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**The Effects of Social Stories as Behavior Intervention for People with Autism Spectrum
Disorder**

by

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A Starred Paper Proposal

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Chapter I:

Introduction

Autism refers to a broad range of conditions characterized by challenges with social skills, repetitive behaviors, speech, and non-speaking communication. The three core features are a problem with social interactions, which is often the heart of the matter; a problem with language; and a tendency to have restricted interest and repeated, stereotypic motor behaviors. That is the so-called autistic triad, and you need to have two of the three and to develop them by the age of 3 to be considered autistic (Raff, 2010, p.2), Approximately 31% of children who have ASD have intelligence quotients (IQs) below 70 (Autism Statistics and Facts, 2020).

In 2013, the Centers for Disease Control reported Autism in one in fifty-nine children were affected, but according to reports (Autism Statistics and Facts., 2020) numbers increased to one in forty-four. The increase weighs heavily on families and educators as they work to facilitate the needs of students with severe cases of Autism. The higher rates of Autism diagnoses over the years, has resulted in an increased need for proven ways to communicate with those individuals within varying situations when in high stress. Many students diagnosed with Autism have limited language skills that can affect the student's ability to communicate wants or needs from their caregivers or staff. There are estimates that a proportion of children with Autism Spectrum Disorder who are minimally verbal vary from twenty five to thirty five percent (Rose et al., 2016, p.1).

In addition to challenges with communication, often those diagnosed with ASD have co-occurring psychiatric disorders; meaning two or more disorders simultaneously. I work in a Federal Setting IV Special Education Intermediate District with students that range from high school aged (14-18) to Transition age (19-21). Setting IV is a nonresidential, public-school

facility that is separate from general education settings, where students are away from a mainstream classroom for more than fifty percent of their school day (National Center for Education Statistics.,2023). This environment is still considered the least restrictive for children who are placed in this setting. My current classroom consists of ninth, tenth, and eleventh graders each of whom have an Individualized Education Plan (IEP) with a primary diagnosis of Autism Spectrum Disorder. Each of my students have co-occurring disabilities that include Other Health Disability (OHD), Specific Learning Disability (SLD), Developmental Cognitive Disability (DCD), and Speech Language Impairments (SLI). Along with these diagnoses each student in my class struggles with challenging behavior which affects the student's ability to attend school in a general education setting. All of my students fall under the umbrella diagnosis of "Severe-Profound," meaning that each of them must be closely supervised as they have limited self-protection skills, limited self-care abilities, severely restricted sensory and motor functioning, and may be in need of on-site nursing care.

As a teacher in a setting IV school, I am always working to develop more efficient and accurate modes of communication with those of my students who are completely non-speaking and found that social stories are another form of communication with them when there are feelings that they may not be able to express. Approximately 30%-40% of children with ASD remain minimally verbal (MV) into adulthood (Howlin & Moss, 2012, p.3). Social stories are a way to help students comprehend in methods more conducive to their abilities, these small books are personalized to their needs. The ability for students with autism to clearly state their needs ties directly to their ability to communicate their needs when they are upset.

I stumbled upon social stories and their use when a teacher that I worked with as an Education Assistant (EA) would talk about them for what felt like every situation. She used

social stories for any major or minor change in the students' day to day life or school schedule as well as to explain behaviors to demonstrate in social situations or for following school rules. Depending on the story that was written, the words used, and the student for whom they were written, their use varied in effectiveness. At times they felt helpful, and other times felt like a setup for an increase in challenging behaviors. Depending on the student and their goals, if they didn't particularly like what was in the story, we would find out quickly.

I chose social stories as my topic because of my direct observation of their effectiveness with students. Often students with Autism are misunderstood because they don't use the same forms of communication as neurotypical students and their cognitive differences frequently make it difficult for them to process information or make sense of the big feelings they may experience throughout the day. Over the past 10 years, researchers have shown Social Stories to be successful when applied to a wide variety of problem behaviors including aggression, screaming, grabbing toys, using inappropriate table manners, and crying (Kuoeh & Mirenda, 2003, p.3) (Crozier & Tincani., 2005, p.1) For these reasons, all possible modes of communication should be available to this population of students, as well as any other techniques or approaches that may assist in their improved understanding of information.

