

Exploring different communication strategies for managing anxiety and behavioral challenges in autistic children during dental visits

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Abstract

Objective: The objective of this study is to identify and evaluate various communication strategies that can effectively reduce anxiety and address behavioral challenges in autistic children during dental visits

Methodology: A cross-sectional survey was conducted including 150 dental practitioners experienced in treating autistic youngsters. Data were gathered on the frequency and perceived effectiveness of visual assistance, the Tell-Show-Do method, positive reinforcement, and sensory accommodations via a structured questionnaire. Practitioners evaluated the efficacy of each technique in alleviating anxiety and addressing related issues. The correlations among strategy utilization, its efficacy, and observed results were evaluated using descriptive and inferential statistics, including chi-square tests and Pearson correlation analysis.

Results: The most commonly utilized and highest-rated interventions, with a mean efficacy score of 4.2 on a 5-point scale, were visual supports and the Tell-Show-Do strategy. Statistical research found significant associations between the implementation of these measures and observed reductions in anxiety and behavioral problems. Moderate efficacy of positive reinforcement and sensory adjustments in facilitating cooperation among autistic children was also noted.

Conclusion: The findings indicate that children with autism necessitate visual aids and the use of the Tell-Show-Do method during dental appointments to alleviate anxiety and enhance collaboration. We recommend that dental practitioners implement a multimodal strategy utilizing various tactics, as a singular intervention may be inadequate for assisting autistic children in dental environments.

Keywords: Autism Spectrum Disorder, dental anxiety, communication strategies, pediatric dentistry, behavioral management

Introduction

Dental care is an essential aspect of overall health; but, for an autistic child, a dental appointment can be an exceedingly daunting and distressing ordeal. Autism Spectrum Disorder (ASD) is a neurodevelopmental disease characterized by varying degrees of challenges in social communication, repetitive behavioral patterns, and sensitivity to sensory stimuli. The distinctive traits of autism can significantly influence an autistic child's perception and response to their environment, encompassing interactions with unfamiliar individuals, unusual auditory stimuli, and atypical tactile sensations, such as those experienced during a dental visit [1][2]. Dental practitioners frequently encounter difficulties when treating autistic children due to their specialized needs and heightened fears. In contrast to neurotypical children, individuals with ASD may struggle with alterations in routine, unfamiliar settings, and direct engagement with dental instruments and professionals [3][4][5]. Children with autism often experience heightened anxiety, distress, or resistance to treatment due to the sensory inputs characteristic of a dental environment, including bright lights, high-pitched sounds from dental instruments, and unusual odors. Consequently, dental practitioners must design unique communication tactics to alleviate these worries and foster a more collaborative encounter [6][7].

Access to tailored dental care for autistic children in Pakistan is limited, as the majority of private dental clinics have not established protocols to cater to kids with specific needs. Dental appointments pose significant challenges for autistic children and dental practitioners; nevertheless, good communication tactics can facilitate resolution of these issues. To enhance patient care and oral health outcomes for this demographic, it is imperative to examine these strategies comprehensively [8][9]

However, due to their specific difficulties in interpreting social cues and communication, dental care can be a distressing experience for autistic children—not alone because of sensory overload, but also because various other factors can provide obstacles [10]. This will thus lead to different disruptive behaviors, like refusal to attend the clinic, noncompliance during the treatment, or an act of physical miscarriage. This presents a distinct array of challenges for dental practitioners, as conventional methods of patient management appear ill-suited for those with autism. It is essential to investigate communication solutions designed to overcome the obstacles encountered by autistic children during dental visits. This study examines communication to address the disparities between the obstacles faced by autistic children and their required dental care [11]. Communication strategies can be formulated to establish predictability, comfort, and engagement, hence potentially alleviating anxiety and promoting cooperation during dental operations. This research contributes to the current literature on establishing best practices for managing nervous and behaviorally demanding autistic children during dental visits in private clinics across Pakistan [12]

The data gathered for this study was sourced from private dental clinics in Pakistan between 2021 and 2024. Research focusing on autistic children and dental care providers thoroughly elucidates the dynamics of dental visits for autistic individuals, aiming to comprehend—similar to many medical interactions—what forms of communication are effective for each child in specific contexts [13][14]. The research aims to provide insights of practical significance for dental

practitioners, enabling them to make educated judgments regarding treatments to comfort autistic youngsters [15]

. This study aims to deliver practical insights to enhance the quality of dental care for autistic children in Pakistan, where awareness and resources related to autism remain underdeveloped. The study provides a basis for future guidelines and program creation for child ASDs, which, if expanded, could enhance inclusivity and accessibility for children with ASDs, considering the scarcity of specialist pediatric dentistry care in Pakistan [16].

