Comparison among Parents of Special Needs and Healthy Children on their Motivation and Expectations of Their Child's Proposed Orthodontic Treatment: A Pilot Study

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Abstract

The purpose of this study was to compare parents' motivations and expectations of special needs and healthy children on proposed orthodontic treatment.

Questionnaires relating to pre-orthodontic treatment motivation and expectation were distributed to the parents of 21 special needs children (mean age = 11.76 ± 2.19) and mothers of 25 medically healthy children (mean age = 10.84 ± 1.21) from Sekolah Kebangsaan Indera Shahbandar (SKIS) in Pekan district, Pahang state of Malaysia.

All children lived at home with their parents. Majority believed their child did not need orthodontic treatment (66.7% special needs; 68% healthy children) and that their child did not understand the purpose of treatment (61.9% special needs; 52% healthy children). 57.1% of parents were not prepared to help their special needs child with the orthodontic appliances care. Improving dental health was perceived as the main motivation for parents to seek orthodontic treatment for their child (81% special needs; 88% healthy children) besides enhancing aesthetic. 66.7% of parents expected that treatment could improve their special needs child's quality of life, with 76.2% expected treatment may improve their child's function in society, and 71.4% believed this would reflect positively on the parents' own social acceptance.

The result from this survey could provide insight for orthodontists on the potential uptake of orthodontic treatment by parents of special needs children and their expectations of the outcome of treatment.

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Introduction

Special needs children are defined as those with serious chronic illnesses, developmental disability, mental retardation, emotional disorder, sensory or motor impairment, or other conditions that call for specialized care programs and interventions[1]. In Malaysia, as of May 2019, a total of 10,948 students with special needs were enrolled in schools, but the actual number could stretch further[2].

Special needs children have different facial appearance which may create less-than-desirable first impressions for their peers and adults. Face provides sources of verbal and non-verbal communication, and often portrays the first impression for the public. The appearance of teeth and smiles are important features determining the attractiveness of a face[3]. For instance, an individual with good dental appearance is thought to be more popular, socially acceptable, and happier[4]. The more attractive the facial appearance, the greater the likelihood of peer acceptance and being perceived as higher intelligence[5]. On the other hand, children with disabilities often experience stigma, social exclusion and rejection due to their physical appearance which may have important psychological and social effects[6].

Medical problems such as cerebral palsy, Down's syndrome, autism, attention deficit hyperactivity disorder and many other developmental or congenital conditions are some of the issues faced by these special needs children that can pose challenges to their parents and caregivers in many aspects of their day-to-day care and wellbeing. In addition, special

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needs children present with challenging malocclusions that may not only affect their facial aesthetics, but also their masticatory and speech function [7].

Malocclusions among the special needs children are often more severe and the etiology are more skeletal based rather than dental etiology alone [8]. These children usually become the subject of teasing and bullying in the school which could impose significant adverse emotional impact on the individual [9]. Due to the psychological, social and cultural influences, there is an increasing awareness of malocclusion and the demand for orthodontic treatment among special needs children and their families. Orthodontic treatment is usually aimed at improvement of the alignment and the occlusion, and thus the overall facial appearance. Treatment can often be complicated and prolonged, not only from the challenges posed by the severe malocclusions, but also from the behavioral management point of view.

Many special needs children are now generally accepted in the present-day society, possibly in part due to the increased awareness and enlightened attitude of public towards this group of children, and also their improved overall life expectancy [10]. Because of parents' desire for their child to be accepted readily into the society, and subsequently the possibility to be employed for self-sustainability, the demand for orthodontic treatment has increased in the hope that it restores their child's aesthetic and normal function.

Previous studies have looked into the comparison of opinions between the parents and their children regarding the orthodontic treatment need [11], however none has compared the motivations and expectations between parents of special needs and healthy children on the proposed orthodontic treatment. The purpose of the present study was to evaluate the motivation for and expectations of proposed orthodontic treatment for special needs and healthy children in the eyes of their parents in one suburban primary school, which was Sekolah Kebangsaan Indera Shahbandar.

Materials and methods

Ethical approval for this study was obtained from IIUM Research Ethics Committee (IREC 2020-137). The parents of 21 special needs children and 25 healthy children from Sekolah Kebangsaan Indera Shahbandar (SKIS), Pekan district of Pahang state in Malaysia were surveyed on their motivation for and expectations of orthodontic treatment for their children.

The survey was adapted from Becker et al., and consisted of 9 items as follows: 1) Medical conditions of the child; 2) Residence of the child; 3) Parents' perceived need for their child's uptake of orthodontic treatment; 4) Did anyone suggest orthodontic treatment for their child? 5) Did anyone influence the parents' decision in deciding to seek orthodontic treatment for their child? 6) Child's attitude to orthodontic treatment; 7) Readiness of parents in assisting orthodontic care of their child during treatment; 8) Parents' expectations of benefits of orthodontic treatment towards their child and themselves; and 9) Reasons of seeking orthodontic treatment for their child besides enhancing aesthetic. The results were grouped according to the issues evaluated and analyzed to determine the frequency of each variable.

