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The effectiveness of social stories on children with autism spectrum disorder: A literature review

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The Effectiveness of Social Stories on Children with Autism Spectrum Disorder:
A Literature Review

An Honors Program Project Presented to
the Faculty of the Undergraduate
College of Health and Behavioral Studies
James Madison University

In Partial Fulfillments of the Requirements
for the Degree of Bachelor in Science of Nursing

by Caroline Elizabeth Johnson

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Accepted by the faculty of the Department of Nursing, James Madison University, in partial fulfillment of the requirements for the Honors Program.

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Preface

Autism Spectrum Disorder (ASD) includes a wide range of neurodevelopmental disorders which are characterized by communication difficulties, social impairments, and restrictive, repetitive behaviors (National Institute of Neurological Disorders and Stroke, 2014). The National Institute of Neurological Disorders and Stroke states that the classic hallmark sign of autism is impaired social interaction (2014). A child with ASD may not respond when called or maintain eye contact; they have difficulty understanding social cues like tone of voice or facial expression (National Institute of Neurological Disorders and Stroke, 2014).

It is estimated that 1 in 88 children have some form of autism, with the most obvious signs and symptoms emerging between 2 and 3 years of age. Boys are four times as likely to have the disorder than girls. (National Institute of Neurological Disorders and Stroke, 2014). Unfortunately, ASD is a disorder people have to live with their entire lives. As of now there is no cure for autism, however there are several behavioral interventions and therapies that are helpful in treating different symptoms of autism (National Institute of Neurological Disorders and Stroke, 2014). Therapy is needed for life, but when a good regimen is found people with autism are able to be successful, as well as work and live independently (National Institute of Neurological Disorders and Stroke, 2014). One therapy found to be successful is the use of Social Stories.

The National Autistic Society (2015) describes Social Stories as a short descriptions of a particular situation, event or activity, which include specific information about what to expect in that situation and why. Social Stories can be used in a wide range of situations including: developing social and self-help skills, helping a person with autism understand how to behave in certain situations, helping with coping in regard to changes in routine and stressful situations, providing positive feedback (The National Autistic Society, 2013).

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Finally, I would like to thank God, for His unending love, for walking with me in my times of need, and for providing me with the strength and will to succeed.

Purpose

The primary goal of Social Stories is to address debilitating difficulties and are written with the goal of objectively sharing important social information with individuals with ASD (Gray, 1998). The purpose of this literature review was to look at the effectiveness of Social Stories on children with autism.

Methods

Articles were found using various databases including EBSCOhost, ERIC PSYCINFO, CINAHL, and EBSCO Health's Sport Discus. Keywords used during the research process were 'social story, autism, children, and ASD.' Articles were chosen based on the following inclusion and exclusion criteria: articles were included if they were peer reviewed, scholarly articles, written in the past 10 years, and had some type of social story intervention.; articles excluded if published over 10 years ,and were opinion-based articles. Out of these requirements, seventeen articles were then chosen. (See Table 1.1)

Results

Seventeen relevant research reports were retrieved during the search period. All seventeen reports were published in journals and appeared between 2005 and 2015. Table 1.1 contains a profile of these reports. As shown in Table 1.1 the effectiveness of the social stories affected behavior communication, social skills, tasks, and anxiety. The most frequently stated methodology was quantitative studies. The predominant research purpose was to explore the effectiveness of social stories on children who have ASD and the primary mode of data collection was observation. Levels of evidence were used to determine the effectiveness of social stories as an intervention. These levels include:

Level I: Evidence from a systematic review or meta-analysis from all relevant randomized clinical trials (RCTs), or evidence-based clinical practice guidelines based on systematic reviews of RCTs.

Level II: Evidence obtained from at least one well-designed RCT.

