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Research Article

Assessment of Knowledge, Attitude and Performance of 2-6-Year Old Autistic Children's Parents Regarding Hospital Dentistry

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ABSTRACT

Background: It is difficult to perform dental procedures in autistic children, and parental involvement is necessary for successful hospital dental services. Since dentistry is typically an outpatient treatment, parents hardly accept the use of hospital procedures such as anesthesia. Therefore, in order to promote oral health in autistic children, this study was aimed to explore the knowledge, attitude, and performance of 2-6-year-old autistic children's parents with respect to hospital dentistry. This study was aimed to assess the knowledge, attitude, and performance of 2-6-year-old autistic children's parents regarding hospital dentistry in Isfahan, Iran during 2016-2017.

Materials and methods: This cross-sectional study was conducted with the parents of 100 autistic children aged 2-6 years selected from among the children of Isfahan Autism Treatment Centers and the Department of Autism in a Psychiatric Clinic affiliated to Khorshid Hospital in Isfahan. A self-administered questionnaire, including parental demographic information and 22 items on the assessment of knowledge, attitude, and performance of autistic children's parents regarding hospital dental procedures under general anesthesia, was completed by 100 parents. The raw data were analyzed by SPSS (version 23) software using chi-square test.

Results: A total of 100 parents of autistic children in Isfahan, with an average age of 37.4 ± 6.1 years, were recruited in this study. Of them, 16% were fathers and the rest were mothers. The results showed that 56%, 50%, and 3% of parents had poor knowledge about dental hospital services, dental complications, and hospital dentistry rules. Further, 51% of parents believed that general anesthesia was dangerous to their children. Moreover, 93% reported they would stay with their children in the dental room, and 53% of autistic children referred to a dentist for restorative services. In addition, 69% of children had little or no cooperation with the dentist. There was also a significant relationship between the knowledge, attitude, and performance of autistic children's parents regarding hospital dentistry and the parents' age and sex.

Discussions: The results showed that half of the parents had poor knowledge about hospital dentistry and its complications, while most of them were aware of the hospital dentistry rules. Most parents had a negative attitude toward general anesthesia

complications. Finally, this study showed that autistic children's parents had poor knowledge, attitude, and performance with respect to hospital dentistry.

INTRODUCTION

Autism is a mental illness defined as introversion or a type of depression in children. In the U.S., one out of 200 children suffers from autism [1]. Research has shown that autistic children are not different from normal children in dental structures. However, the tendency to eat sweet foods, weakness of the muscles around the mouth, the tendency to keep food bites in the mouth for a longer time, inability in tooth brushing, failure to report tooth pain (due to verbal and communicative problems), dry mouth caused by anti-autism, drugs, high frequency of vomiting, and attenuation of enamel increase the incidence of caries and gingival inflammation in these children [2-4]. Jabber et al. Showed dental caries were more prevalent in autistic children than in healthy children [5]. Vishnu et al. Also indicated a higher prevalence of caries (24%) than other oral diseases in the autistic children aged <6 years [6].

The oral health of these children needs special attention due to lack of social communications, deficient learning, and speech disorder [7,8]. Dental interventions are difficult to perform in autistic children [9]. Many of these children do not like to be touched or cannot sit quietly in a dental chair for a long time [10]. Marshal et al. reported that autistic children had poor cooperation in a dental office so that 65% of them were uncooperative and 35% were cooperative [11]. Therefore, they need to undergo general anesthesia or take sedatives during dental treatments [12]. Jabarifar et al. and Kaviani et al. showed that the scores of quality of life and fear were improved in autistic children in Isfahan after performing dental treatment under general anesthesia [13,14].

Hence, dental treatment is one of the challenges of families with autistic children [15-17]. Parents have the main responsibility for establishing good oral health [18,19]. Unfortunately, many parents do not have proper knowledge, attitude, and performance with respect to autistic children's dental procedures [9,11,20]. Kaviani et al. in Isfahan reported that it is necessary to provide people with more information about pharmaceutical methods of anxiety control during pediatric dental treatment [21]. Razavi et al. in Qazvin found that mothers had low acceptance of general anesthesia (33%) for dental treatments [22]. Custro et al. showed that autistic children's parents had the poor acceptance of general anesthesia during dental treatments [9].

