

## Knowledge of Dentists working At Public Dental Hospitals in Khartoum Locality Towards the Treatment of Autistic Patients

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This work was carried out in collaboration between both authors. Authors M.E.I and A.S.A. designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript.

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### Abstract:

**Background:** Autism is a syndrome of multiple neuropsychiatric disorders which is characterized by deficits in social interaction, communication, and unusual repetitive behaviour. This is a disease that is not yet fully understood, for this reason appropriate treatment and guidelines are in deficit, this research will try to evaluate the knowledge of dentists who have undergone specialization and general practitioners. This study aims to study the knowledge of Dentists working in public dental hospitals in Khartoum locality towards the treatment of autistic patients.

**Methodology:** Self-Administered questionnaires were distributed among 138 general dental practitioners and specialists employed at the Academic dental hospital and Khartoum Dental Teaching Hospital. Data was analyzed using SPSS.

**Results:** In this study, 67% of respondents declared that they received training on how to treat autistic patients and 55% of them declared that they have seen autistic patients. 28% of respondents managed to treat their patients while 63% managed to treat only some of them and 9% failed to treat any patient. This study partially supported the notion that dentists decline to treat autistic children, it found that 30% of respondents did not like to treat autistic children, 45% sometimes did not like to treat autistic children while 35 % of respondents did like to treat autistic patients.

**Conclusion:** The study concluded that there is no difference among general practitioners and specialists in their knowledge about the precautions to be taken when dealing with Autistic patients; this may give false impression that Specialization programs do not add to the undergraduate knowledge; although the majority of the participants showed high interest in educational programs aimed at deal with autistic patient.

**Keywords:** autism, knowledge of dentists, Khartoum, Sudan

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### I .Introduction

Autism was first described in 1943 by Leo Kanner as a syndrome of multiple neuropsychiatric disorders characterized by deficits in social interaction, communication and unusual repetitive behaviour<sup>[1]</sup>. It includes a wide range of symptoms depending on the level of disability as well as limited interest on activities<sup>[2]</sup>Autism is normally diagnosed before the age of six years and may be diagnosed in infancy in some cases. The degree of autism can vary from mild to severe in different children. Severely afflicted patients can show signs of extreme retardation<sup>[1]</sup>The cause of autism is not yet fully understood. However, it is speculated that at least some cases involve an inherited or acquired genetic defect. Researchers have suggested that the immune-system, the metabolic system, and environment are to be blamed. Children with autism may appear normal, but the disorder may prevent them from functioning and communicating in socially appropriate ways. The incidence of autistic disorder is seven per 10,000 persons. It is more common in males than females (4:1 ratio).<sup>[1]</sup>There is no single preferred treatment for this disorder but early treatment and proper care can reduce individual's difficulties whilst helping them acquire new skills. Working in close contact with a doctor or health care professional is of most importance in finding the appropriate treatment program. There are several treatment options; social services, private funded programs, and other supportive resources that can help<sup>[2]</sup>Over the past three decades, a tendency toward deinstitutionalization has brought people of all ages and varying levels of disability into the fabric of the communities among their families or a community based group residences.

People with disabilities and their caregivers now look to providers in the community for dental services as they often struggle to achieve and maintain good general and oral health.<sup>[3]</sup> This is important as autistic patients are at greater risk of developing dental disease due to the frequent use of medicines high in sugar content, dependence on a caregiver for regular oral hygiene, or dietary reasons.<sup>[4]</sup> The causes of autism include familial genetic tendency for autism; there is a 3-8% if a family already has one autistic, Child Fragile X syndrome, tuberous sclerosis, prenatal factors such as intrauterine rubella, and cytomegalic inclusion disease, postnatal factors such as untreated phenylketonuria, infantile spasms, and herpes simplex encephalitis. Diagnosis of autism is usually done by experienced clinicians who can reliably diagnose autism in children younger than three years of age. The typical presenting symptoms of autistic disorder are delayed speech, or challenging behaviour before the age of three. Behavioral problems in autism include impairment of social skills, echolalia, sensorimotor deficiencies and limited interactive language skills. Other disorders may include seizures, mental retardation, self-injuring behavior and problems with symbolic thinking.