Level III: Evidence obtained from well-designed controlled clinical trials without randomization

Level IV: Evidence from well-designed case-control and cohort studies

Level V: Evidence from systematic reviews of descriptive and qualitative studies

Level VI: Evidence from a single descriptive or qualitative study

Level VII: Evidence from the opinion of authorities and/or reports of expert committees
(Melnik and Fineout-Overholt, 2005)

Out of seventeen studies, ten showed that social stories had a positive effect on the target behaviors of the participants. Two studies showed the effectiveness of positively changing the child's behaviors. Three studies showed that social stories did not have a positive effect on children with Autism. Finally, two studies had inconclusive results.

Discussion

The child with ASD often has problems communicating effectively, may display inappropriate and sometimes aggressive or violent behavior when placed in a stressful situation, and experience anxiety and difficulty performing tasks due to a lack of understanding. Results of this investigation show that social story interventions are affective tools for children with ASD. It has been demonstrated that social stories may be beneficial in terms of modifying target behaviors among children with ASD (Benish et al., 2011; Crozier et al., 2007; Hutchins et al., 2013; Karkhaneh et al., 2010; Okada, 2008; Okada et al., 2010; Ozdemir, 2008; Samuels et al., 2012; and Thompson et al, 2013). It has also been demonstrated that social stories may be beneficial in targeting social skills among children with ASD (Amin et al, 2013; Leaf et al., 2012; Quirnbach et al., 2009; Karkhaneh et al., 2010). According to Prelock and colleagues (2011), it has been indicated that the use of social stories in children with ASD demonstrates improvement in comprehension, an increase in requesting, unprompted spontaneous verbalizations, and effective communication interactions (Hanley-Hochdorfer et al., 2010; Hudock et al., 2011; Hutchins et al., 2013; Reichow et al., 2009; and Samuels et al., 2012). Social stories have also been found to be an emerging interventional approach for individuals with ASD to facilitate teaching new and appropriate skills with a decrease in anxiety (Klett et al., 2012; O'Connor, 2009).

Several limitations exist to the research synthesis presented here. Tools used for testing may not have been tested for validity and reliability and there were small sample sizes and samples representing only children who were specifically seeking certain types of interventions. Some designs did not allow for the assessment of other mediating or moderating variables that

could also potentially contribute to the effectiveness of social stories. Most of the studies did not include control groups or other forms of control that would enable one to attribute interventions received. There are few studies that offered direct support or intervention in different races. It is not possible to draw conclusions about which types of interventions, be they verbal or electronic, that may be especially effective in children ASDs.

Conclusion

The aim of this literature review was to assess effectiveness of social stories in children with ASDs. It should be kept in mind that there are many complexities involved in synthesizing the evidence on this type of intervention. It is also difficult to identify which of the constituent elements of social stories are responsible for the effects seen in the individual studies. When assessing evidence on social stories as an intervention, the intention of applying them in a different setting should be kept in mind. This review highlighted that the focus of research was on the use of social stories in children with disabilities. It was demonstrated that social stories are effective in positively changing behaviors, teaching social skills, communication and tasks as well as decreasing anxiety in the child. Further research is required to determine how social stories can effectively be used in children with ASD.