Results

The demographic profiles of both groups of children were displayed in Table 1. The mean age of the special needs children was 11.76 years with a range of 8-14 years, whilst the mean age of the healthy children was 10.84 years with a range of 8-12 years. All healthy and special needs children in this study lived with their parents at home.

	Male	Female	Mean age (years)
Special needs children	12	9	11.76
Healthy children	9	16	10.84

Table 1. Demographic profiles of special needs and healthy children.

The medical conditions of the special needs children were listed in Table 2.

Intellectual disability	13
Autism	3
Down's syndrome	2
Dyslexia dysgraphia	1
Attention deficit hyperactivity disorder (ADHD)	1
Kidney disease	1
Total	21

Table 2. Distribution of medical diagnosis in the special needs children.

Parents' perceived need for their child's uptake of orthodontic treatment

Most of the parents (14 out of 21 in special needs; 17 out of 25 in healthy children) reported that they did not feel their children need orthodontic treatment. Only about one-third of parents feel otherwise.

Did anyone suggest or influence orthodontic treatment for their child

All special needs children, except one, never had any orthodontic treatment suggested to them, whilst four healthy children were suggested by close friends / relatives and school dental nurse / dentist to have orthodontic treatment. Two of these four healthy children subsequently underwent orthodontic treatment and their parents reported that they were influenced by school dental nurse and close relative (8%). None of the special needs children had any forms of orthodontic treatment.

Child's attitude to orthodontic treatment

More than half of the children (61.9% in special needs group; 52% in healthy group) would not understand the reasons of orthodontic treatment according to their parents. Only one (4.8%) special need child and two healthy children (8%) were highly motivated for orthodontic treatment.

Readiness of parents in assisting orthodontic care of their child during treatment

Each parent was asked on the willingness to assist the child in the home care during orthodontic treatment, such as brushing their child's teeth, appliance care and dietary control. 57.1% of the parents from special needs group were not prepared in taking full responsibility in their child's orthodontic care. In the contrary, 64% parents of healthy children group were willing to help their children in their orthodontic care.

Parents' expectations of benefits of orthodontic treatment towards their child and themselves

When the parents of both groups were asked on their expectations of proposed orthodontic treatment on their child, two-thirds of the parents of special needs group (66.7%) expected that orthodontic treatment would improve the facial and dental aesthetics, which improve the child's quality of life. Just over three quarter of them (76.2%) expected that their special needs children's function in society would improve following orthodontic treatment. The findings in the parents of healthy children were also similar, with 84% expected the treatment would improve the child's quality of life whilst 72% expected treatment improves the child's function in society. By enhancing their children's dental and facial appearance through orthodontic treatment, 71.4% parents of special needs group and 68% parents of healthy children group considered that their own social status would be upgraded.

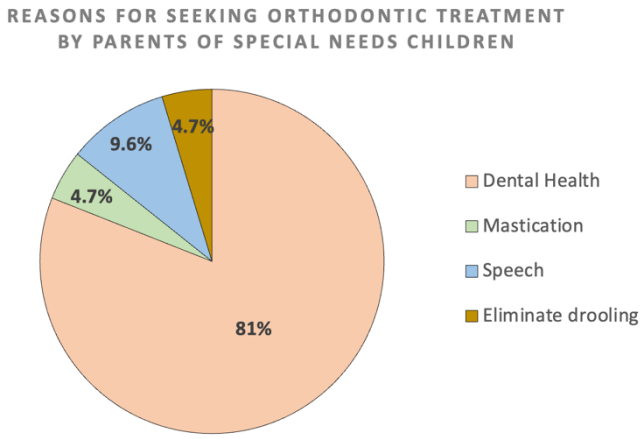

Figure 1. Reasons for seeking orthodontic treatment by parents of special needs children.

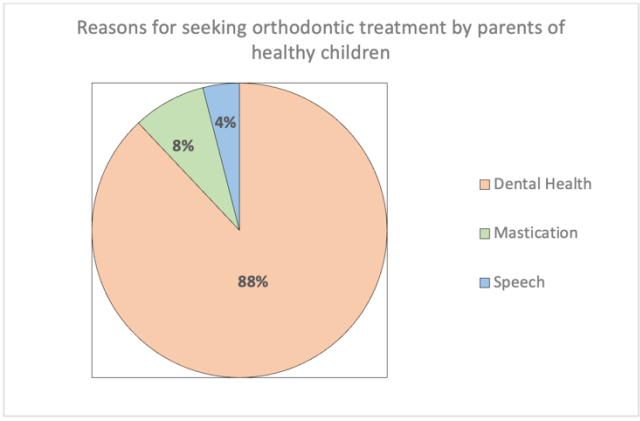

Figure 2. Reasons for seeking orthodontic treatment by parents of healthy children.

Reasons of seeking orthodontic treatment for their child

Besides enhancing facial and dental aesthetics, improving dental health was cited as the next most important factor by both groups of parents in seeking orthodontic treatment for their children (Figure 1 and 2). Interestingly, one parent of special needs child reported that elimination of drooling problem would be important for the family.