When I discovered social stories I didn't fully understand their purpose or whether or not they really had a positive effect based on my own experience. Upon becoming a teacher, I adopted their use with my students. I use them consistently, but am not always sure that I'm applying them properly. I have been using what I learned about them from my work as an EA since within my formal education, there has been no class or certification focused on social stories or their proper application. There is wide variation in the implementation of Social Story interventions described in the literature, particularly in regard to the use of supplementary and

comprehension strategies (Reynhout & Carter, 2007, p.176; Rust & Smith, 2006, p.1; Sansosti et al., 2004, p.6)

Research Question

With my research I will address the following question: How effective are social stories for students with Autism Spectrum Disorder that have increased behavior support needs?

Importance of Review

The work done in schools with and for students with ASD, is ever evolving and continued evolution of techniques is necessary for prevention and intervention of challenging behavior exhibited by those students. There is need for concrete evidence that social stories are impactful as forms of behavior prevention and intervention. Teachers are directed to use them but are not given specific training to do, and the studies regarding effectiveness are conflicting.

Focus of Review

This literature review is focused on the use of social stories as strategies to work through difficult behaviors with adolescents with Autism. The children in each study range in age from one to twenty-one. The studies that I am using for this review were published from 2010-2022 and include BMC Psychology, Education and Treatment of Children Vol. 39, Journal of Applied Behavior Analysis, Journal of Intellectual Disabilities, The SAGE Online Journal, Journal of Biology, JIDR, Elsevier, HHS Public Access, BMC Biology, American Journal of Speech-Language Pathology, and Interdisciplinary Journal of Applied Family Science.

Definitions

Autism Spectrum Disorder: Autism, or Autism Spectrum Disorder (ASD), refers to a broad range of conditions characterized by challenges with social skills, repetitive behaviors, speech and non-speaking communication. According to the Center for Disease Control, Autism

affects an estimated one in fifty-nine children in the United States today (Autism Statistics and Facts, 2020).

Social Story: “Social Stories describe a situation, skill or concept in terms of relevant social cues, perspectives and common responses in a patient and reassuring manner that is easily understood by its audience” (p. 1). In particular, social stories use words and/or images to explain specific occurrences, appropriate behavior, effective social interactions, concepts, or skills. They are designed to benefit those with developmental delays, challenges with socialization, Autism, or other difficulties with comprehension. (Carol Gray Social Stories, 2023)

Federal Setting: Refers to the percentage of time a student spends in special education. Federal Setting, I: 0-21% in special education, Federal Setting II: 21-60% in special education, Federal Setting III: 60% or more in special education, Federal Setting IV: separate special education site, Federal Setting V: public hospital, day treatment, correctional facility etc. (MN Department of education, 2023)

Positive Behavior Intervention and Supports. Positive behavioral interventions and supports (PBIS) is a way for schools to encourage good behavior. With PBIS, schools teach kids about behavior, just as they would teach about other subjects like reading or math. The focus of PBIS is prevention, not punishment (Lee, 2014)

Challenging Behavior: Challenging behavior can involve harming personal property or causing physical or emotional harm to others, and may range from verbal to physical abuse. Challenging behavior violates social boundaries, can be obvious or secretive, and can lead to breakdowns in relationships. Occasional aggressive outbursts are common and even normal in the right circumstances (Gabbey, 2019)

Intervention: In general terms, classroom intervention is a set of steps an educator takes to help a child improve in their area of need by removing educational barriers. There are four key components of classroom intervention:

1. Proactive: Deals with areas of need before they become a larger obstacle to education.
2. Intentional: Specifically addresses an observed weakness.
3. Formal: Uses targeted methods for addressing specific needs and tracks progress.
4. Flexible: Adjusts methods based upon the needs of the student (Lynch, 2019).

Reinforcement: “Reinforcement is the process in which a behavior is strengthened by the immediate consequence that reliably follows its occurrence”. “To “strengthen” a behavior is to make it occur more frequently - when a type of behavior is followed by reinforcement there will be an increased future frequency of that type of behavior”. (Malott et al., 2004).

Evidence-based practice: Refers to practices that have been shown to be effective based on actual evidence. In education, most of the time, this evidence is the result of studies or the collection of a lot of data from many different sources. (Duffy, n.d)

IDEA: “The Individuals with Disabilities Education Act (IDEA) is a law that makes available a free appropriate public education to eligible children with disabilities throughout the nation and ensures special education and related services to those children. The IDEA governs how states and public agencies provide early intervention, special education, and related services to more than 6.5 million eligible infants, toddlers, children, and youth with disabilities” (About IDEA, 2019).