Table 1.1

Author & Date	Purpose	Sample Size/ Description	Interventions	Measurements	Results	Summary/ Conclusion
Amin et al., (2013) LOE 4	Effectiveness of personalized Social Stories/peer mediated interventions in remediating social skills of first grader with ASD.	N=1 seven year old boy with diagnosis of ASD.	Once a week Adam would read his Social Story and be grouped together with 3 typically developing students to work on a group project	None reported	Social Story/ peer interventions did improve the targeted social skills and behaviors	Social stories are effective in decreasing inappropriate behaviors in children with ASD.
Benish et al., (2011) LOE 3	Effectiveness of Social Stories in, reducing aggression/improving positive peer relationships for neurotypical pre-school age children.	N=3 four-year-olds	The teacher read the Social Story to participant prior to the child engaging in setting where aggression occurs	POC (Pre-school Observation Code)(reliability/validity not addressed)	Social stories appeared effective in decreasing aggressive behaviors.	Social Stories are effective in decreasing aggression with children with ASD and “normally-developing” preschool age children.
Crozier et al., (2007) LOE 4	Effects of Social Stories on prosocial behavior of preschool children with ASD.	N=3 children ages of 3 and 5 diagnosed with ASD.	The story was read, the author asked three comprehension questions and then began the observation	- ABAB experiment design -ABCACBC experimental design (validity/reliability not addressed)	Social stories had a positive effect on the behavior of children with ASD	Social stories have a positive effect on changing target behaviors for children with ASD
Hanley-Hochdorfer et al., (2010) LOE 4	Effects of Social Stories employed for verbal initiations and contingent responses to peers.	N=4 participants (3 elementary/1 middle schooler) with a diagnosis of Asperger’s or Autism	After reading the Social Story participants were asked four comprehension questions to ensure they understood the story.	None Reported	-Participants 1 and 2 showed little or no effect -Participants 3 and 4 showed an increase in verbal initiations and contingent responses to peers stages.	There is little support for the use of Social Stories in increasing verbal initiations and contingent responses to peers, for children with ASD.
Hudock et al., (2011) LOE 3	Effectiveness of Social Stories in increasing the number of verbal responses in children with ASD	N=3 Caucasian male children (8-13 all with a previous diagnosis of ASD)	Study was conducted over a 4 week period with an “A-B-A-B” condition design.	Qualitative notes were kept (generalizability/transferability not addressed)	Results indicated that one intervention was not more effective than the other intervention in increasing responses to verbal greetings in children with ASD.	Neither the Social Story nor the generic story produced substantial increases in the children’s responses to verbal greetings.

Hutchins et al., (2013) LOE 6	Social story intervention in promoting positive changes in behavioral and communicative functioning	N=20 children (ages 4-12 years old with a previous diagnosis of PDD/NOS)	Participation in 2/3 half-hour sessions per week where they were read a customized social story geared to their specific problem behavior and communication impairments.	-Daily diaries (reliability/validity not addressed)	-10/17 of behavior stories and 10/19 communication stories were associated with a therapeutic effect of treatment.	-Social stories may lead to improvement in behavioral and communicative functioning in children with ASD. -Social stories do not always yield the desired outcomes.
Karkhaneh et al., (2010) LOE 1	Evaluation of social stories among persons with ASD.	N=6 control trials (MEDLINE, EMBASE, ERIC, CINAHL, Cochrane Central Register of Controlled Trials, Dissertation Abstracts, PsycINFO, Web of Science)	No interventions/meta-analysis of data	Not applicable	Five of six trials reported statistically significant results favoring the social stories for outcomes under study.	Social stories may be beneficial in terms of modifying target behaviors among high functioning children with ASD.
Klett, (2012) LOE 3	Effectiveness of a parent-implemented Social Story teach menstrual care skill	N=3 adolescent females	Parents read each social story aloud, asked a question at end of each page and record the participants answer	11 step task list (reliability/validity not addressed)	All three participants showed improvements in their general menstrual knowledge and menstrual care routines.	Parents stated that they were satisfied with their child's menstrual hygiene skills during the one year follow up.
Leaf et al., (2012) LOE 3	Social Stories related to teaching social skills to children and adolescents with ASD.	N=6 boys (ages of 5-13 who had a diagnosis of ASD)	Two social skills were while 4 other skills were exposed to the children for baseline and maintenance.	None reported	Teaching interaction produced higher levels of specific skills than the social stories.	There was some improvement in certain skills when learning with a social story, however the improvement is variable.
O'Connor, (2009) LOE 6	Social Story DVDs related to addressing anxiety occurring with taking turns in a child with ASD/ learning disorder.	N=1 child with dual diagnosis of ASD and a learning disability.	Social Story DVD called "Turn taking-a social concept"	None reported	-Positive outcomes for the child were shown during the swimming class - During PE the child had trouble	The results show that another intervention is needed along with the Social Story DVD to reduce the