**Justification:** Autism is a disease that is not yet fully understood, for this reason appropriate treatment and guidelines are in deficit, this research will try to evaluate the knowledge of dentists; specialists and general practitioners. This study aims to make recommendations and establish guidelines for a traumatic successful treatment of autistic sufferers.

**General objectives:** To estimate the Knowledge of dentists towards the treatment of autistic patient.

**Specific objectives:**

- 1- To estimate the knowledge of the dentists about characteristics of autistic children
- 2- To assess the knowledge of the dentists about handling autistic children in dental practice.

## **II . Literature Review**

According to a study done by Newacheck et al. 2000; and Yu et al. 2002, Oral health care is the most prevalent unmet health care need amongst healthy children and those suffering from special needs.<sup>(7)</sup> Autism sufferers are amongst those at risk of oral healthcare neglect, Good oral health care for individuals on the autism spectrum is dependent on specialized knowledge, increased awareness, and in many circumstances, effective support strategies which are individually tailored to patients' needs. In addition to this the complex characteristics associated with autism spectrum disorders can make it difficult for affected individuals to access appropriate dental services.<sup>(7)</sup> Moreover, and because of their difficulties in communication, heightened sensitivity to, reactivity to, and fear of stimuli in the dental environment, individuals with autism are often unable to receive proper a traumatic dental care without the use of sedation [8]. Thus, Autistic patients – and patients with related behavioural and intellectual difficulties – present a unique challenge for dentists [8]. There is still a significant number of dentists who may decline to treat such patients usually because they're uncertain of how to control them and possibly afraid of any complications (9). Usually autistic patients suffer from the same dental problems seen in other normal individuals in addition to some unique dental problems such as bruxism or self-injurious behaviours[9] but according to a standardized assessment, autistic children were less cooperative during dental treatment[10]. It is concluded that Children with autistic disorders usually present with severe dental problems and may be more difficult to treat than healthy children. [11] hence, providing oral healthcare services to patients with developmental disabilities requires adaptation to additional skills [3]. On the other hand, an article published by NIDCR stated that most people suffering from mild or moderate developmental disabilities can be treated effectively in the general practice setting [3]. This point was repeated once again in another article by the NIDCR stating that the care provided to autistic children within the non-specialized Public Dental Service is satisfactory, provided that there is available access to a paediatric specialist dentist when needed [11]. In another research conducted by Dao et al, it was found that, most general practitioners did not consider that their undergraduate dental education had prepared them sufficiently to treat special needs patients. However, the practitioners who reported to have been provided with a better education on the subject of special needs patients, were more likely to treat special needs patients[12]. A similar result was found in a study conducted by Weil TN et al which revealed that 89 percent of paediatric dentists and 32 percent of general practitioners treat patients with autism disorder and that the respondents disagreed with statements indicating that their pre-doctoral dental education had prepared them sufficiently to treat patients with autism. However, the better they felt prepared, the more likely they were to provide acceptable care for these patients [13](16) Patients with ASD have a normal life expectancy and therefore need dental care throughout their lifetimes. However, research has shown that many general dentists do not accept patients with ASD. Dao et al. found, for example, in 2005 that 67 percent of the general dentists surveyed would not accept any adults with autism and that nearly 60 percent would not provide care for paediatric patients with autism.(8)

## **III . Materials And Methods**

Study design: Descriptive cross-sectional study

Study population: The study included house officers, medical officers and consultants who are employed at Academic Dental Hospital and Khartoum Dental Teaching Hospital

Sampling technique: Convenience sampling technique

Study area: Academic Dental Hospital and Khartoum Dental Teaching Hospital November 2016 – April 2017

Sampling size: Total number of dentist form each hospital was obtained.

Khartoum Dental Teaching Hospital = 188                       $SZ_1=127$

Academic Dental Hospital = 70                                 $SZ_2=60$

Total population =258

The simple was collected according to the following formula:

$SZ=N/1+N*(e)^2$                        $SZ= SZ_1+SZ_2 = 127+60 =187$

Where N= number of population      e =CIM95%

Inclusion criteria: House officers, medical officers and consultant who were working at ADH and Khartoum Dental Teaching Hospital.