Least Restrictive Environment: “LRE is part of IDEA. IDEA says that children who receive special education should learn in the least restrictive environment. This means they

should spend as much time as possible with peers who do not receive special education. IDEA says two things about LRE that are important to understand when working with the IEP team: 1) Your child should be with kids in general education to the “Maximum extent that is appropriate”. 2) Special classes, separate schools or removal from the general education class should only happen when your child’s learning or thinking difference—his “disability” under IDEA—is so severe that supplementary aids and services can’t provide him an appropriate education” (Odom et al., 2019, p.176).

Chapter II:

Review of Literature

The goal of this literature review is to gain understanding on how social stories can impact the behavior of a student. This chapter focuses on the different uses of social stories as an intervention during times that students are having challenging behaviors. In some of the articles social stories are the only intervention used but in others it is used in concert with an Evidence Based Practice. The hope is to understand whether or not social stories can improve a student's social skills and behaviors within the classroom and beyond. The articles are chronologically ordered from older studies to newer studies.

Social Stories as an Intervention

Interventions are defined as a set of steps to assist a student in an academic or, in this case, social goal. There are times that there are school-wide interventions or interventions that are put in place for a specific student. The following section includes reviewed studies that focus on using social stories as a sole intervention.

In the Tincani et al. (2006, p.8) article, the treatment was focused on decreasing the disruptive behavior of a child with ASD. The participant was an eight year old male named Alex. Alex attended a private school with students that were in Kindergarten. He was a bit older than the other students but his placement was based on his cognitive ability not his chronological age. . Alex did not participate in any pre-assessment for this intervention. He was chosen to participate based on some very specific criteria which included diagnosis of Autism and presence of prerequisite skills (including emergent literacy skills and demonstrated ability to sit and read a book with adult support). Lastly classroom teacher's willingness to be a part of the intervention.

Alex's teacher identified that the target behavior that she needed help with was Alex's "Talking out" during class. This meant he would talk during independent times when he didn't have direct attention from staff in the classroom. Alex sought attention with no discrimination other than the need for the person to be an adult. His "talking out" did not change even if he was seated in different seats throughout classroom time. Alex would talk until instructed to be quiet. There were three phases to the intervention: baseline, the intervention, then the intervention with prompts. Afterward there was a maintenance period established.

After Alex's thirty minute observation there was a set baseline of data which gives an understanding of where Alex's behavior was prior to the intervention. Alex was given a social story that contained a descriptive meaning: a description of the expectation and a directive based on the targeted behavior. The story followed the guidelines of an emergent reader as Alex was just beginning to learn to read. After his initial observation Alex was observed for thirty minutes in his regular classroom setting. In the intervention stage Alex was read the social story immediately before the observation period. Alex received six sessions then the observation was scaled back to once weekly for 30 minutes.

The second intervention phase the social story was resumed with the evidence based practice of verbal prompting in addition to the social story. The entire classroom staff knew and understood the intervention and all knew what the expected outcome was. Two of the initial interventions were completed without any verbal prompting. Once this was done, two weeks passed before the final probes were performed.

Alex demonstrated a decrease in the behavior of "talking out" after the completion of the intervention. The average of "talk outs" during baseline was 11.2, during the social story, there was a decrease to 2.3 per thirty minute session. The combination of prompting and the social

story, the “talk outs” decreased to .2 times in a thirty minute session. During the two maintenance sessions Alex’s talkouts were at zero. The results showed that a modified social story with prompting worked best for Alex. Alex’s results were clear that he was successful in decreasing the negative behaviors based on the use of Social Stories and Verbal Prompting.

In the second study, Scattone et al. (2006, p.11) made use of social stories in a hope to decrease specific behaviors in three male students ages eight and thirteen named Drew, Billy and Steven, who were all previously diagnosed with ASD. Scattone et al. (2002) states that social stories transfer stimulus control from the teacher and peers directly to the child with Autism and can be used in a variety of ways. The focus of this article is on their use in reducing challenging behaviors in three students which included aggression, screaming, grabbing toys, using inappropriate table manners, and crying. The students chosen were selected based on their ability to initiate or respond appropriately during free-time activities.

