



RESEARCH ARTICLE

AWARENESS AND EXPERIENCE OF THE DENTISTS IN SAUDI ARABIA ABOUT AUTISTIC DISORDER

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Abstract

Autism spectrum disorder (ASD) is a common neuro-developmental disorder in children who require special oral health care. ASD Children with uncontrolled body movements, impaired social interaction and intellectual disabilities are commonly treated in the normal dental clinics. The dental professionals in our region did not cover any previous training about this disorder during their studies and they have different experiences dealing with this disability. In this study, we aim to study dentists' awareness and experiences in dealing with the ASD children in the south region of Saudi Arabia.

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Introduction:-

Autism spectrum disorder (ASD) is a common neuro-developmental disorder in children. Autism disorder (AD) was first explained by Leo Kanner in 1943. The prevalence of autism is variable and the reported median of cases in the United States is of 21.6 per 10,000. In Saudi Arabia, the prevalence of ASD is still undetermined. However, the diagnosed cases of autism in 2002 were 42,500.

Children with this disorder experience difficulties with language and speech, motor skills, behavior, memory, learning and other neurological functions and as a result of that they live a dependent life and require special oral health care. ASD Children with uncontrolled body movements, impaired social interaction and intellectual disabilities are commonly treated in the normal dental clinics. Self-injuries as a result of the unpredictable movement can be among of the most challenges.

There is less focus in educational sessions during the whole journey of the studying of the Dentistry qualification on the unique oral health practices that required for this disorder. Therefore, there is a lack of previous awareness of the dentists about the complex cases. Since the dental professionals in our region did not cover any training about this disorder during their studies, they have different experiences dealing with these disabilities that could impact the management. While the symptoms and behaviors of ASD disabilities often change from one to another child,

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diagnosis and treatment of this disorder can be difficult. The treatment often involves a combination of professional therapy, pharmaceuticals, and home/school based programs.

Objective:-

To investigate and measure the awareness of the dentists about autistic disorder children and their dealing with this kind of patients.

Method:-

Participants:

The study will be conducted on 300 dentists in the north and south regions of Saudi Arabia including Najran, Aseer and Jazan.

Type: An electronic survey consists of multiple parts explained as follow:

1. Part one: general information about the participants.
2. Part two: will include a designed questions about Autism (Answers will be ticked from choices).
3. Part three: we will be testing how the dentist is dealing with Autistic child. (Yes/NO answers and choices)

The following table is showing some of the aspects that we will cover:

Part I	Dentist information	Age – Gender-Degree – Experience
Part II	About Autism	Meaning , Signs & Symptoms , Treatment
Part III	Dentist dealing with Autistic child	-Do you treat any autistic patient? How many? Do you like? -How many autistic patient you referred to another dentist? -How many patients you refused? -Did you receive enough information about autism before? -Do you think the autistic patients have more dental problems than other? -Do you scare to treat autistic patient? -Do you think the behavior of child will affect the success of treatment? -Do you think the movement of autistic child will injure him? Did you experience that? How many times? -Do you need more training to know how to deal with them?

Introduction:

Autism is a broad term used to define a multiple neuro-developmental disorder that affects children in as early as 3 years of age. Since the condition was first described in 1943 by Leo Kanner, there has been uncertainty over the most appropriate terminology used. More and more terms were reported in literature in an effort to find a conclusive scientific term to describe this condition; Autism, Autistic syndrome (AS), Infantile Autism (IA), Childhood Autism (CA) Autistic disorder (AD) and most recently and most widely used in the literature Autistic Spectrum Disorder (ASD)¹.

Up to now the cause of ASD is not evident. However, scientists believe both genes and environment play a role in causing the multiple neuro-developmental disturbance. Some theories have reported that children with ASD have abnormal levels of serotonin or other neurotransmitters in the brain or have irregularities in several brain regions that affect normal development. A recent epidemiological studies shows that, risk of autism is associated with several genetics and prenatal factors, including advanced parent age and diabetes in mothers during pregnancy. Other proposed causes, such as childhood vaccines, are controversial and lack convincing. Males, siblings of those with autism and children with other developmental disorders considered to be at a higher risk for autistic disorders. However, there is no prevalence reported among a specific race, socioeconomic status or education level of parents.