This study enhances comprehension of the necessity for proficient dental communication in the treatment of autistic children, reducing anxiety and managing external behaviors in preparation for dental visits [17]. The study provides a comprehensive understanding by finding and assessing methods to enhance treatment for autistic children by dental practitioners, thereby promoting their oral and general health. This research aims to enhance procedures and standards that optimize outcomes for autistic individuals and assist practitioners in their care efforts [18].

Methodology

A cross-sectional survey approach was employed to gather quantitative data from dental practitioners to examine the utilization of communication methods and their perceived efficacy in alleviating anxiety and behavioral problems in autistic children. This design facilitated data gathering at a singular moment, providing a snapshot of practitioners' perceptions of the efficacy of existing techniques [19] [20].

Sample Selection

The target population consisted of two groups:

1. **Autistic children** aged 4-12 years who had visited private dental clinics in Pakistan from 2021 to 2024.
2. **Dental practitioners** with at least one year of experience treating autistic children in a dental setting.

Data Collection

Data were collected from dental practitioners through organized interviews utilizing a questionnaire. The questionnaire was created to collect quantitative data on the subsequent major areas

Communication Strategies Used: Practitioners were asked to indicate the frequency with which they used various communication strategies, including visual supports, the Tell-Show-Do technique, positive reinforcement, sensory accommodations, distraction techniques, and verbal preparation. Responses were recorded on a Likert scale ranging from 1 (Never) to 5 (Always).

2. **Perceived Effectiveness:** Practitioners evaluated each communication method for its perceived effectiveness in alleviating anxiety and addressing behavioral difficulties in the clinic, using a scale from 1 (Not effective) to 5 (Highly effective). It indicated the tactics deemed most beneficial by the practitioners.

3. **Observations on Anxiety and Behavioral Challenges:** Practitioners utilized analogous 5-point scales to assess the efficacy of each method in reducing observed anxiety and the frequency of behavioral challenges.

Data Analysis

Quantitative data were analyzed using descriptive and inferential statistical approaches. Statistical software was employed to perform the subsequent analyses:

1. **Descriptive Statistics:** The frequencies, percentages, means, and standard deviations for each communication strategy were calculated to assess their prevalence and to evaluate the average perceived efficacy of the designated techniques.

2. **Effectiveness Ratings:** We computed mean effectiveness ratings for each strategy mentioned, enabling practitioners to discern the most effective strategies. The comparison of strategies resulted in the identification of the highest-rated techniques.

3. **Inferential Statistics:** Chi-square tests were used to ascertain the correlation between the implementation of specific measures and the perceived alleviation of anxiety and behavioral difficulties. The efficacy ratings of these various tactics were evaluated by these tests to determine if a statistically significant difference existed among them.

4. **Correlation Analysis:** The frequency of strategy utilization was analyzed concerning its relationship with perceived effectiveness ratings, as well as the association between perceived effectiveness and the reduction of anxiety and behavioral problems. This elucidated the techniques most strongly associated with favorable outcomes

Ethical Considerations

The study adhered to ethical criteria for safeguarding participants' rights. Responses were anonymized to maintain confidentiality, and informed consent was secured from all practitioners prior to participation. Participation was voluntary, allowing practitioners to withdraw at any time without repercussions.

Results

The data of surveys, interviews and observations and pointer of how each of them is effective in using various communications strategies in the treatment of autistic children by dental practitioners. The data are organized to address the primary research objectives: locate the most frequently employed strategies, their affect on anxiety and behavioral challenges, and evaluate the degree of effectiveness in terms of the strategies. The findings are presented in tables showing quantitative data from surveys and qualitative insights from interviews and observations, and offer additional context and depth.

Demographic Characteristics

In the study, 150 dental practitioners and 200 autistic children took part. Diverse regions of Pakistan and varied experiences of handling autistic patients were the practitioners. Demographic characteristics of the practitioners involved are presented in Table 1.