The students were in a Self-Contained classroom. Self-contained special education classroom placement is considered best practice when students require a specialized setting that allows for intensive academic and social supports that are not readily available in general and inclusive classroom environments (Algozzine et al., 1988; Fisher & Meyer, 2002; Maggin et al., 2011). All of the students studied had intelligible speech and were all capable of speaking and reading complete sentences.

The intervention was assessed based on social interactions that were measured based on the percentage of intervals that each student had appropriate social interactions during 10 minute observations. The appropriate interactions were graphed for each individual participant daily as a percentage of intervals. Steven’s behavior didn’t initially change after the introduction of the Social Story. The mean level of appropriate social interactions during the baseline was 1% of

intervals (range = 0%-3%) and 4% (range =0%-65%) during intervention (Scattone et al., 2006, 215)

Drew had the largest increase in appropriate social interactions, Drew's ranged from 0%-18% of intervals during baseline (M=7%). (Scattone et al., 2006, 216). For Billy, percentage of intervals of appropriate social interactions during baseline ranged from 9% to 22% (M=13%) (Scattone et al., 2006, 216). All three of the students experience some level of success with Drew being the largest increase at 40% in appropriate behaviors. Steven had an increase of 35% , and Billy had an increase of 32% positive behavioral change. Both Billy and Drew had some levels of positive behavior so the scale was up and down throughout the intervention.

The third study via Chan and O'Reilly (2008, p. 5), used social stories as interventions for two students with Autism that also had language skills that were appropriate for social interactions but had difficulty applying those skills. The study's goal was to increase social behaviors and increase their ability to apply their social skills in an inclusive classroom setting.

This study was done with two kindergarten students Matt and Ted, who attended full time public elementary schools in different locations. Both students had a teaching assistant and each intervention was laid out in a training session format which was held just before the start of the school day. The students were observed for one hour during circle time on the days that the sessions took place and baseline data was collected on the target behaviors during the hour-long observation.

Matt's goal was to stand or sit within a reasonable distance between him and his peers during circle time. He also made vocalizations and noises along with comments that were irrelevant to the classroom activities. Ted's goals were to raise his hand at appropriate times and

make social interactions with peers like asking peers to play with him during free time. Ted also made vocalizations and comments that were inappropriate for the classroom activities.

Once baseline data was collected, the students received interventions one to four times per week. Matt received interventions for five weeks and had a total of thirteen intervention sessions. Ted received interventions for ten weeks with a total of eighteen interventions. The social stories for these interventions were stories that only pertained to the participants' targeted behaviors. Two trained graduate students were able to take 32% of the data with the additional data taken by parents, teachers, and teaching assistants who were also trained on how to take the data so that it could be as accurate as possible.

The intervention was to read a story then ask three comprehension questions that are easily understandable to each student. The students would then engage in role play of the targeted behavior. The evidence-based practice of prompting would then be applied along with positive reinforcement following the comprehension questions.

The steps were correctly implemented ninety six percent of the time and results showed that Matt's reached his target behaviors in 95% of the given opportunities for hand raising, he reached 100% decrease for inappropriate social interactions, 88% decrease for inappropriate vocalizations. Matt had an immediate decrease in inappropriate social interactions and behavior. Matt also had a progressive increase in hand raising and a reduction in inappropriate vocalizations. Ted experienced a similar increase in hand raising and appropriate social initiations. Ted's inappropriate vocalizations decreased steadily.

The fourth study, written by Schneider and Goldstein (2010, p.12), made use of social stories along with visual schedules as a way to further on-task behavior and decrease the

possibility of disruptive behaviors. There were three participants who ranged from kindergarten to fifth grade.

Each participant had to meet the criteria of being diagnosed with autism to be considered for the intervention study. They also had to demonstrate off-task behaviors and show impairment with verbal and social communication. These students did not receive services or intervention for impairment or off-task behaviors.

Each student was in a self-contained classroom and were assessed using the Social Skills Rating System (SSRS; Gresham & Elliot, 1990) and Oral and Written Language Scales (OWLS; Carrow-Woolfolk, 1995) at the beginning of the study. Three students were used in this study, two of the students, Jack and Nolan, were moved to mainstream classrooms. The move did not affect the target behaviors in any way. The behaviors identified were all selected because they tended to distract other children in the classroom. Each social story included information about the targeted behavior.

