Using Sensory Stories to Promote Occupational Performance and Self-Regulation: Updates from the Evidence

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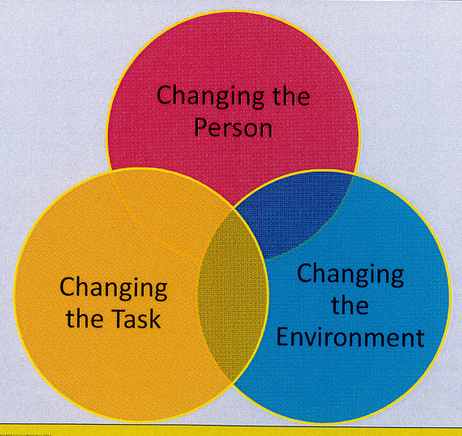
Sensory Stories Approach

- Occupation-based Intervention
- Sensory-based Intervention
- Cognitive-based Intervention
- Routine-based Intervention
- Story-based Intervention

The Sensory Stories

Home	School	Community
Bathing	Assemblies	Getting a Haircut
Brushing Teeth	Being in Lines	Going to a Restaurant
Combing Hair	Cafeteria	Going to a Store
Ear Cleaning	Circle / Floor Time	Going to Parties
Eating	Desk Time	Going to Places of Worship
Getting Dressed in the Morning	Eating Time	Going to the Dentist
Nail Care	Moving in the School	Going to the Doctor
Showering	Outdoor Recess	Riding in an Elevator
Sleeping	Physical Education Class	Riding in the Car
Washing Hair	School Bus Ride	Riding on an Escalator

