

Background

- Autism Spectrum Disorder (ASD) is a complex neurological disorder. It is characterized by individuals with combinations of impairments in social communication and repetitive behaviors, highly restricted interests and sensory behaviors.
- ASD is usually diagnosed between the ages of 2-4 and is 4x more likely in males.
- Prevalence of ASD: 1 in 31 children as of 2025, according to the CDC.

Issues in Dentistry:

- High amounts of stimuli in the dental setting.
- 95% of children with ASD have sensory processing difficulty
- Many parents report barriers to care.
- Conscious sedation or general anesthesia have associated risks and do not promote long-term compliance or the ability to accept oral healthcare.

Autism Spectrum Levels of Severity	Social communication/restricted interests and repetitive behaviors
Level 1: requiring support	Without support, some significant deficits in social communication
Level 2: requiring substantial support	Marked deficits with limited initiations and reduces or atypical responses, restricted interests and repetitive behaviors are obvious to the casual observer and occur across contexts
Level 3: requiring very substantial support	Minimal social communication, marked interference in daily life, restricted interests and repetitive behaviors marked interference in daily life

Figure 1: Autism spectrum levels of severity

Methods and Design

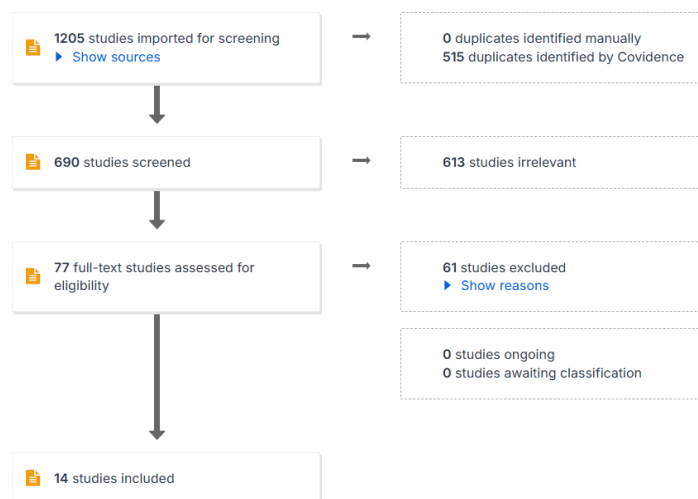


Figure 2: PRISMA study flow diagram of systematic search

Study Design

- Objective: To systemically review existing research on interventions that accommodate the sensory and behavioral needs of patients with ASD in outpatient dental settings.
- Methods: The review was conducted with the following focus question: "What behavior modification techniques have been researched of patients within the Autism Spectrum Disorder that allow completion of a dental exam, prophylaxis, radiographs and dental treatment in the outpatient dental clinic?"
- This study completed a textual analysis of behavior management interventions in the dental setting. PubMed, CINAHL (EBSCO), and Scopus Databases were searched.

Discussion

There are some promising behavioral strategies to be used with ASD patient in the dental clinic. However, not one technique used but two or more utilized simultaneously have the most impact in improving behavior and reducing anxiety of ASD patients. Interdisciplinary care for ASD patients may be a possible comprehensive solution for these visits (i.e. OT, CLS, SLP's) and training programs for patients. Pre-visit questionnaires are recommended for all patients. Level 3's are less likely to be desensitized than Level 1's and Level 2's patients.

Limitations
50% of all studies were randomized controlled trials (RCT's) the other half were not. More RCT's and blinded studies are needed.

Future Directions
Studies completed in an outpatient dental clinic in a hospital setting.. Larger populations for studies.

Results

Category	Intervention/Tool	Key Benefits & Results
Behavior Guidance	D-TERMINED Program	Uses familiarization and repetitive tasking to help children develop cooperation; reduces the need for OR referrals.
	Sensory History	Identifying touch sensitivities helps predict toothbrushing cooperation at home and in-office.
	Desensitization+1	Effective for teaching dental skills and minimal threshold exams; benefits are maintained for up to 2 years.
Technological Solutions	Structured Behavioral Intervention	Involves multiple visits, visual aids, and stepwise progression; improves compliance when followed over 3 years.
	Adapted Visual Aids	Culturally and linguistically adapted aids significantly reduce anxiety during visits.
	Video Goggles + Peer Modeling	Reduces anxiety and improves cooperation during preventive visits like scaling and radiographs.
	Virtual Reality (VR) Headsets	Significantly decreases anxiety and improves behavior during non-invasive procedures.
	iPad App (cATED)	After 8 months of in-vivo desensitization, it enabled the completion of dental exams.
Environmental Modifications	Customized Dental Videos	Increases patient cooperation and family satisfaction more effectively than photo-based social stories.
	Video Modeling (12 Steps)	Improves exam completion rates and reduces the number of visits required for preventive care.
	Sensory Adapted Dental Environment (SADE)+1	Lowers anxiety, pain, and sensory discomfort compared to regular environments; effective for cleanings.
	Green Light Operatory	Pilot studies show a trend toward reduced uncooperative behavior compared to standard white light settings.

+1 – Two studies used the same or a similar intervention tool.

References

References link: <https://tinyurl.com/4ajzcm8>