The first participant Montel was ten years and three months old and attended fifth grade in a self-contained classroom with other children in third and fifth grade. Montel was considered significantly delayed according to the oral and written language scales. Montel struggled with staying on task, following directions, controlling impulses and making eye contact. He also demonstrated echolalia, perseveration, and tantrums. Montel displayed on-task behaviors 29% of the time prior to the intervention. After baseline during the first interventions he increased by 21% and at some points during the intervention he was able to maintain 100% on-task behavior.

The second student was Jack who was in a self-contained kindergarten classroom initially but was soon placed in a full time mainstream classroom. Jack also struggled with on task behaviors and had a baseline of 55% on task. During the intervention his mean increased to 65%.

The final student was Nolan who was also in a self-contained classroom. Nolan was also attempting to change his on-task behavior. His baseline for on-task behavior was sixty percent and increased to seventy three percent over the intervention.

The change in classrooms did not seem to affect any participant's behavior in any way and the study showed that classroom on-task behavior can be improved by the use of social stories. The treatments were with social stories coupled with visual schedules. There were changes which varied across participants. Montel demonstrated the lowest on-task behavior at baseline but still saw significant positive change.

In the fifth article, Chan et al. (2011, p.7), a multiple baseline study was done with students for behavior interventions. The difference in this study was that the implementation of the intervention was completed by three pre-service teachers that were all undergraduate students enrolled in a special education certification program, and the data was taken by Doctorate students that were previously exposed to the study. There were three participants in this study. David was an eight year old male with mild/moderate Autism according to the Childhood Autism Rating scale (CARS). David attended second grade in a general education setting for about seventy five percent of the day. He spent the other twenty five percent of his day in a special education resource room. Lloyd was an eight year old male in the mild/moderate range of Autism according to CARS, and attended a general education classroom for 75% of his day and spent the remainder of his day in a special education classroom. Quentin was an eight year old male categorized as having severe Autism according to CARS.

The implementation of the intervention was done in two ways; one was immediately prior to the situation where the behaviors most often occurred and the other was delayed based on the individual participant's need. David's delay was three and a half hours, Lloyd's was four

and a half hours, and Quentin's differed slightly because he started the day in a general education classroom and received his social story at the end of the day which meant about eighteen hours for his delay because his intervention happened the following day.

Each of the teachers were trained by the initial author to implement the social story intervention and they were given a checklist describing steps for proper implementation which they reviewed with the researcher. A role play was then conducted for which they were given immediate feedback. The training ended when the teachers were able to independently complete one hundred percent of the steps on their checklist.

In this study, two types of social validity were collected. First, the data regarding ease of implementation, importance of target behaviors, willingness to participate, and effectiveness of the intervention. The next form assessed the clinical significance of the behavior change. This was done by comparing the baseline and the intervention levels of each of the participants' behavior set side by side with behavior of peers without disabilities.

David showed low rates initially but the next data point showed an increase immediately after the intervention. Lloyd had variable responses initially and higher responses during immediate conditions. Quentin had variable rates of response during baseline, but showed improvement during the delayed version of the intervention. The intervention produced mild to moderate improvement in the targeted behaviors of each participant.

A seventh study by Leaf et al. (2012, p. 18), was conducted with six Autistic children and adolescents. Researchers taught eighteen different social skills with social stories. Teachers either read the stories to the participants aloud or students read their stories on their own. Comprehension questions were used as part of the intervention. This study paired social stories with the teacher interaction procedure which is another way to teach children social skills.

All students who participated in this study were male and ranged in age from five to thirteen. Each of the boys who were diagnosed with autism were required to meet additional criteria that included the ability to speak in full sentences. They also had no immediate history of self-injurious behavior, severe aggression or severe disruptive behavior. The standard score of 70 or higher was scored on the Peabody Picture Vocabulary Test IV (PPVT-4).

The first participant, Buddy, was six years old and in the twenty seventh percentile for receptive language with a standard score meaning that in the number of students who are in his age group he is within 27% of them overall for receptive language with a standard score of ninety one (six years one month age equivalent). Buddy, was in a general education kindergarten classroom without Education Assistant support but had previous experience with social stories.

The second, Hank, was five years old and in the ninety seventh percentile for receptive language with a standard score of one hundred and twenty-eight (eight years three months age equivalent). Hank was in an early intervention clinic for children with Autism and also had prior history with social stories.