Proper diagnosis of ASD is very important, since confusion may result from inappropriate and/or ineffective treatment. The expressivity varies greatly but usually follows a general pattern. The "signature" feature of autistic children is impaired social interaction, where children avoid eye contact and seem to lack any type of sympathy. Autistic children may express mental retardation, abnormal emotional, social and linguistic development, poor muscle tone, poor coordination, as well as visual and hearing impairment. It's important to mention that not all symptoms are present in all autistic children. Many children with autism engage in repetitive movements such as rocking and become obsessive while performing tasks or playing with objects in

Specific order. In addition, most children who have autism experience hypersensitivity to sound, touch or other sensory stimulation. Autistic children often show behavioral disturbances, such as self-mutilation and aggression, psychiatric symptoms, and seizures which necessitate the administration of multiple medications to help the affected individual participate effectively in the educational and rehabilitative process. It has been reported in many studies that the male to female ratio is 4:1 with more severe symptoms are exhibited in females.

Medication often is used to treat different behaviors that interfere with the regular life of autistic children. It has been reported that, these drugs have no effect on the person's ability to socialize or communicate but are effective in controlling some of the associated symptoms of the disorder: hyperactivity (for example, methylphenidate), repetitive behaviors (for example, fluoxetine and sertraline) and for aggressive behaviors (for example, carbamazepine, valproate, risperidone and olanzapine).

The prevalence of autism or ASD is hard to establish because of the problem of diagnosis. Most recent reviews of epidemiology around the world estimate a prevalence of one to two cases per 1,000 for autism, and about six per 1,000 for ASD. In the United States, a published report in 2008 indicated that approximately 3.5 out of every 1,000 children have been diagnosed with ASD. In the United Kingdom the prevalence in 2006 was reported as 116 in 10,000 or 11.6 in every 1,000 for all autism spectrum disorders

In the Middle East, studies of autism frequency have been particularly rare. In Saudi Arabia an extensive review of the literature revealed no specific numbers regarding diagnosed cases of autistic children reported. Most of the estimate information about the prevalence and distribution of Saudi autistic children was provided

Through the Saudi Autistic Society which was established in 2003. In 2004 Yazbak reported that the estimated number of autistic children in Saudi Arabia was 42,500 cases. However, no reference was made as to how this estimate was obtained. A recent rough estimate was produced in 2009 as 18 per 10,000. The authors reported that, most of the patients were diagnosed in an older age and they were a production of consanguineous marriages.

Therefore, the purpose of this study is to report a base line information about Characteristics, Diagnosis Age of diagnosis, Disabilities, Medications and Dental experiences of a Group of Autistic Children in three major regions of Saudi Arabia

Methods and Materials:-

A self-administered questionnaire was formulated in simple Arabic language and presented to a group of parents with autistic children visiting the dental school. The modified version of the questionnaire was distributed to three major branches of the Saudi Autistic Society (SAS) in three different regions of the Kingdom of Saudi Arabia during the 2009 National Autistic Children's celebration day. The three selected regions were Central, Eastern and Western region "they encompass the majority of the Autism rehabilitation centers according to the SAS website ". Three cities were selected to represent the three regions of the Kingdom, Riyadh to represent the Central region, Dammam to represent the Eastern region and Jeddah to represent the Western Region.

The questionnaires addressed the parents of the children invited to attend the event in the three centers. The questionnaires included demographic information (age, gender, and region) the questionnaires also requested the age of the child when s/he was professionally diagnosed with autism, semi-autism, or any kind of Autistic Spectrum Disorder (ASD), the child's general health, and if the child has any kind of disabilities. In addition, Questions regarding the types of medications used, previous dental experiences and methods of dental treatment was included.

Every family was assured of the confidentiality of the collected data and that the resultant information would be used only for the research purposes. The questionnaire was distributed to all the families attending the celebration days in

the three centers with the help of the staff members in each center. All the answered questionnaires were collected by the author. The collected data were entered in the computer using Statistical Package for Social Sciences (SPSS version 13) software for frequencies distribution of all variables in number and percentage.

Results:-

The questionnaire was equally distributed to the three major centers in the representing cities of the selected regions (Central, Eastern and Western). The total questionnaires distributed was 600 with equal share for each center. A total of 324 questionnaires was collected with an overall response rate of 54% (Table 1). The highest response was from the Western region with 67% followed by 48% and 47% from the Eastern and Central regions respectively. The ratio of male to female participants was 4 to 1. (Table 2).