Exclusion criteria: House officers, medical officers and consultants who work in other hospitals

Data collection methods and techniques: Data collection was carried out by the construction of a specifically designed self-administered questionnaire (appendix 1) to obtain demographic data, and information needed to assess the knowledge, of the participants towards the managements of autistic patients in the dental setting

Data collection tools and technique: Self-administered questionnaires. The questionnaire was divided into 2 parts. Part I focuses on socio-demographic factors including age, gender and years of experience. Part II focuses on the knowledge of dentists about the treatment of autistic patients

Data management and analysis: Data was collected, summarized, coded and entered in master sheet; then analyzed using SPSS (statistical package for social science) version 21.then displayed in tables and figures, along with descriptions of data using frequencies and percentages.

Ethical consideration- Ethical clearance was obtained from the research & ethics committee of the University of Medical Sciences and Technology. Verbal and written consents were obtained from all participants and a concise explanation of the aims of the research was given. Participation in the study was voluntary. Dentists were reassured that privacy is insured and data collected will be used only for research purposes.

#### **IV . Results**

In this study, 67% of respondents declared that they received training on how to treat autistic patients and 55% of them declared that they have seen autistic patients. 28% of respondents managed to treat their patients while 63% managed to treat only some of them and 9% failed to treat any patient. This study partially supported the notion that dentists decline to treat autistic children, it found that 30% of respondents did not like to treat autistic children, 45% sometimes did not like to treat autistic children while 35 % of respondents did like to treat autistic patients.

#### **V . Discussion**

This study was conducted under the pretence that the two groups of respondents (Specialists and general practitioners) would show varying degrees of knowledge. It was assumed that Specialists would score a higher level of knowledge in the treatment of autistic patients due to their experience and continuous education courses. This study included 138 respondents; 62% of them were females and 38% were males. (Figure 1).79% of these respondents were general practitioners while 21% were specialists (Figure 2). The degrees of experience varied amongst respondents; the range is 1-5 years (75%), 6-10 years (23%) and >10years (2%).

This study explored the knowledge of dentists towards the care of autistic children by evaluating the relevant training provided to dentists, and their understanding of the appropriate behavioural protocols when treating autistic patients. In a previous study, Dao et al, concluded that most general practitioners do not consider that their undergraduate dental education had prepared them to treat autistic patients (12). Weil et al found similar results in their study stating respondents disagreed with statements indicating that their pre-doctoral dental education had prepared them sufficiently.(13) Dao also went on to say that practitioners who reported to have been provided with a better education on the subject of special needs patients were more likely to treat ASD patients.(12) In this study, 67% of respondents declared that they received training on how to treat autistic patients and 55% of them had received an autistic patient in the dental clinic. Furthermore of the respondents who received an autistic patient, 28% of them managed to treat their patients, 63% managed to treat some of their patients while 9% failed to treat any (Figure 3). The significance of ASD was mentioned by Newacheck et al. 2000; and Yu et al. 2002; they stated that Oral health care is the most prevalent unmet health need among those suffering from special needs. (7). They further mentioned that fear of stimuli in the dental environment, behavioural difficulties and intellectual difficulties witnessed under ASD, represent the main reasons behind which significant numbers of dentists decline to treat them.(7) This study partially supported the

notion that dentists decline to treat autistic children, it found that 30% of respondents did not like to treat autistic children, 45% sometimes did not like to treat autistic children and 35 % of respondents did like to treat autistic patients. In another study conducted by Dao and Weil suggested reasons for why some dentists reject autistic patients; difficulties in communication, heightened sensitivity and fear of stimuli in the dental environment. This was also supported by the results of this study; 61% of respondents stated that autistic children are often unable to tolerate sights and sounds in the dental operator; while 35 % of respondents stated that specified autistic children are sometimes unable to tolerate the sights and sounds of the dental operator. Marshall J also mentioned communication issues as a cause of uncooperative behaviour; amongst other factors he concluded that 65% of the autistic patients in his study were uncooperative. (14) On the other hand, an article published by NIDCR stated that most people suffering from mild or moderate developmental disabilities can be treated effectively in the general practice setting [3]. This point was supported by another article in which the NIDCR stated that the care provided to autistic children within the non-specialized Public Dental Service is satisfactory, provided that there is available access to a paediatric specialist dentist when needed.(11). Large number of dentists declining to treat patients who suffer from autism; the reasons include insufficient financial reimbursement and tardy time consuming treatments.(13) This belief was supported by the results found in this study; A majority of 80 % of respondents stated financial reimbursement was not sufficient for treatment done.(Figure 6). Regarding the time taken to treat patients 58% of respondents stated that treatment is time consuming, 31% stated it was sometimes time consuming and a minority of 11 % stated it was not time consuming. (Figure 7). Another further aim for this study was to explore the knowledge of dentists towards the care of autistic children, the relevant training provided to dentists regarding behavioural protocols was evaluated; it was concluded that 26% of respondents were capable of applying behavioural protocols, 33% believed they were sometimes capable of applying these protocols and 41 % felt unable to perform these protocols. (Figure4). Of the respondents who stated their ability to apply behavioural protocols, 53% stated an acceptable level of success, 10% stated great success and 37% stated moderate success (Figure 5