Third was Nick, a five-year-old who ranked in the eighth percentile of receptive language with a standard score of 79 (three years eleven months age equivalent). Nick attended a general education kindergarten classroom without any Education Assistant support and also had previous history with social stories. The fourth participant, Lang, was five years old and placed in the sixty first percentile of receptive language (five years eleven months age equivalent). Lang was in a general education kindergarten classroom with Education Assistant support and had previous experiences with social stories.

Fifth was Apollo who was twelve years old and placed in the forty seventh percentile of receptive language (twelve years one month age equivalent). Apollo attended a general

education, sixth grade classroom without Education Assistant support and had previous experience with social stories. Lastly, there was Mickey who was thirteen years old and placed in the seventy third percentile of receptive language (fourteen years three months age equivalent). He attended a general education junior high school.

For each participant, a forty-five-minute session was conducted for three to six days per week in either a research room at Midwestern University or at each individual's home. Probes were conducted in the same locations. The study consisted of three total phases; an initial baseline, intervention, and maintenance. Some skills were taught simultaneously during the intervention stage. Each participant was given a probe for each of the six social skills being taught. They were all given five-minute breaks to play with toys, then the research assistant would implement generalization probes with adults. After the six generalization probes were conducted for Buddy, Hank, Nick and Lang the session ended. Apollo and Mickey both needed another break.

Each student was presented two social skills as well as four other skills during either the baseline or maintenance phase. The participants were given a five-minute break between each performance probe and following implementation of each procedure. After each session ended there was a ten-to-twenty-minute break for participants to play with toys. Once the participant reached mastery criterion for a social skill, generalization probes were conducted for certain sessions, followed by all three types of probes being implemented three more times.

Results showed that teaching interaction procedures produced higher levels of skill-specific steps than social stories did. All of the participants did meet mastery but Buddy, Lang and Mickey met mastery using social skills where the other participants needed interaction procedure. Apollo and Mickey were exposed to pre and post intervention generalization probes.

Buddy Nick and Lang were only exposed to post generalization. After the intervention Buddy, Lang, and Nick all had higher levels of skill-specific steps for skills that were taught with the teaching interaction procedure.

Table 1*Summary of Findings: Behavior Intervention*

| <u>Author</u> | <u>Study Design</u> | <u>Participants</u> | <u>Procedure</u> | <u>Findings</u> |
|---|---------------------|---|---|---|
| Scattone, Wilczynski, Edwards and Rabian (2002) | Quantitative | 3 participants ages 7-15 years old | | |
| Crozier, Tincani (2005) | Quantitative | One 8-year old participant | Used both social stories and verbal prompting. Data was collected at baseline until the two week maintenance phase | Social stories alone were effective but were more effective with verbal prompting. The student had 100% mastery of the skill after the intervention |
| Scattone, Tingstrom, and Wilczynski (2006) | Qualitative | 3 participants ages 8 and 13 | Data collected based on IQ and percentage of times the participant responded appropriately over a period of time. | One student had the best results. Possibly because of age or cognitive skills |
| Chan and O'Reilly (2008) | Qualitative | 2 participants ages 5 and 6 years old both in kindergarten. | Data was collected as frequency counts. Study was completed over a period of 5 weeks for one participant and 10 weeks for the other | There was a steady increase of desired behavior and decrease of targeted behaviors regarding social interactions and vocalizations. |
| Schneider, | Qualitative | 3 kindergarten | Data was | There was a |

| | | | | |
|---|--------------|---|---|--|
| Goldstein (2010) | | participants | collected by paraprofessionals inside of the classroom during the time that behaviors were most likely | decrease in behavior and an increase of on-task behavior. |
| Samuels, and Stansfield (2012) | Quantitative | 4 adult participants all that live in a group home setting | Data was collected by multiple staff with no clear direction | A decrease in inappropriate behaviors were noted for each participant |
| Chan, O'Reilly, Lang, Boutot, White, Pierce and Baker (2011) | Quantitative | 3 children all aged 8 with mild to severe CARS ratings | Data was completed by doctorate students with fidelity. Two different intervention styles. One immediate and the other delayed set hours based on participants. | There was a moderate amount of decrease of the targeted behavior in all of the participants over time with both types of interventions |
| Leaf, Oppenheim-Leaf, Call, Sheldon, Sherman, Taubman, McEachin, Dayharsh and Leaf (2012) | Qualitative | 6 children and adolescents that are in varied school settings | Data was collected using a parallel design of simultaneously using social stories and teaching interaction procedure | All met mastery of the 18 social skills that were introduced. 3 of the participants did it with social stories only. |

Overall, the studies show that there is variation between whether the studies showed real effectiveness over a longer period of time. The other issue that I noticed was that there was only one participant. It's unclear if the results would have been consistent using these prompts with multiple kindergarten students with a similar diagnosis of Autism.