Most of the children (76.2%) participated in the study were diagnosed with autism or ASD before the age of 5 years whereas, 20.7% were diagnosed before the age of 10 years and only 3.1% were diagnosed after the age of 10 years (Table 3). The percentage of children diagnosed before the age of five in the three regions were approximately similar. The percentage of children diagnosed between the age of 5 and 10 were higher in the western region (23.1%) followed by the central region (20.2%) and the lowest percentage was observed in the Eastern region (17.7%). The highest percentage of children diagnosed at a late age of 10 years and more were observed in the Eastern region (5.2%) (Table 3).

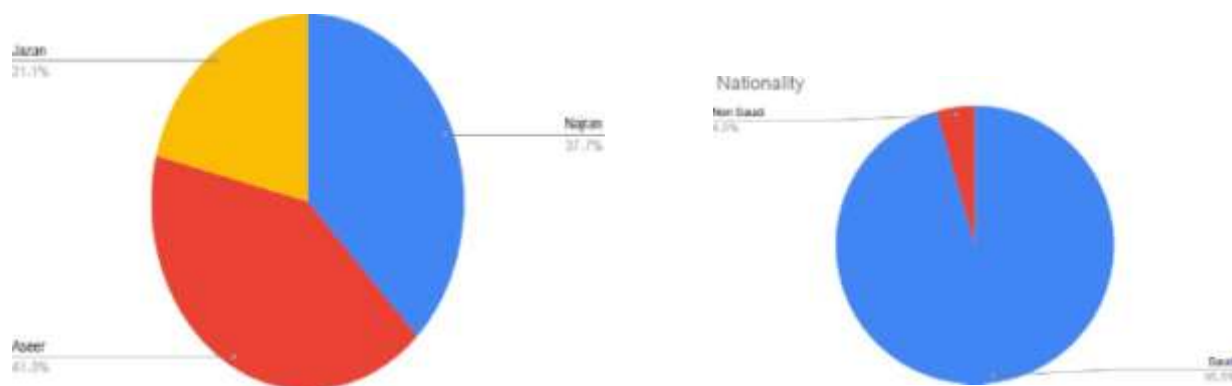
Almost half (55%) of the participated children had different kinds of mental or psychological disturbances, whereas 52.7% had difficulties in communication with the others. Data also showed that 45.3 % and 33.9% of their children had hearing disabilities and speech disabilities respectively. One third (31.1%) of the participated children had aggressive behaviors, whereas 23.1% were hyperactive and only 16.9% had history of seizures and convulsions. Physical disabilities and un-coordinated movements was reported by only 6.4% of the parents. The results also showed that 11.4% had more than one medical problem (Table 4). Comparing the data of the participated children in the three regions shows very close values throughout table 4.

Large number of children were not treated with any type of medication (67.3%). Thirteen percent were given medication to increase their concentration level, and almost equal number of children were given medication either to prevent convulsions (6.8%) or for more than one medical problem (7.1%). Only 3.4% of the children were given medication to reduce hyperactivity followed by 2.5% for other unmentioned reasons (Table 5).

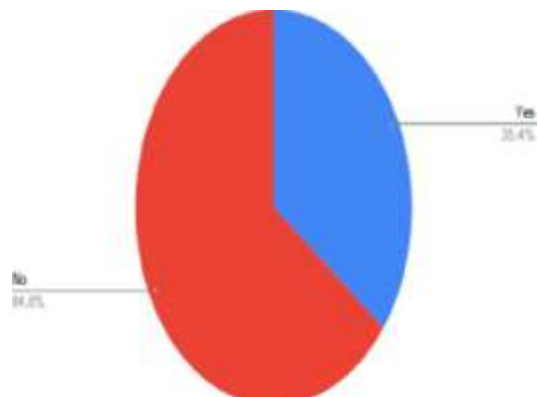
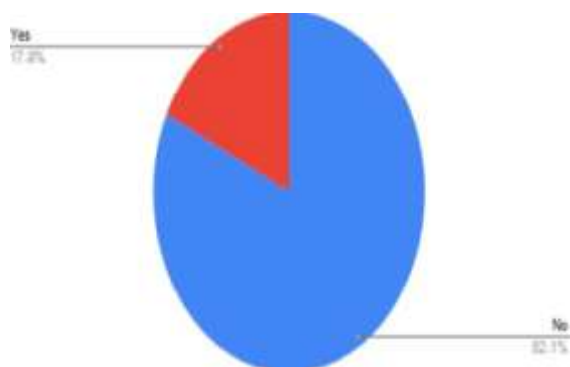
The review of the parents' responses to the questionnaire regarding dental experience indicated that more than half of the children (53.7%) had no previous dental experience, treatment or visits. Whereas, 40.1% of the patients had the chance to visit the dental clinic but due to the children's lack of co-operation no treatment could be done and only 4.9% were successfully treated under regular sitting. Almost one third (33%) of the children were treated under General anesthesia. (Table 6)