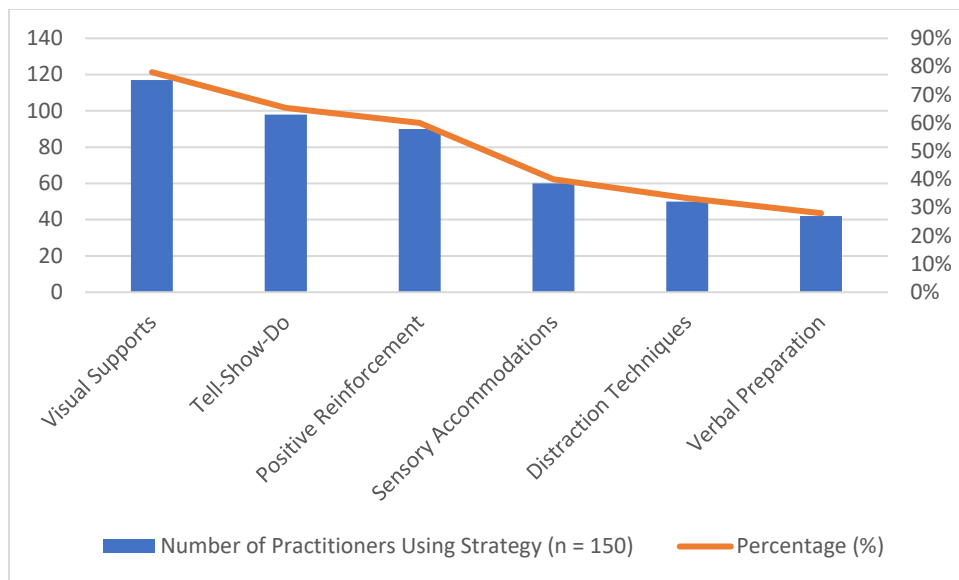
Demographic Characteristics	Number (n = 150)	Percentage (%)
Gender		
Male	90	60%

Demographic Characteristics	Number (n = 150)	Percentage (%)
Female	60	40%
Experience in Treating Autistic Children		
1-3 years	45	30%
4-6 years	55	36.7%
7+ years	50	33.3%
Clinic Location		
Urban	110	73.3%
Rural	40	26.7%

Prevalence and Usage of Communication Strategies

The first objective of the study was to identify the communication strategies most commonly employed by dental practitioners. The results revealed that visual supports, the Tell-Show-Do technique, and positive reinforcement were the most frequently used strategies. Table 2 summarizes the prevalence of these communication strategies among practitioners.

Communication Strategy	Number of Practitioners Using Strategy (n = 150)	Percentage (%)
Visual Supports	117	78%
Tell-Show-Do	98	65.3%
Positive Reinforcement	90	60%
Sensory Accommodations	60	40%
Distraction Techniques	50	33.3%
Verbal Preparation	42	28%