					controlling his behavior.	anxiety in a child with ASD and a learning disorder.
Okada, (2008) LOE 3	Effects of adding perspective sentences to Social Stories on improving behaviors of children with ASD.	N=2 boys (ages 12 and 13 with a diagnosis of ASD)	Social stories with perspective sentences vs Social Stories without perspective sentences	None reported	Visual inspection indicated that a Social Story was effective in improving adaptive behaviors. Adding a perspective sentence did not have any additional impact on improving the target behaviors.	This study found that the addition of a perspective sentence did not significantly influence a positive change in the target behavior of each child.
Okada et al., (2010) LOE 3	Effectiveness of perspective sentences used in the Social Stories	N= 1 boy (14 with a diagnosis of ASD)	Condition A –no social story. Condition B –social story w/o perspective sentences. Condition C- social story w/perspective sentences delivered unknown person. Condition D- social story w/perspective sentences delivered familiar person. Condition E- social story w/perspective sentences delivered preferred person	None reported	Similar rates seen during the morning circle head position, lunch elbow position and lunch head position observation times.	Findings suggest that replacing the perspectives from a less preferred person to that of a more preferred person in a Social Story is not enough to change a behavior.
Ozdemir, (2008) LOE 4	Effectiveness of Social Stories on decreasing disruptive behaviors of children with autism.	N=3 children, ages 7-9 with ASD.	Having the specific Social Story read to them by their teachers either in the morning or before recess based on their target behavior.	A 15 second partial interval recording system Reliability/validity not addressed	Significant decrease in the target behavior of each participant when the social story was implemented.	Properly constructed and visually presented social stories may decrease the disruptive behaviors of children with autism
Quirnbach et al., (2009) LOE 4	Comparison of two formats of Social Stories that target the improvement of social	N=45 children (ages of 7-14 with a diagnosis of ASD)	Participants were randomly assigned to three groups with different types of Social Stories.	-Autism Diagnostic Observation Schedule -Wechsler Intelligence Scale for Children-4 th Ed.	The standard and directive stories were equally effective in improving the	A large cohort of children with ASD who had Verbal Comprehension skills

	skills during game playing			-Reading Recognition and Reading Comprehension subtitles of the Peabody Individual Achievement Test-Revised (reliability/validity not addressed)	game playing skills in children with ASD.	in the Borderline range or above significantly increased several valuable game play skills immediately after reading either a Standard or Directive social story.
Reichow et al., (2009) LOE 4	Increase acceptable verbal greeting initiations	N=1 boy (11 years old with diagnosis of autism.	Social story on when to greet someone/why people use greetings/acceptable words to use in greetings/how to initiate greetings/ what the expected outcomes will be	None reported	During intervention stage, there was immediate increasing trend in the number of verbal greeting initiations observed	Social stories are an effective method for increasing social initiations for a student with autism.
Samuels et al., (2012) LOE 4	Use of social stories on adults with ASD	N=4 young adults (3 with ASD and one with behaviors characteristic of ASD ages 17-32)	-Baseline -Intervention phase -Fading phase -Maintenance /follow up stage.	None reported	Increase in the desired behaviors during the intervention phase/post intervention phases.	-Social stories can be an effective sole intervention in developing socially appropriate communication and behavior for a temporary period.
Thompson et al., (2013) LOE 4	Effects of social stories in increasing functional behaviors and sensory integrative based strategies to promote self-regulation	N=3 children (ages 3-5) with special needs.	Reading individualized social stories that discussed desired behaviors/self-regulation strategies	None reported	Frequency of desired behaviors increased for all participants. Use of self-regulation strategies varied among participants	Findings are successful in increasing engagement in desired behaviors.

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