Less than half of the parents (46.3%) did not give an answer regarding the reason for not bringing their children for dental visits and 13.3% referred it to the lack of specialized dental clinic for children with special needs. Almost an equal number of parents 17.3% and 17.9% referred it to either the un-cooperative behavior of the children or a combination of other reasons. Only 5.2% of the parents did not take their children to the dentist because they had no pain or dental problems (Table 7)

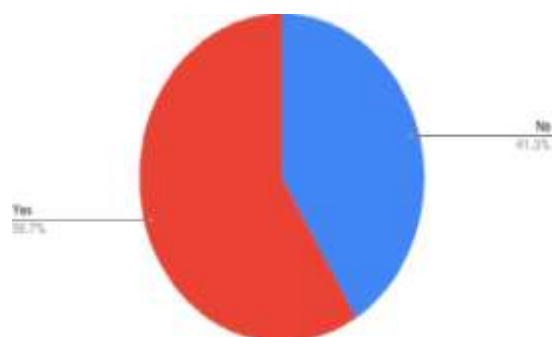
City



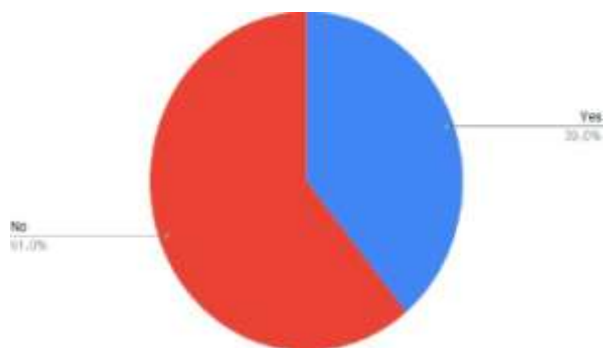
Did you refuse treatment of autistic patient and send the patient to another dentist? Did you treat any autistic patient?



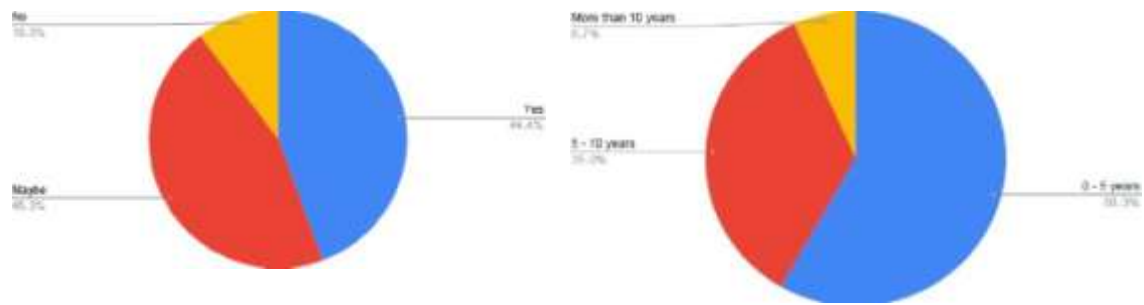
Do you like to treat autistic patient?