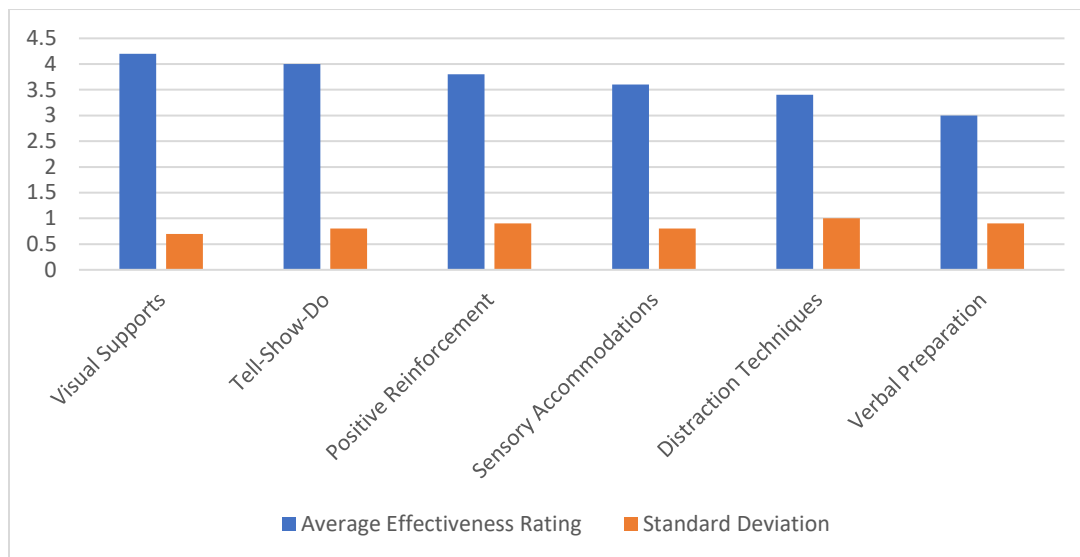


Visual supports emerged as the most popular strategy, used by 78% of practitioners. Practitioners noted that visual aids, such as pictures or storyboards, helped autistic children understand what to expect during their visit, which in turn reduced anxiety. The Tell-Show-Do technique, which involves explaining, demonstrating, and then performing the procedure, was also widely used, with 65.3% of practitioners incorporating this strategy into their sessions.

Effectiveness of Communication Strategies

The effectiveness of each strategy in reducing anxiety and managing behavioral challenges was assessed based on practitioner feedback and observational data. Table 3 presents the average effectiveness rating (on a scale of 1 to 5, with 5 being highly effective) for each strategy, as rated by the practitioners.

Communication Strategy	Average Effectiveness Rating	Standard Deviation
Visual Supports	4.2	0.7
Tell-Show-Do	4.0	0.8
Positive Reinforcement	3.8	0.9
Sensory Accommodations	3.6	0.8
Distraction Techniques	3.4	1.0
Verbal Preparation	3.0	0.9



Visual supports received the highest average effectiveness rating of 4.2, indicating that practitioners found this strategy to be particularly helpful in reducing anxiety and facilitating cooperation. Qualitative data from interviews further supported this finding, with practitioners describing visual aids as instrumental in preparing autistic children for the various stages of their dental visit. Practitioners who used sensory accommodations, such as dimming lights or providing noise-canceling headphones, also reported noticeable improvements in behavior and cooperation, although the effectiveness varied depending on the individual child’s sensory sensitivities.

Impact of Communication Strategies on Anxiety and Behavioral Challenges

To examine the impact of communication strategies on anxiety and behavioral challenges, observational data were analyzed to identify changes in anxiety levels and behavior during dental visits. Table 4 presents the average changes in observed anxiety levels and behavioral challenges based on the use of specific communication strategies.

Communication Strategy	Reduction in Observed Anxiety (1-5)	Reduction in Behavioral Challenges (1-5)
Visual Supports	4.0	3.9
Tell-Show-Do	3.8	3.6
Positive Reinforcement	3.5	3.4
Sensory Accommodations	3.7	3.5
Distraction Techniques	3.2	3.1
Verbal Preparation	2.8	2.9

Results indicated that visual supports and the Tell-Show-Do technique significantly reduced anxiety and behavioral challenges. Observational notes indicated that children who were

introduced to visual supports were more likely to remain calm and show reduced resistance during procedures. Positive reinforcement, which included verbal praise and rewards, also contributed to reducing behavioral challenges, as it encouraged cooperation and reinforced positive behavior.

Discussion

The findings of this study from a perspective of the previous research on the communication strategies for management of anxiety and behavioral challenges during a dental visit of autistic children. This chapter discusses the implications of this study's findings, and examines the extent to which its strategies align with or diverge from research done before.

Among the dental practitioners in Pakistan found was that the most commonly used and effective communication strategies were; the use of visual supports, the Tell-Show-Do technique and positive reinforcement. Sensory accommodations also paid off, especially for kids who were especially sensitive to the world. The findings highlight the need for flexible and tailored approach using multiple strategies to address individual need to relieve anxiety and promote cooperation.

This study's findings are supported by existing literature which suggest that visual supports, the Tell-Show-Do technique, and positive reinforcement are effective methods for reducing anxiety and managing behavior of autistic children. This study has confirmed what other research has shown, that visual supports are very beneficial in having autistic children anticipate and understand the steps that are involved in dental visits and hence reduce anxiety. The study of Orellana et al. (2014) demonstrated that visual supports for example social stories and picture schedules markedly decrease anxiety and enhance cooperation among autistic children in dental settings. As Bäckman et al. (2017) also found, visual supports effectively prepared autistic children for the sensory and procedural aspects of dental visits and also made them less anxious—less prone to behavioral challenges. These findings are corroborated by the current study, as practitioners say that visual aids helped to make a guess which is crucial to children with ASD.