Therefore, given the high prevalence of oral problems in autistic children [5] and shortage of studies and information about hospital dentistry in these children, it is necessary to determine the frequency of knowledge, attitude, and performance of autistic children's parents regarding hospital dentistry in order to promote their knowledge, attitude, and performance and improve oral health in these children. This study was conducted to investigate the knowledge, attitude, and performance of 2-6-year-old autistic children's parents with respect to hospital dentistry

MATERIALS AND METHODS

This descriptive, cross-sectional study was carried out in the School of Dentistry, Isfahan University of Medical Sciences during 2016-2017. A total of 100 parents, if they were willing, were recruited in this study from among the parents of 2-6-year-old autistic children in autism treatment centers of Isfahan, Iran during 2016-2017. After referring to an autism center in Isfahan, Iran (Yavaran Zeinab charity) and autism department of a psychiatric clinic affiliated with Khorshid hospital in Isfahan and making the required arrangements, the researcher randomly selected 100 children from among the 2-6-year-old autistic children. Having provided the required explanations to their parents, a parent of every child (either father or mother) was asked to complete a questionnaire related to the knowledge, attitude, and performance of autistic children's parents on hospital dentistry and return it the given center the next week. In case of lack of response to more than 20 questions or unwillingness to continue cooperation in the project for any reason, the parent was excluded from the study and replaced by another parent. Data were collected by a self-administered questionnaire, including 22 items in three parts of knowledge (7 items), attitude (7 items), and performance (8 items). This questionnaire is the translated version of a similar questionnaire in Kuwait, with modifications applied to Iran, whose validity and reliability have been confirmed (Cronbach's alpha: 0.76 and Kappa coefficient: 0.8). For easy analysis of data, the 22 items of the questionnaire were classified into nine categories: knowledge of hospital dental services, knowledge of hospital dentistry

complications, knowledge of hospital dentistry rules, attitude toward hospital dental services, attitude toward hospital dental complications, parents' performance in hospital dentistry, attendance or unattendance of the child's companion during dental treatment, frequency of reasons for referral to a dentist, and cooperation of an autistic child during dental treatments.

The validity of the questionnaire was analyzed and confirmed by 15 dental specialists. The reliability of the knowledge items by the split-half method, attitude items by Cronbach's alpha, and performance items by the test-retest method was confirmed in 20% of samples. The demographic data of parents were also collected by a checklist. The parents' knowledge was classified into three categories of "good", "poor", and "very good". Their attitude was assessed by 7 items with "yes", "somewhat", and "no" responses and their performance evaluated by 8 items. Finally, the collected data were fed into SPSS-23 software and analyzed by descriptive statistics, including frequency distribution and percentage, and inferential statistics, including t-test and chi-square.

RESULTS

Table 1: Frequency distribution of knowledge of autistic children's parents about different domains of hospital dentistry.

Knowledge domain	Knowledge level	Number	Percentage
Hospital dental services	Poor	56	56
	Good	30	30
	Very good	14	14
Hospoital dental complications	Poor	50	50
	Good	34	34
	Very good	16	16
Hospital dentistry	Poor	3	3
	Good	49	49
	Very good	48	48

A total of 100 autistic children's parents, with a mean age of 37.4 ± 6.1, were included in this study. Their knowledge, attitude, and performance with respect to dental treatment under general anesthesia were investigated. Of the participants, 56% had poor knowledge about hospital dental services, 50% about hospital dental complications, and 3% about general anesthesia rules (Table 1). The parents' knowledge of hospital dental services showed no significant difference (p=00.132), but mothers had better knowledge of hospital dental complications (p=0.007) and fathers had better knowledge of general anesthesia rules (p=0.014). Further, the parents aged <30 years showed the highest percentage of good knowledge (p=0.000) and those aged >40 years indicated the highest percentage of poor knowledge (p=0.002) about hospital dental services and hospital dental complications, while parents aged 30-40 years showed the highest percentage of poor knowledge about general anesthesia rules (p=0.024).

Table 2: Frequency distribution of attitude of autistic children's parents toward hospital dentistry.

Question	Attitude		
	Yes (%)	Somewhat (%)	No (%)
1. I believe hospital dentistry is a conventional method for behavior control during dental treatment.	34	41	25
2. I believe hospital dentistry is a safe and secure method for behavior control during dental treatment.	33	41	26
3. I believe general anesthesia is necessary for providing dental services to my child.	37	30	33
4. Do you think general anesthesia has a negative effect on your child?	31	38	31
5. Do you think general anesthesia is dangerous and has to be used a little?	51	29	20
6. Do you think dentists should use other methods of anesthesia rather than general anesthesia in the operation room?	60	25	15
7. Is general anesthesia is an acceptable method among Iranian dental society?	57	36	7

The results of the attitude of the autistic children's parents toward hospital dentistry are presented in (Table 2). As for the items 1 and 2, fathers showed a higher percentage of agreement (p=0.035) than mothers (p=0.041), but the statistical distribution of other results indicated no significant difference in the parent's gender. The results of parents' attitudes according to age showed a significant difference in most cases (Table 3).