## **VI. Conclusion**

This study concludes that knowledge of general practitioners and specialists regarding the precautions to be considered when dealing with Autistic patients is comparable; this may give false impression that Specialization programs do not add up to the undergraduate knowledge in dealing with these patients; however, the majority of participants in this study showed interest in taking educational programs aimed to deal with autistic patient.

## **VII. Limitation**

- 1- The majority of participants were general practitioners.
- 2- Based on the results of this study, more accurate results can be obtained by a broader population size.

## **Recommendation**

- Courses concerned with autistic patients should be conveyed in specialization and undergraduate programs.
- Continuous education programmes targeting institutions that have a high incidence of special needs patients should be arranged by Public Health authorities.
- Research should be conducted to establish treatment guidelines for Autistics patients.

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### Appendices: 1

Figure 1: The Gender of the Respondents in the Study.

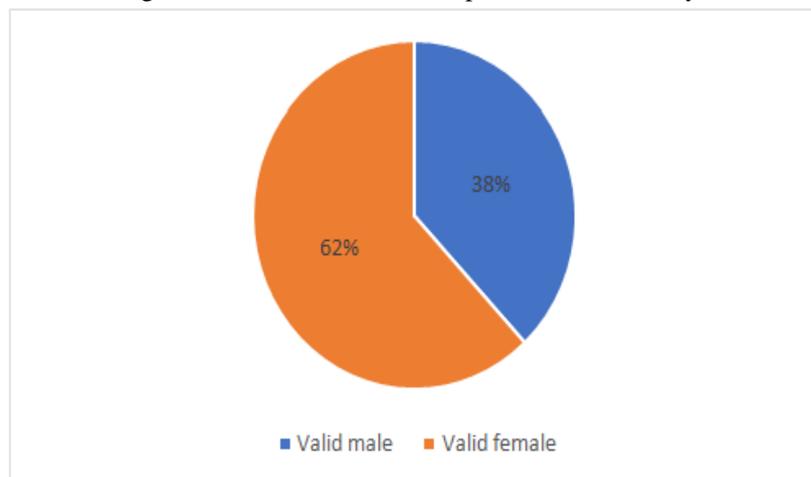
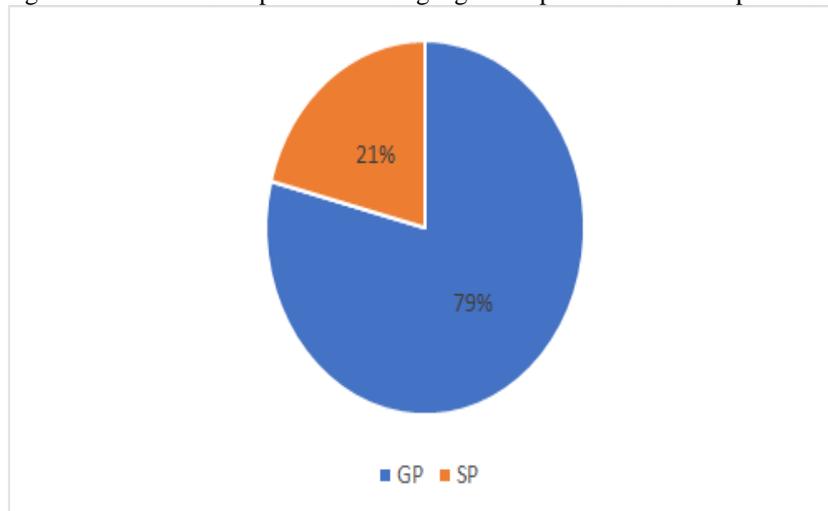
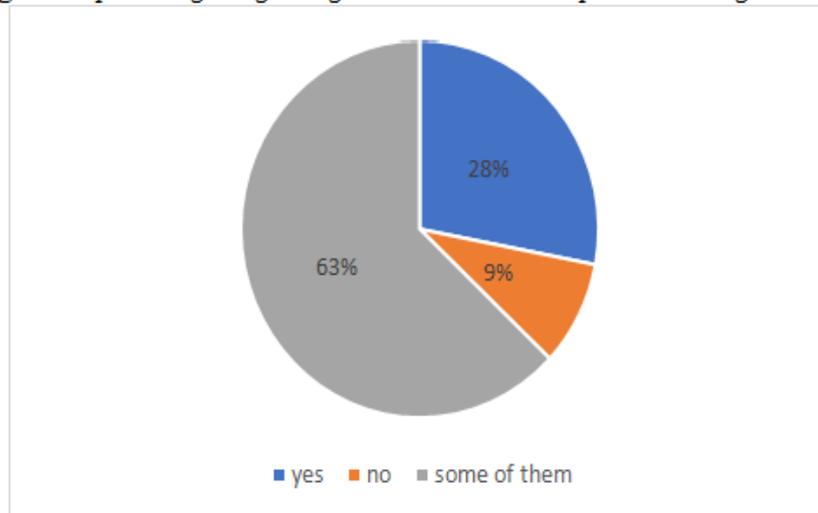


