

# Video Modeling/Social Stories: Dental Desensitization for Children with Autism

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## Background

Autism Spectrum Disorder (ASD) is a neurological and developmental disorder that affects how people interact with others, communicate, learn and behave.<sup>1</sup> According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), people with ASD have difficulty with social communication and interaction, have restricted and repetitive behaviors, and may have difficulty with sensory input, which can affect their ability to function in school, work and other areas of life.<sup>2</sup> Individuals with ASD may have more difficulty going to the dentist based on sensory, limited communication, or aversions to the dental office, which may result in a higher frequency of dental issues.<sup>3</sup> They are more prone to periodontal disease, have a higher decayed, missing, filled teeth score, poor tongue coordination, sensory preferences, motor coordination and high sensitivity to taste of toothpaste which in turn can increase susceptibility to caries.<sup>3</sup> During dental exams and treatment, there is increased difficulty in children with ASD in part due to their changeable and atypical responses to sensory stimuli.<sup>3</sup>

Visual Pedagogies such as Video Modeling or Social Stories have been documented methods to help individuals with Autism used to help modify behavior.

- **Desensitization** is a technique that systematically can be used by anxious patients at the dental office. This process can “diminish emotional responsiveness to a negative, aversive, or positive stimulus after progressive exposure to it”.<sup>4</sup> According to the American Academy of Pediatric Dentistry (AAPD), the goal of desensitization is to have a patient in a dental office be able to have dental care after positive exposure to the office, to recognize the patient’s fears, to be exposed over time with techniques that relax patient, and to diminish the patient’s emotional response<sup>4</sup>
- **Video Modeling** is when a subject views a video of a person completing a specific skill or behavior that needs to be improved.<sup>6</sup> The subject can view a video of a person accurately completing each achievement of a particular task before performing the viewed activity.<sup>5</sup>
- **Social Stories** are “short stories written in simple words with or without illustration from a first- or third-person perspective to explain a person, concept or skill”.<sup>5</sup> They have short visual components that can include images, photos, cartoons and are paired with short descriptive sentences.<sup>6</sup> Social stories are “based upon the improved responsiveness of patients with ASD to predictable situations, better acquirement of short or simple instructions, and a preference for visual cues”.<sup>5</sup>

*The aim of this pilot study is to determine if children with Autism Spectrum Disorder (ASD) will model demonstrated dental behavior as presented to them in a standard video. This pilot study will assess whether the exposure to a standard video will result in the behavior during the dental appointment.*

## Proposed Methods

- A video of the Franciscan Children’s Pediatric Dental Clinic was created using social story pedagogy to illustrate a dental patient entering the building, sitting in the waiting room, and completing the dental cleaning visit is used to provide guidance for our dental patients.
- A companion dental checklist with still photographs from the video will be used to record the steps of the dental visit. Once each step is completed, a velcro laminated check will be placed next to a photo of the step.
- Randomized clinical intervention will include pediatric patients with ASD between ages 10 - 21 who had been prescribed desensitization and will be randomly assigned to study group (dental video) and control group (no intervention).
- Parents will be emailed the video and subject viewed the video daily for 2 weeks prior to the scheduled dental cleaning/prophylaxis appointment. The dental checklist will be used for both groups to document the amount of steps patients were able to complete during the visit.
- A post parental survey will ask whether study group parents whether video and dental checklist helped their child improve completing a dental visit. The parents of control group will ask to evaluation of satisfaction of the dental visit.