Moreover, only 18% of parents stated their children had undergone dental treatment under general anesthesia, 90% of whom were completely satisfied with the outcome of dental treatment under general anesthesia. Further, 89% of parents reported they always accompanied their children during dental treatment, 93% preferred to stay with their children in the

dental room, and the rest were not inclined to do so. Fathers were more significantly inclined to accompany their children to dentistry (p=0.000), while mothers were more significantly willing to stay with their children in the dental room (p=0.044). In addition, parents aged 30-40 years had better performance in both mentioned domains (p=0.000).

Regarding the reasons for referral to dentistry, the autistic children's parents reported 53, 30, 14, and 3% of their children had referred to a dentist for restorative services, oral examination, other services, and preventive services, respectively (Figure 1).

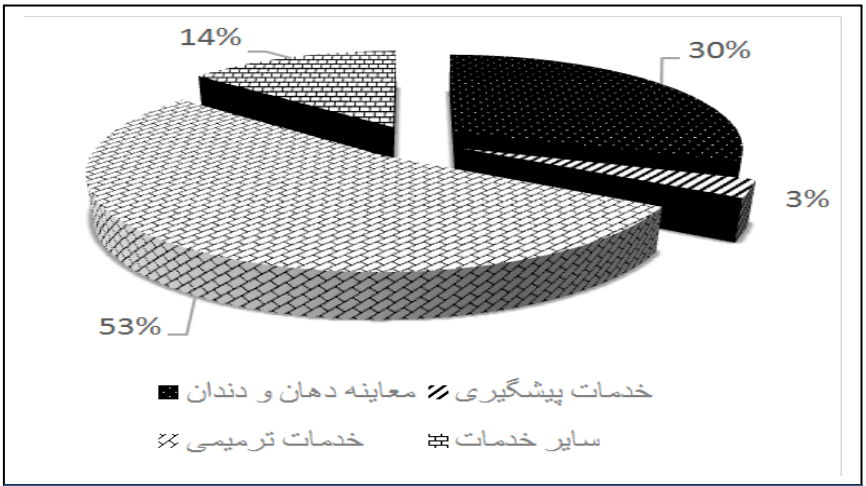

Figure 1: Frequency distribution of reasons for referral of autistic children's parents to dentist.

Table 3: Frequency distribution of attitude of autistic children's parents toward hospital dental services according to age.

Questions no	Age range (year)	Yes		Somewhat		No		P-Value
		Number	Percentage	Number	Percentage	Number	Percentage	
1	<30	7	70	0	0	3	30	0/005
	30-40	24	36/9	25	38/5	16	24/6	
	40>	3	12	16	64	6	24	
2	<30	7	70	0	0	3	30	0/043
	30-40	20	30/8	28	43/1	17	26/2	
	40>	6	24	13	52	6	24	
3	<30	3	30	3	30	4	40	0/002
	30-40	31	47/7	21	32/3	13	20	
	40>	3	12	6	24	16	64	
6	<30	6	60	0	0	4	40	0/020
	30-40	36	55/4	18	27/7	11	16/9	
	40>	18	72	7	28	0	0	
7	<30	7	70	3	30	0	0	0/154
	30-40	41	63/1	20	30/8	4	6/2	
	40>	9	36	13	52	3	12	
4	<30	0	0	3	30	7	70	0/001
	30-40	19	29/2	32	49/2	14	21/5	
	40>	12	48	3	12	10	40	
5	<30	3	30	0	0	7	70	0/000
	30-40	30	46/2	29	44/6	6	9/2	
	40>	18	72	0	0	7	28	

As for the cooperation of autistic children in dental treatments, parents reported 41, 28, 17 and 14% of the children had low, no, moderate, and high cooperation with the dentist, respectively. For the feeling of autistic children in the dental office, their parents reported 46, 26, 19, and 9% of children were anxious, scared, angry, and happy, respectively. By parents referring to hospital dentistry for their autistic children, 66.7, 16.7, and 16.7% reported written consent, oral consent, and both written and oral consent were taken from them in the hospital, respectively.

DISCUSSION

Autistic children's parents play a key role in meeting the oral health of their children. Convincing the parents that these children need hospital dental services and general anesthesia is highly important because it seems that parents' poor knowledge and performance and negative attitude lead to poor oral health and reduce the quality of life of these children. Our study showed autistic children's parents had poor knowledge about hospital dentistry and its complications because most of them had no information about the oral needs and hospital dental services for their children. This lack of knowledge prevented the parents from referring to dentistry due to the uncooperativeness of their autistic children in dental treatments and consequently put their oral health at risk. The parents aged >40 years had significantly higher knowledge about these two domains, which might be due to their old age and outdated information. Lack of knowledge and fear of hospital dental complications can have parents make incorrect decisions. Our study also indicated most parents had good and very good knowledge about hospital dentistry rules. Fathers had significantly more knowledge than mothers in this regard, which might be because of more familiarity of men with legal issues in society.