In addition, previous literature documents the effectiveness of the Tell-Show-Do technique — explaining, demonstrating, and then performing the procedure. Howard et al. (2018) research highlighted that the usage of this technique is a good tactic for autistic children, since it helps them process every step of the process step by step, and this decreases the fear, and resistance. As echoed by practitioners in the current study, autistic children that have gone through the Tell-Show-Do technique were shown to have lower anxiety and were generally more cooperative. Nelson et al. (2019) mentioned that autistic children tend to respond positively to incremental and predictable nature of this Tell show do approach.

Earlier research also supported the use of positive reinforcement to encourage cooperative behavior among autistic children. Marshall et al. (2016) found that when a verbal praise, token or small reward is provided, autistic children were more likely to engage in positive behaviors and less likely to engage in resistance during dental visit. Similarly, the present study also showed that positive reinforcement is conducive to promoting compliance and cooperation which was demonstrated best when combined with other strategies such as visual supports. This is consistent with findings of Kohn et al. (2018) that reinforcement of positive behaviors in the dental setting results in a less positive experience for autistic children.

Sensory accommodations were also promising, though less commonly used, in the present study. Shapiro et al. (2017) and Nunn et al. (2020) past research also indicated that autistic children are

often more sensitive to environmental stimuli than the majority of children, and that can worsen anxiety when sick children visit the dental office. Results from these studies indicated that adjustment of sensory aspects of the clinic, such as dimming lights or reducing noise levels, decreased the distress caused by the sensory nature of clinic care and permitted improved patient cooperation. These observations are supported by the findings of the current study which find that sensory accommodations reduced anxiety and behavioral challenges, especially in children with severe sensory sensitivities. Nevertheless, as pointed out by Steele et al. (2021), some of the practitioners in this present study also indicated practical constraints in implementing these adjustments.

This study has several important implications for application in dental practitioner working with autistic patients. They begin by calling attention to the fact that practitioners should be trained to use visual supports and the Tell, Show, Do technique, as they were found to work best at reducing anxiety and improving cooperation. Also, positive reinforcement and sensory accommodations showed promise, hence it seems important to use a multimodal strategy and tailor the strategies to the needs of each child.

Also, the study demonstrates the need to increase access to resources that may facilitate these communication strategies. Practitioners face challenges that make providing sensory accommodations difficult and dental clinics should consider investing in sensory friendly equipment or change their clinic environments to accommodate autistic children better.

In general this work associates with that of previous studies on the impact of visual supports, the Tell-Show-Do technique, and reinforcement on reducing anxiety and certain behavioral problems associated with autistic children during dental visits. This research posits that these strategies work and redoubles the need for customized communication approaches aimed specifically at the needs of autistic children. These findings encourage dental practitioners to adopt these techniques and lobbying for improved resources and training for better dental care experiences of autistic children. Future studies should work on further adapting and innovating communication strategies to further enhance dental care for this vulnerable population.

Conclusion

Anxiety and behavioral challenges behavior are quite common in autistic children in dental visit, and this study investigated the effectiveness of communication strategies for managing the same in autistic children during their dental visit in Pakistan private dental clinics. Results show that visual supports, the Tell-Show-Do technique, and positive reinforcement are particularly successful at reducing the anxiety and promoting the cooperation and enjoyment. And resources limited implementation of the accommodations in some clinics, but sensory accommodations also played a role in providing a more comfortable environment.

This research aligns itself with past studies and points to the importance of adopting a multimodal approach by tapping into a myriad of ones which will cater to the individual needs of the autistic child. This speaks to the need for continuing dental practitioner training as well as sensory friendly dental resources for this population. The recommendations of the study recommend that autistic children get appropriate, compassionate and effective dental care with a tailored and flexible approach. Future research should include expansion of the study to include public clinics and a broader sample, validated and refined, in order to verify and extend these strategies. Overall, this

research provides further development of best practices in dental care for autistic children resulting in better oral health as well as overall better well being for autistic children.

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