Figure 1. Study Design Flowchart

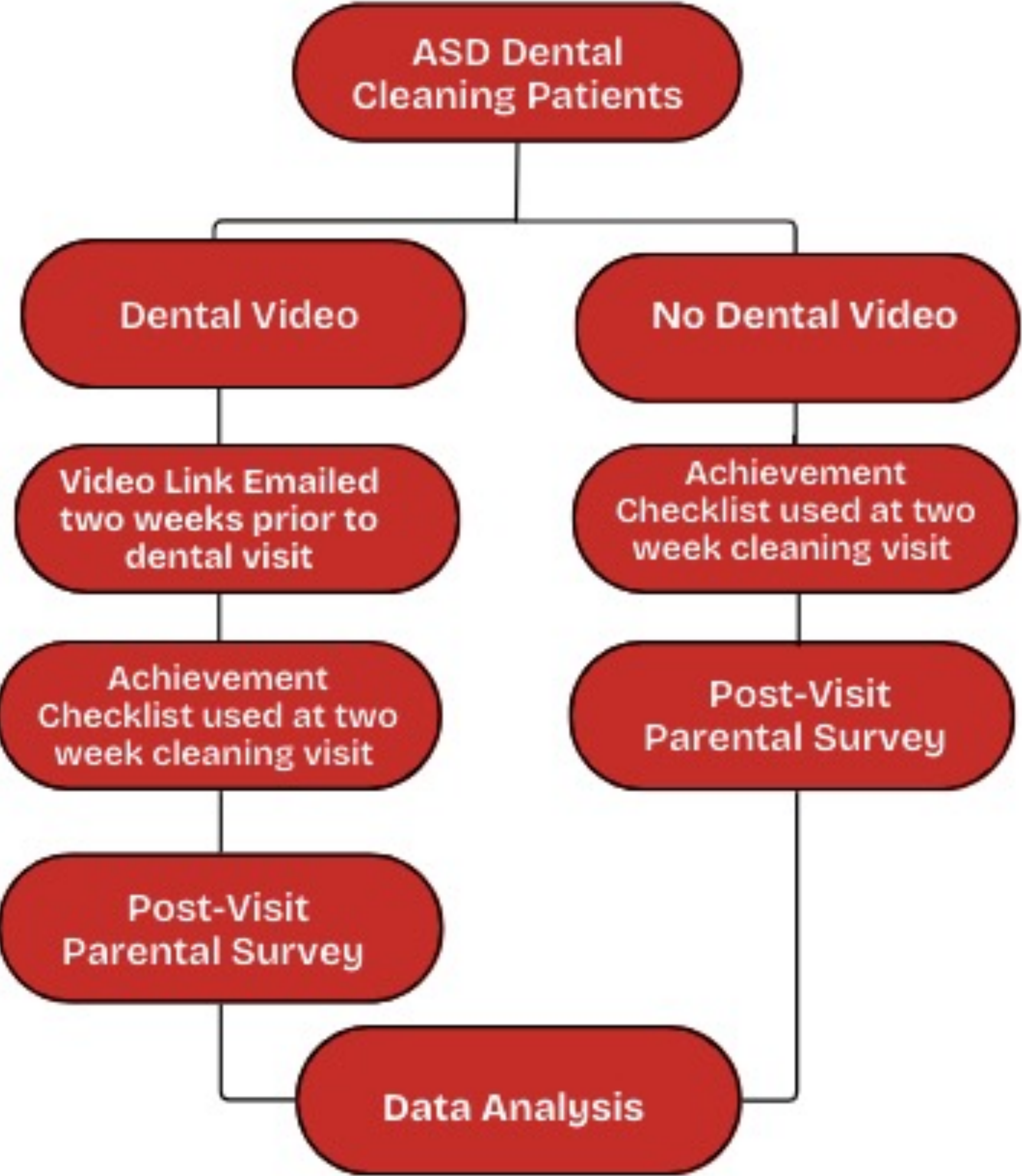


Figure 2. Dental Visit “Achievement” Checklist

My Dental Visit Checklist	
	<input checked="" type="checkbox"/>
	<input checked="" type="checkbox"/>
	<input checked="" type="checkbox"/>
	<input checked="" type="checkbox"/>
	<input checked="" type="checkbox"/>



Figure 3. Still of child modeling how to enter building in Entrance Section of Video



Figure 4. Still from step on Achievement Checklist (Green Checkmark indicates one of the main steps was completed)



Figure 5. Still of child modeling completion of dental prophylaxis and using saliva ejector/water