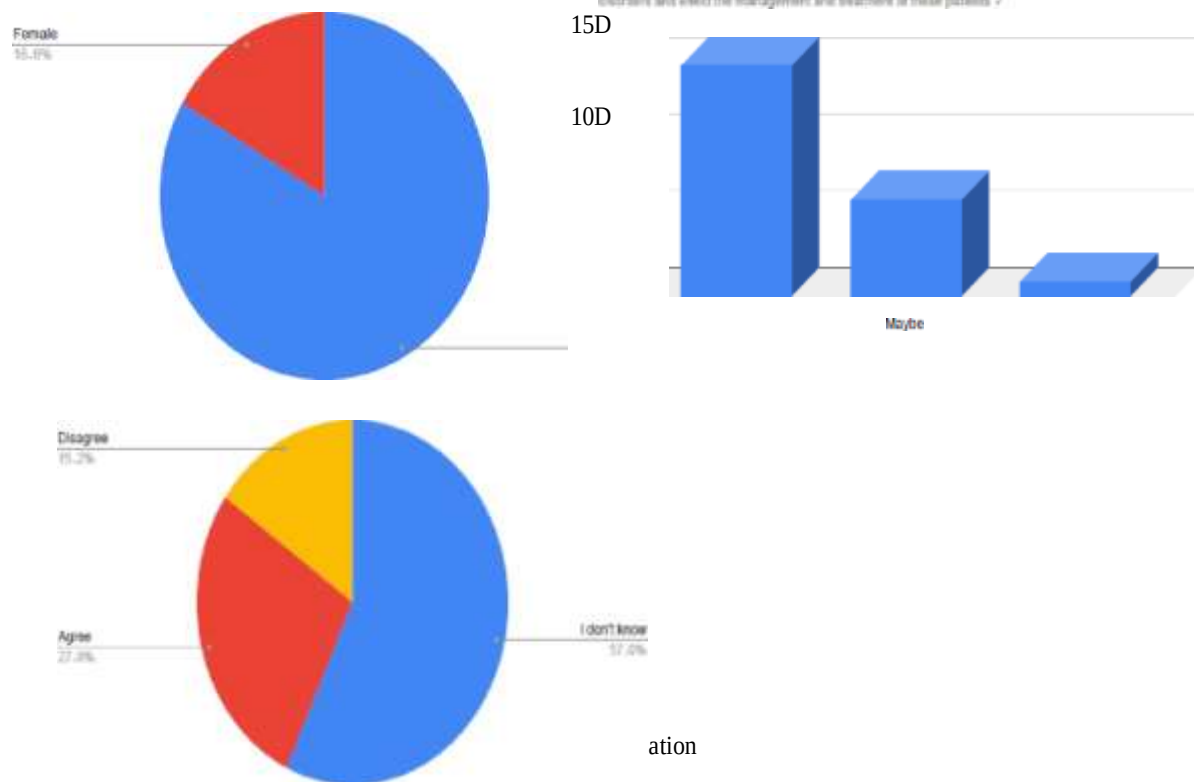
Do you scare to treat autistic patient?