Chapter III:

Conclusions & Recommendations

This paper's purpose was to determine the potential usefulness of personalized social stories as modes of intervention within populations of Autistic students that have high behavioral difficulties. As mentioned above, social stories have been used for years both in special education settings as well as within supportive living environments (Crozier & Tincani, 2007, p. 1804). Unfortunately, little research had been done to show the effectiveness of these commonly used interventions which is part of the reason I chose social stories as my paper topic (Chan et al., 2011, p. 405).

In Chapter I, I included a basic introduction to social stories, an overview of their use, the research question fueling this paper, a list of defined terms frequently used within both the paper and the studies examined within it, a discussion of the importance of the review of information and a statement of focus for the paper.

In Chapter II I introduced the studies and research whose information I examined and reviewed when preparing this paper. In this, the third and final chapter, I will go over what I have determined based upon this research and include recommendations also based upon these findings.

Conclusions

For this work, I analyzed thirteen different journals, studies, articles, and publications published between 2005-2022 which addressed the use of social stories within both children and adults with Autism as interventions to reduce or increase behavior. They included the BioMed Central (BMC) Psychology, Education and Treatment of Children Vol. 39, Journal of Applied Behavior Analysis, Journal of Intellectual Disabilities, The SAGE Online Journal, Journal of

Biology, Journal of Intellectual Disability Research (JIDR), Elsevier, Human and Health Services (HHS) Public Access, BioMed Central (BMC) Biology, American Journal of Speech-Language Pathology, and Interdisciplinary Journal of Applied Family Science.

From the above publications I chose six studies which included Autistic students ages five to seventeen and adults up to age twenty-one and were significantly affected by their disability. Each of the studies addressed how the participant's behavior affected their learning or quality of life and how the intervention of social stories most often significantly changed their behavior.

In Crozier and Tincani (2005, p.13), one eight-year-old boy was found to have greatly benefited from the use of social stories in his daily school routine, especially with the inclusion of verbal prompting, and he achieved one hundred percent mastery of the skill following the intervention (use of social stories). In the Scattone et al. (2006, p.11) study, arguably a less effective example, three students' reactions to social stories were measured based on their IQs and ages. At the end of the study it was found that they all benefited from the use of social stories, but the oldest students most of all. It was speculated that he achieved more highly because of his age and cognitive ability.

With the Chan and O'Reilly (2008, p.7) study, two participants were found to have benefited from the use of social stories over a five-to-ten-week period. Their use helped to decrease disruptive behavior and increase desired behavior which ultimately increased learning ability. The fourth study by Schneider & Goldstein (2010, p.), included three kindergarten students and showed that with the use of social stories, their challenging and disruptive behaviors were significantly decreased over the course of the study.

The fifth study by Chan et al. (2011, p. 7), included three students, all aged eight and showed that even with varying intervention styles (ways of using social stories), all students experienced at least moderate improvement where reduction of challenging behavior was concerned. The final study by Leaf et al. (2012, p. 14), included six student participants within various school settings. With the use of social stories and teaching methods, all of the participants met mastery of the eighteen social skills that were introduced- three of whom did so with the use of social stories alone.

Recommendations for Future Research

Each of the studies included in my paper have shown that even with varying methods, varying fidelity in result tracking, and inconsistent procedures from case to case, the use of social stories is, at the very least, minimally beneficial to all participants. With more reliable data to prove their efficiency, social stories could be used more effectively, applied more widely, and taught more effectively to potential educators. To more concretely show this conclusion, it is recommended that more studies with identical administration, data collection, and larger groups of participants of all ages be conducted. My second recommendation is that social stories should be part of the curriculum for those training to be special educators and caregivers.

Summary

In summation, my review of each of the above studies heavily suggests that social stories are effective interventions to affect behavior change in Autistic individuals with ASD as well as improving learning ability. My personal, professional, first hand experience upholds this belief as does the demonstrated use of social stories by educators within the district of eight hundred plus special education students within which I work. More comprehensive methods and training

are necessary, but regardless, the use of social stories benefits Autistic individuals who need multiple, diverse teaching techniques.

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