with other preventive oral health measures to achieve the desired outcome.

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