Effectiveness of Desensitization in Pediatric Autistic Patients to Complete Treatment

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ABSTRACT

Purpose: The goal of this quality improvement project was to investigate the clinical outcomes of desensitization appointments amongst pediatric dental patients with autism spectrum disorder (ASD) by examining the success of desensitization visits and the number of in-office visits needed to successfully complete the patient's intended dental treatment at Holyoke Health Center.

Methods: Children ages 3-18 years old who had been diagnosed with ASD presented to the Holyoke Health Center Pediatric Dental Clinic in Holyoke, Massachusetts for desensitization appointments. A chart review was conducted on these patients to determine if patients had ASD and had participated in at least one desensitization appointment. The number of desensitization appointments completed and successful treatments completed were then assessed from October 2014 to May 2022.

Results: Seventy-three patients (22 females and 51 males) with ASD who had completed at least one desensitization appointment were evaluated. No significant differences in number of desensitization visits completed were found between groups that were able to complete treatment (2.8 visits) and those that were not (3.2 visits).

Conclusion: Overall, it was determined that the number of desensitization visits completed did not affect the ability of a patient to complete their intended treatment. The ability for patients with ASD to complete treatment is multifactorial and requires individualized planning based on each patient's dental, medical and social histories.

INTRODUCTION

Desensitization is a behavior guidance technique that has been used to help improve behavior and capacity to receive dental care in patients with autism spectrum disorder (ASD).[1] ASD is a lifelong developmental disability that affects one in 59 children [3] and is the third most common developmental disability in the United States.[4] Autism was first described in 1943 by the American child psychiatrist Leo Kanner.[4] Over 700,000 American children have been diagnosed with ASD. This condition occurs throughout the world in all racial, ethnic, and socioeconomic groups, and is almost five times more likely to occur in boys than girls. [2]

Symptoms are typically observed before 2 years of age, and reliable diagnosis is possible at approximately this same time. [2] Early diagnosis is critical, as early initiation of therapy has been shown to be one of the strongest predictors of treatment outcomes for children with ASD.[2] ASD patients have deficits in social interaction and communication and restrictive, repetitive patterns of behavior.[2] These aspects of ASD can make dental appointments unpredictable. Consequently, the unmet dental need in the ASD community is 12 to 15 percent, compared to five to seven percent for typically developing children.[3]

Understandably, children with ASD often have limited cooperation with medical procedures. [1] This is especially pronounced in the context of dentistry, where patients experience various stimuli such as light, sounds, and contact with products that have textures and tastes. [1] In fact, difficult behavior, increased sensory sensitivities, and less compliance with routine aspects of dental examinations, such as wearing protective glasses or participating in an intraoral examination, have been reported by caregivers of children with ASD as challenges encountered during a dental visit. [1]

METHOD

This was a retrospective chart review quality improvement (QI) project that analyzed the number of desensitization appointments completed amongst patients who have autism spectrum disorder, deeming if the appointments were successful or unsuccessful in reaching the treatment goal in children aged three years to eighteen years old. The Holyoke Health Center, where the QI project was conducted, used NextGen dental software and data was extracted using this program. Charts were examined for relevant dental codes including D9920 (Behavior management) and H9920, a health center specific code. Demographic and treatment information was collected from patient charts Data was kept secure and de-identified. Only de-identified data was entered into the REDCap database, which was used for data analysis. The database was password protected on a secure network on a computer at Holyoke Health Center that only the investigators had access to.
The inclusion criteria were patients aged three to eighteen years old who were diagnosed with Autism Spectrum Disorder, including autism, Aspergers syndrome and PDD-NOS, from October 2014 to May 2022, who participated in at least one desensitization appointment. The exclusion criteria were patients under the age of three and over the age of eighteen years old, who did not participate in at least one desensitization appointment and patients with incomplete dental records.

Table 1: Demographics

	Overall (n)	Treatment completed successfully in clinic	Treatment not completed successfully in clinic	P-value
Gender	73	40	33	0.58
Female	22	11	11	
Male	51	22	29	
Age				0.22
3-7	5	1	4	
8-12	45	27	18	
13-18	23	12	11	
Race				0.63
White	49	26	23	
Black	1	1	0	
American Indian or Native Alaskan,	1	1	0	
Asian	1	1	0	
Native Hawaiian or Other Pacific Islander	0	0	0	
Two or more races	0		0	
No Response	21	0 11	10	
Ethnicity				0.77
Hispanic	49	28	21	
Non-Hispanic	13	6	7	
No Response	11	6	5	
Co-morbidities present				0.55
Yes	27	16	11	
No	46	24	22	

Table 2: Results of Desensitization Visits

	Overall	Treatment completed successfully in clinic	Treatment not completed successfully in clinic	p-value
Mean # of desensitization visits completed	2.99	2.8	3.21	0.559
# of desensitization visits completed				0.077
1	34	17	17	
2	12	9	3	
3	6	6	0	
4	4	2	2	
5	5	2	3	
6+	12	4	8	

RESULTS

Seventy-three patients (22 females and 51 males) with ASD who had completed at least one desensitization appointment were evaluated. Males are nearly four times more likely to be diagnosed with ASD than girls. Patients 8-12 years old (45 patients) accounted for most of the patient population and ages 3-7 years old (5 patients) were least accounted for in the patient population. Patients aged 18-21 accounted for 23 patients. Most patients (49 patients) were White and their ethnicity was Hispanic. No significant differences in the number of desensitization visits completed were found between groups that were able to complete treatment (2.8 visits) and those that were not (3.2 visits; p=0.559) (Table 2).
The results showed overall that the number of desensitization visits completed did not affect the ability of a patient to complete their intended treatment. The ability for patients with ASD to complete treatment is multifactorial and requires individualized planning based on each patient's dental, medical and social histories.

CONCLUSIONS

The following conclusions can be made from the findings in this quality improvement project:
1. The number of desensitization visits completed did not affect the ability of a patient to complete their intended treatment.
2. The ability for patients with ASD to complete treatment is multifactorial and requires individualized planning based on each patient's dental, medical and social histories.

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