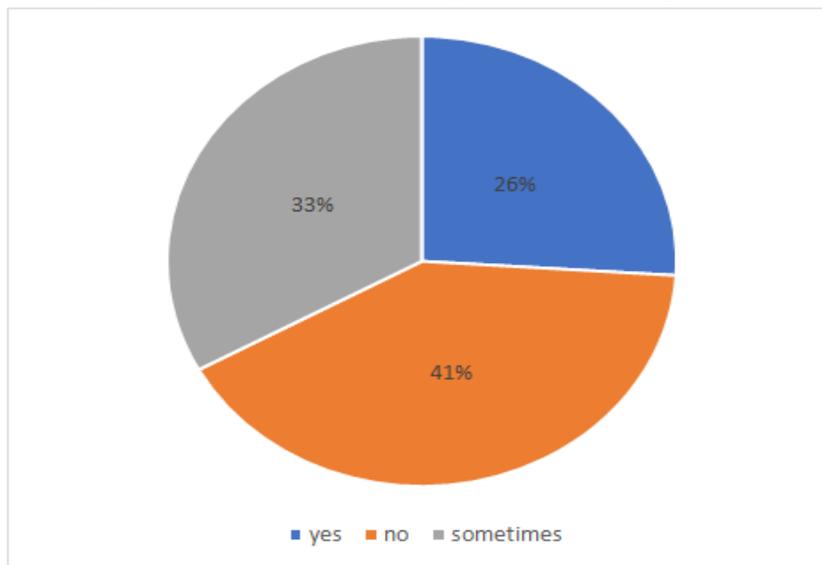
Figure 2: the level of experience amongst general practitioners and specialists.



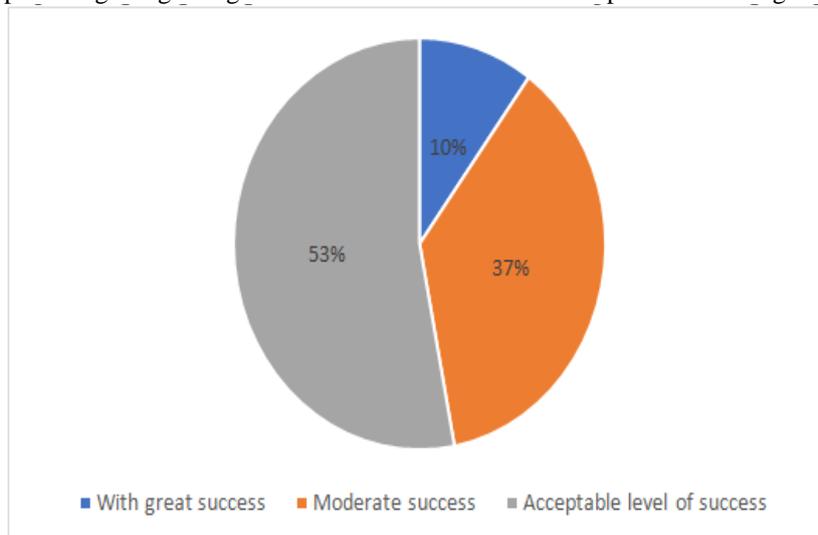
**Figure 3:** percentages regarding treatment of autistic patients amongst dentists.