Figure 5. Social Story page modeling sitting in the waiting room



Figure 6. Social Story page detailing using a dental scaler and floss

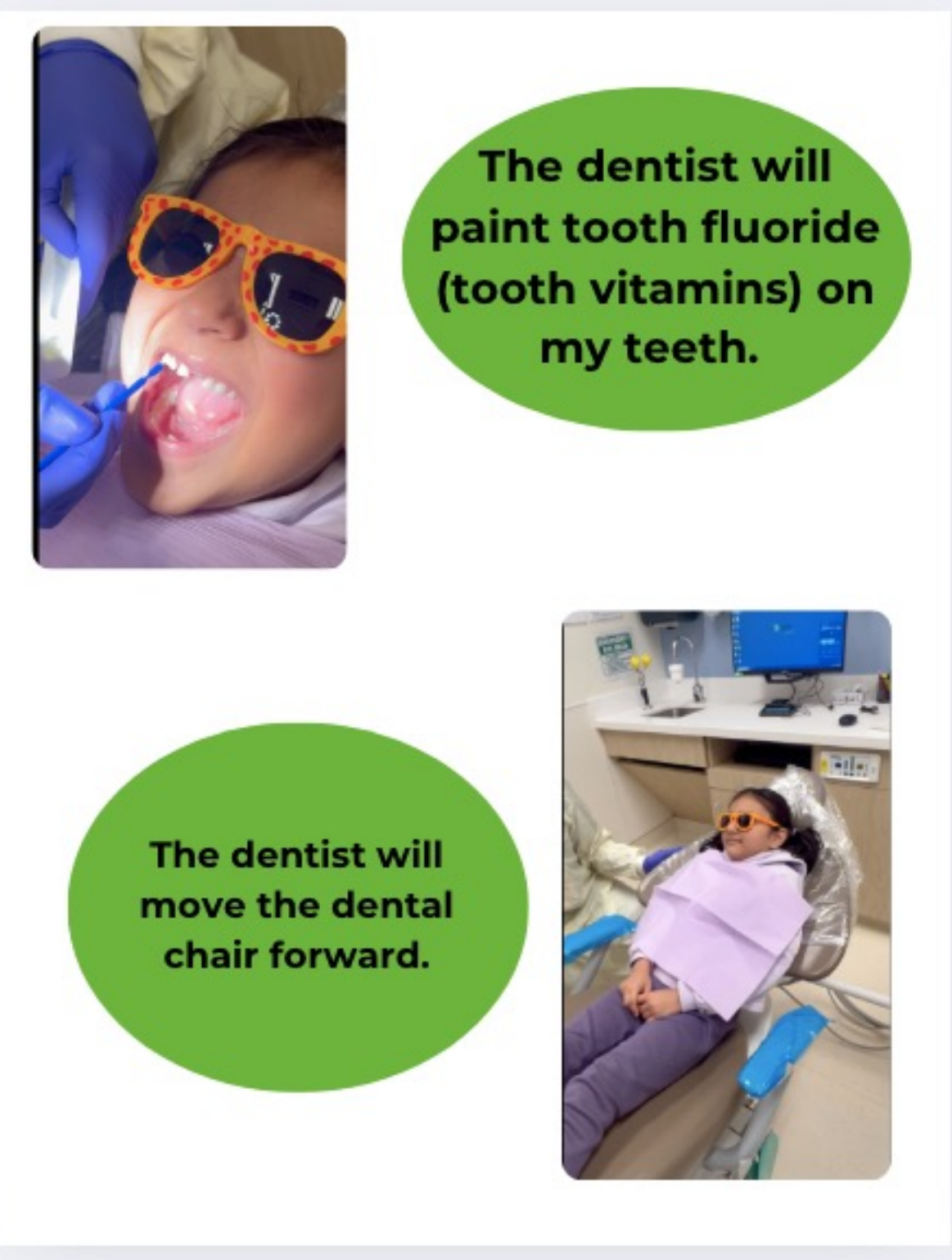


Figure 7. Social Story modeling fluoride application and sitting up in dental chair at end of appointment

## Future Direction and Ongoing Processes

- Pending pilot study for video modeling/dental achievement checklist to assess whether children with ASD model demonstrated behavior for a dental cleaning visit.
- Future study and assessment of how the desensitization tools of a video, dental achievement checklist, social story (Figure 5, 6, 7) impact the resulting behavior of pediatric patients with ASD at dental visits.
- Establishing site specific desensitization protocol (including desensitization videos and social stories) that model dental cleaning for patients with ASD at all four dental clinics for where BU pediatric dental residents see patients
- Form desensitization videos that will apply to more advanced dental procedures such as sealants, restorative, and prepping for oral rehabilitation in the OR.
- Create the video or social story in more languages and for patients with vision or hearing-impaired accessibility.

## Practical Implications

- For ASD patients to complete all steps of a dental cleaning appointment; increased cooperation and reinforcing positive behavior during dental appointments; familiarity with being at the dental office; better oral hygiene; and reduction in dental anxiety or fear.
- Longterm, if the desensitization videos are effective, it can be applied not only to patients who have ASD, but to those who may have other Special health care needs (SCHN) who are currently in the maintenance phase of their dental care.

## References