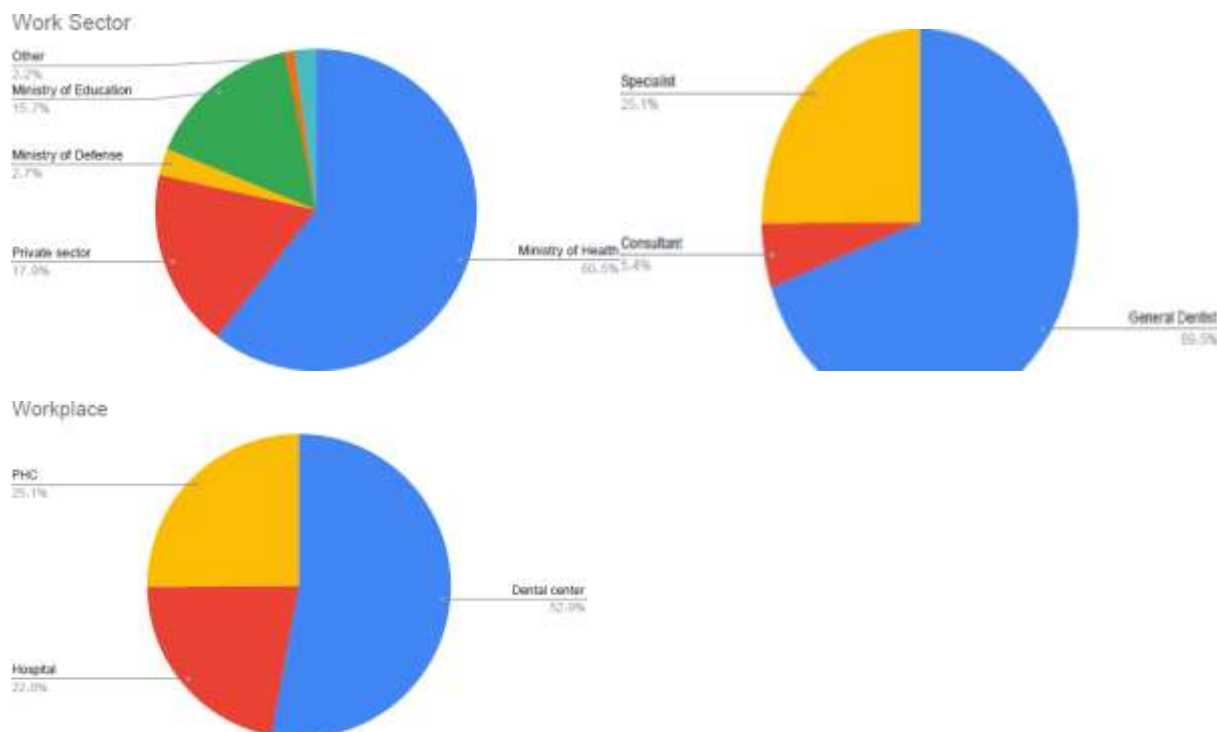
Experience



Gender



Motor deficits are often absent with autistic spectrum disorder



Discussion:-

The need for baseline information regarding the dental health of children with autism or Autistic Spectrum Disorder (ASD) in Saudi Arabia is becoming essential. The published information through the Saudi Autistic Society and the different rehabilitation centers regarding these children is not enough to provide a clear perception about their oral health status. So the aim of this study was to collect more information about the Saudi autistic children's characteristics, the age of diagnosis with autism or Autistic Spectrum Disorder, their different disabilities, medication used in addition to their previous dental experience and method of treatment. The selected cities are the major cities of the Kingdom and they encompass the majority of the Autism rehabilitation centers according to the SAS website.

The questionnaire was formulated in a simple Arabic and designed with multiple choice answers to be answered in few minutes by the parents. Choosing the distribution of the survey during the national autistic celebration day was to get a cross regional opinion of a large number of parents at the same time in the three selected cities. The celebration was specially designed for the autistic children and their families where games, songs, and plays were performed by the autistic children in conjunction with their siblings and parents. Even though, an introduction of the author and the purpose of the study was made by the manager of each center with an encouragement to answer the questionnaires the response rate was not as high as expected.

The Participation of the parents with their children in the different activities provided by the trainers in each center may give an explanation to the low response rate.

The ratio between males and females in the participated study group was four males to one female which resemble other international reports. Even though, not all the registered parents attended the celebration day or participated in the study, but reviewing the lists of the registered students in the three centers confirm a similar ratio. The findings of this study and the previous study conducted in Riyadh in 2005 could be considered as a confirmation of the consistency of the gender ratio in Saudi Arabia.

The parent's response was reviewed and categorized according to the age of diagnosis mentioned. The data of the study showed that most of the children were professionally diagnosed by medical personnel at around the age of 5 years. This is considered to be late when compared with international diagnostic age reports which indicated that autism can be recognized and diagnosed almost always before the age of three years the late diagnostic age in this

study could be as a result of the difficulty in autism diagnosis and the unavailability of specific tests. This delay was mentioned in studies conducted in the United States and correlated to the inability of some pediatricians to differentiate between cases of slightly delayed development, and autistic problems. The reported late diagnosis and the increase in the prevalence of autism in literature lead the American Academy of Pediatrics to recommend that all pediatricians should screen for autism spectrum disorders when children reach the age of 18 months and again at 24 months. The Academy also recommended to send all borderline cases to specialists for further evaluation.

The participated children in this study showed similar varieties of disturbances and disabilities when compared with other studies conducted around the world. None of the neurologic and psychiatric disturbances founded in the study were new or unmentioned in international reported studies. Similar findings were also observed when comparing the reported medication used by the children in the study with other published studies.

Due to the variety of disturbances and disabilities of the children participated in the study it was expected that it would be difficult to manage them in dental chair and that one third of the children would have been treated under general anesthesia. However, the fact that more than half of the children had never been in a dental clinic was disappointing. Moreover, a large number of parents left the question regarding reasons for not visiting dental clinic unanswered, this could be explained as more concentration was given to the medical condition of their children more than the dental condition.

While some parents relayed the cause of not visiting the dental clinic to the unavailability of specialized clinics, other parents mentioned that difficulties in their children's cooperation was the reason behind not visiting the dental clinic. The previous reasons given by the parents could be explained by a deficiency in their dental knowledge regarding the different successful methods of behavior management available in the pediatric dental clinic. This should be modified by a collaboration between the University, Ministry of Health and other medical and dental institutes to increase public dental awareness specifically regarding management of children with special needs.

Recommendations:-

1. The American Academy of Pediatrics' recommendations should be applied in Saudi Arabia to help improve the average age of diagnosis and make a positive effect on long-term outcomes for children with autism and their families
2. Regular visits to dental clinics should be recommended to all families with autistic children to reduce dental disease.

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