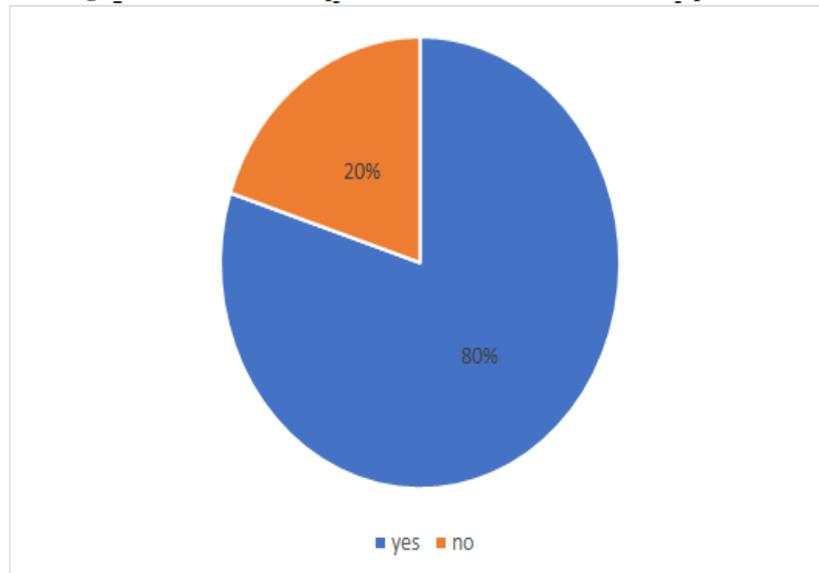
**Figure 4:** Dentists who successfully used behavioural protocols.



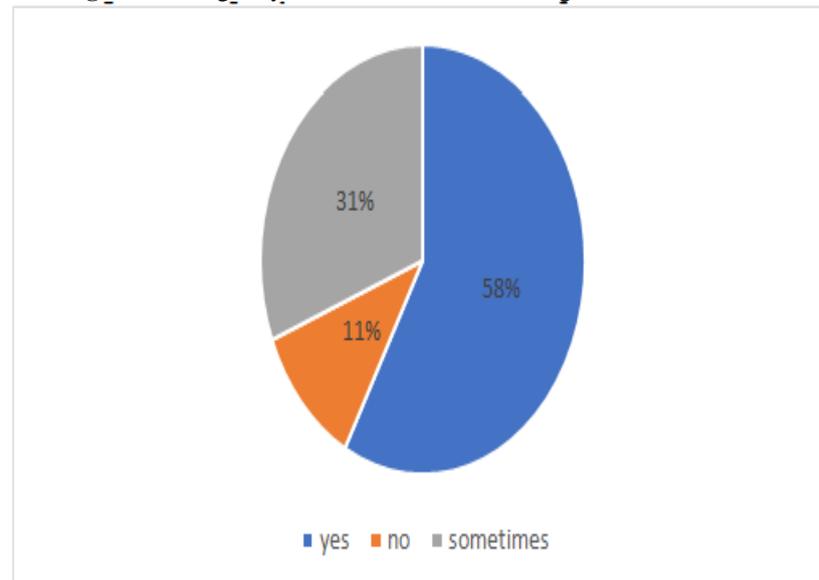
**Figure 5:** percentages regarding the successful use of behavioural protocols amongst respondents.



**Figure 6:** Financial compensation for treatment of autistic patients



**Figure 7:** Longevity of dental treatment amongst autistic children.



**Appendix2:**



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My name is Meshary Elsheikh Idrees and the following study is on the Knowledge of Dentists working at public dental hospitals in Khartoum state towards the treatment of autistic (ADS) patients Your participation is completely voluntary and privacy and confidentiality will be maintained throughout the study.



Participant's signature:

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