Discussion

About two-thirds of the parents did not feel their special needs children require orthodontic treatment. This could be due to the fact that malocclusion may not be perceived as a serious dental problem by most parents in comparison with other medical conditions the child may have. These parents might be put off by the longer orthodontic treatment time needed for the correction of the malocclusions. Interestingly, majority of the parents of healthy children also thought that their children need not require orthodontic treatment. It was reported that perceived need and attitude of parents was the most important factor for the uptake of orthodontic treatment, and this includes perceptual and social need of parents [13, 14]. Many factors play a role in determining parents' perceptions and attitudes towards seeking orthodontic care for their children. These include cost, socioeconomic status, availability of resources, literacy rate and knowledge on malocclusion. As these parents mostly reside within the Pekan town with potentially low household income and with little awareness of dental malocclusion, it is probable that their motivation for seeking orthodontic treatment for their children is lacking and believed orthodontic treatment would place additional burden onto the child and the family. However, severity of occlusal features assessed using Index of Orthodontic Treatment Need (IOTN) to ascertain orthodontic treatment need from the clinician's point of view (normative need) might be different and this is worth investigating in future studies.

Only one special need child with mental disabilities was suggested to have orthodontic treatment by close relative but was never brought for orthodontic treatment, whilst school dental nurse and close relative influenced only two parents of healthy children to request orthodontic treatment subsequently. Influences from other professional and non-professional alike could be an important motivating factor for parents to seek treatment for their children (external motivation). The results of this study compared well with Ackerman and Wiltshire which showed only 0.5% of parents planned to seek orthodontic care for their disabled children out of 41% of parents who were initially interested. Again, lack of knowledge in dental malocclusion could be the contributing factor, which could lead to the belief that oral health education campaign might provide information to the dental care practitioners and public related to problems in developing dentition and thus increases referral to orthodontists.

The child's attitude and motivation are important factors for achieving good cooperation during orthodontic treatment[12]. The present study revealed more than half of the special needs and healthy children did not understand the purpose of orthodontic treatment and they were not interested in treatment. Should they proceed with orthodontic treatment, this could result in iatrogenic damage brought about by inadequate oral hygiene. Abeleira et al., reported in their study that 80% of their healthy children did not cooperate with oral hygiene maintenance due to the lack of understanding of orthodontic treatment and its associated care.

Maintaining good oral and appliance hygiene could pose a challenge for patients, in particular special needs children as these individuals may not have the manual dexterity participating in oral hygiene and face many potential barriers to their appliance care [17]. Children with physical and mental disabilities have been shown to portray certain involuntary behaviours, such as drooling, finger sucking, visceral swallowing and lip biting that could adversely affect oral health [18, 19]. In addition, their muscle movement might not be well-coordinated and special needs children often find it difficult to follow instructions. These factors and others could be implicated as possible reasons why most parents of special needs children are not prepared to take the full responsibility for care and maintenance of their child's teeth, appliance care and diet, due to the greater attention and time required for the day-to-day care of their children general wellbeing.

The result of our study confirms with Birkeland et al., in which parents of both groups believe orthodontic treatment would improve the children's quality of life [11]. Aesthetic occlusion and facial appearance is crucial for the child's self-esteem, psychological well-being and ultimately acceptance by the society [12] and employment opportunities. Both groups of parents also believed aesthetic occlusion resulting from orthodontic treatment in their children improved their own social acceptance. This finding is supported by Becker, Shapira in which parents received positive reactions from peers, neighbors and close friends following the

completion of their child's orthodontic treatment.

It is widely reported that enhancing dental or facial appearance is the most important reason for seeking orthodontic treatment [21]. From this investigation, it appears that improving dental health is the second most important factor, besides aesthetics, for parents of both special needs and healthy children if they were to seek orthodontic treatment. A review by Winter et al., showed that the prevalence of malocclusion was higher in special needs than healthy children, with anterior open bite, posterior crossbites and Class III malocclusion being reported in the literature [23]. This imposes functional limitations, for instance difficulty in incising and ingestion of hard food. This could lead to the belief that parents seek orthodontic care for their children in the hope that it could achieve and promote normal occlusal growth and development leading to adequate functional occlusion. Becker, Shapira showed that orthodontic treatment could improve drooling problem in the special needs children, however this was not in common with our study with only one parent believed so.

This study has limitations that must be taken into considerations and the result needs to be interpreted with caution. The sample size in this study was small and therefore results could not be generalized to the population. This was due to the small number of special needs children in the primary school. Secondly, the motivations and expectations of the children for orthodontic treatment might be different from their parents who answered the questionnaire. However, the characteristic of the special needs children group meant that the involvement of parents is needed for the study questionnaire.

Conclusions

Although both groups of parents have low motivation for the uptake of orthodontic treatment for their children, majority of them have high expectations that orthodontic treatment would improve the child's quality of life and their own social acceptance. The result from this survey could provide insight for orthodontists in Pahang state of Malaysia on the potential uptake of orthodontic treatment by parents of special needs children and their expectations of the outcome of treatment.

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Declaration of Interest

The authors report no conflict of interest.

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