About two-thirds of parents believed the use of general anesthesia for dental treatment was not a common behavior control method in children, was not safe, had negative complications, and was not an appropriate method for their children, so they preferred substitute methods. This attitude in parents can be due to lack of knowledge about thetarget group of hospital dentistry and specific conditions of autistic children, incorrect information about the complications of general anesthesia, and lack of information about its advantages. It seems that this negative attitude is mostly due to fear of general anesthesia in children. The parents aged >40 years had a significantly more negative attitude than other age groups. Custro et al. showed that autistic children's parents had a higher level of acceptance to use simple communicative techniques than general anesthesia to manage their children's behaviors during dental treatments [9]. Razavi et al. reported general anesthesia had the lowest rate of acceptance among the mothers [22], confirming the results of our study. About half of the parents believed hospital dentistry is an acceptable method among the Iranian dental society. This result indicates the necessity of promoting the knowledge of parents and society about hospital dentistry.

The negative attitude of autistic children's parents toward hospital dentistry leads to fulfilment of the pediatric dentistry needs and diminished oral health. It also makes the patient function inappropriately in this regard and face the severe limitations of family and society regarding hospital dentistry for these children.

Despite the low percentage of parents that had used hospital dentistry for their autistic children, the majority of them (90%) were satisfied with the results of hospital dentistry. Pooreslami et al. showed that more than 80% of parents were satisfied with this treatment modality; even 96% of them reported a score of 8-10 for their satisfaction [23]. Eshghi et al. reported an above-average level for overall satisfaction with dental treatment under general anesthesia among more than 80% of parents [24], which was in line with our findings.

The present study showed a good performance for the autistic children's parents about the physical support and companionship of their children while doing dental treatments. This performance indicates the parents' knowledge of and sensitivity to the specific needs of these children. In this regard, mothers had a significantly better performance than fathers, indicating more support for autistic children on the part of mothers and that mothers bear more burden in raising these children.

Most autistic children (53%) reported restorative services as a reason for dental referral, indicating the high prevalence of dental caries in autistic children. Only 3% of these children referred to a dentist to prevent oral diseases, which is a lower

rate. Owing to the specific conditions of autistic children, which increased the incidence of caries and other oral diseases, and the difficult application of restorative treatments, it is highly important to prevent oral diseases in these children. Hence, it is essential to pay special attention to the training programs for parents regarding preventive dental services. Jabber et al. showed the prevalence of dental caries was higher in autistic children than other children, which was possibly due to poorer oral health in these children [5], confirming the results of our study. Further, Vishnu et al. reported the prevalence of dental caries in the autistic children aged <6 years was 24% higher than other oral diseases [6], which is in line with the findings of our study.

About 30% of parents found their child's uncooperative during dental treatment and about 40% found them low-cooperative. This necessitates the use of advanced behavior control methods for these children during dental services. Marshal et al. reported poor cooperation for autistic children in dental offices (11), which in agreement with our results in this study.

Approximately half of the parents described their children anxious, scared, and angry during dental procedures, respectively. This is indicative of autistic children's high anxiety and fear of dental procedures and therefore their uncooperativeness. This result necessitates the use of behavior control methods in these children. Kaviani et al. found that dental fear was significantly reduced in children undergoing dental procedures under general anesthesia [21].

It should be noted that it was not possible to make an exact comparison between the results of this study and those of other studies due to the absence of similar domestic or international studies. Yet. Our study showed most autistic children's parents had sufficient knowledge, relatively poor attitude, and inappropriate performance with respect to hospital dentistry. This is indicative of a lack of knowledge about the significance and necessity of general anesthesia for dental procedures when necessary. It seems essential to enhance the knowledge of autistic children's parents about general anesthesia and its indications, advantages of hospital dentistry for autistic children, and the importance of counselling with parents of children requiring or referred to hospital dentistry. Increasing the knowledge of parents in this regard can improve their attitude and therefore their performance in this regard. Improving the performance of parents in hospital dentistry can also promote the oral health of autistic children.

A limitation of this study was incorrect responses of parents to the questionnaire items, which was compensated for by full justification of the interlocutors by the researcher. Future studies are suggested to investigate other possible factors, such as parents' education and job, child's rank in the family, etc., which are involved in the knowledge, attitude, and performance of autistic children's parents regarding hospital dentistry, because these factors can determine the etiology of poor knowledge, attitude, and performance of autistic children's parents with respect to hospital dentistry.

CONCLUSION

The findings of this study showed half of the parents had poor knowledge of hospital dentistry and its complications, while most of them were aware of the hospital dentistry rules. Most of the parents had a negative attitude toward undergoing general anesthesia and its complications. Finally, the results indicated that autistic children's parents had poor knowledge, attitude, and performance with respect to hospital dentistry.

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