Sensory Stories: Changing Occupational Performance

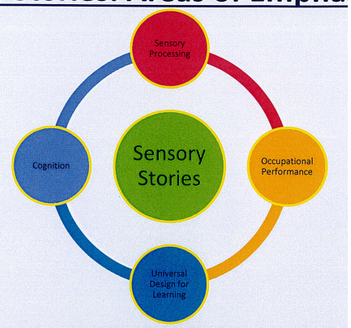


Summary of the Sensory Stories Evidence in Chronological Order

Author / Year	Research Questions	Level/Design/Participants	Measurement Tool / Length of Intervention	Results	Study Limitations
Sherick (2004)	What are the effects of Circle Time Story on stereotypic behaviors?	Level IV ABA design with 1 week A phases and a 2 week B phase Five children with autism, aged 5-10 years.	Partial interval time sampling of targeted behaviors Two week intervention	Decreased spontaneous vocalizations (p=.041) in 1 child, decreased repetitive movements (p<.001) in 1 child, no change in spontaneous behaviors (p=.677). Positive changes diminished following intervention phase	Used a clip art prototype, Limited time reading stories*
Marr, & Nackley (2004)	What are the effects of Sensory Stories?	Level IV Single subject, post-test only 52children aged 2.5-11.9 years old reading 72 stories	Parent survey which included a 4 point Likert scale to indicate change. Stories read from <1 to 3 months	Mean change was 2.6 (between slight change and moderate change). 5 to 7 year olds made the most change (2.65) Children reading the story 3+ times per week made the most change (2.7) Children reading 2 ½ to 3 months made the most change (2.9)	Limited control over how Stories were read. Use of parent report may be biased.
Marr, Mika, Miraglia, Roerig, & Sinnott (2007)	What is the effect of a customized Circle Time Story on targeted behaviors?	Level IV Single-subject ABA design with 1 week A phases and 2 week B phase Four preschoolers with autism aged 4 to 5 years	Interval time sampling of targeted behaviors. Two week intervention	Positive change in circle time behaviors for three children (p values from .004 to .002).	Limited time reading stories. *
Kliment, Pelan, & Huchro (2007)	Can a customized Homework Sensory Story improve behavior and participation?	Level IV Single-blind ABA case study Eight year old male	Interval time sampling of video-recorded on- and off-task behaviors during first ten minutes of homework Eight week intervention	Off-task behavior reduced by 85% On-task behavior increased by 14%. Reduction in homework time by 40 minutes.	Short post-intervention phase, irregular length of video-recordings. *
Bacon, Donohue, Reeder, & Spano (2007)	Can a customized Eating Sensory Story increase food repertoire?	Level IV Single-subject ABA case study. Seven year old male who ate only 16 food items	Daily Goal Attainment Scaling ratings. Twelve week intervention	Food items consumed increased by five (2-3 food items 100% of the time and 4+ new food items 50% of the time)	Family reporting may be biased. Co-interventions in the school.*
Shepard, Knoop, & Telarole (2008)	Can the Haircut Sensory Story improve participation in haircutting?	Level IV Pre-experimental case-series design. Four children between the ages of 5 and 10.	Parental ratings of behavior and participation via semantic differentials, Likert scales, and narrative during a routine haircut One week of daily readings prior to haircut	All children improved during the haircut and three of four children improved following the haircut. One child was rated with a significant change.	Parent reporting may be biased *
Bailey, Clymo, Murphy, & Petryshyn (2009)	What is the effect of the Nail Care Sensory Story on tolerating nail care?	Level IV Pre-experimental case-series design. Five children between ages 3 and 12	Parental ratings of behavior and participation using semantic differentials, Likert scales, and narrative during routine nail care One week intervention prior to nail care	Three children had significant change, one had moderate change, and one had slight change.	Parental ratings may be biased. No follow-up to document long-term change.*
Marr, Brenner, Burosh, Steel, & Nackley(2009)	Did Sensory Story or Social Story have a better effect on washing hair?	Level III ABA with randomized groups Four children between ages of 5 to 9	Video tape rating by blind raters. Goal Attainment Scaling rated by parent. Six week study with 4 weeks of intervention	Social Stories had greater increase of steps completed and higher parental perception of goal attainment. Sensory Stories had greater decrease in number of physical and verbal cues and in number of complaints	Low interrater reliability on video rating Sensory Story families read story only 25% of days.
Croucher, FitzPatrick, Holmquist, Pozos, & Reyner (2010)	What is the effect of a Homework Sensory Story?	Level IV Single-blind, quasi-experimental, case-study ABA design. Eight year old boy	Blind video-ratings of off-task behavior and parental survey ratings pre- and post-study. Two readings of story.	2% reduction in off-task behavior, statistically insignificant (p = .19). Narrative parental report of improved behavior and sensory strategy usage.	Short intervention phase due to participant discontinuation.*
Marr & Apsey (2010)	What effect does the Haircut story have on behaviors and parental stress?	Level III Pre-test/Post-test Four males aged 6 years 2 months to 7 years 6 months	Video rating, Level of Stress Scale, Goal Attainment Scaling One week of daily reading prior to baseline, experimental and follow up phase.	GAS and Stress Scale showed positive change. Video recordings showed positive change for one participant.	Low inter-rater reliability on video rating. *
Deonarain (2010)	What is the effect of the Circle story on attention-to-task behaviors in preschoolers?	Level IV Retrospective descriptive 16 children in two integrated preschool classrooms. 8 with disabilities and 8 without	Therapist developed behavior checklist with a Likert scale scored 2-5 times per week by OT for each child. One week of daily reading; one week of reminders to implement sensory strategies.	Increased attention-to-task behavior for preschoolers with a disability (p = .0001); insignificant change for preschoolers without a disability (p = .515).	The retrospective nature of the study limited the ability to check interrater scores. Intervention phase was short. *
Allen , Halstead, Lateer, Lehman, Melgoza, Pastorella (2011)	What is effect of the Going to Places of Worship Sensory Story on behavior and participation?	Level IV Pre-experimental case-series AB design. Four children between ages six and eight	Parent rating using Likert scale, semantic differential behavioral ratings, and open-ended survey questions. Four weeks of reading five times per week.	Slight positive change for one child; three of the four children had little to know change. Benefits reported in positive behavioral trends for three of the four children.	*
Capron , Comesky, Mondrick, Watson, Wolken & Zangrilli (2011)	What is the effect of customized Sensory Stories on daily activities for adults with intellectual disabilities?	Level III Quasi-experimental design. Five adults with intellectual disabilities and identified sensory processing difficulties	Goal Attainment Scaling of activity participation rated by caregiver Daily reading of customized Sensory Stories addressing: nail care, hair brushing, school bus ride, toileting hygiene, and tooth brushing for two weeks.	Statistically insignificant ANOVA changes (p > .05). Positive trend lines on the GAS for two of five participants.	Limited caregiver investment in GAS ratings; recording only of GAS performance during the intervention phase. *
Marr, Bray, Cranney, Daulton, Kesner, Samuel, & Tiralla (2012)	What is the effect of Sensory Stories on participation in eating?	Level III Pretest-posttest design. Five children aged five to ten	Goal Attainment Scaling, video ratings of performance Daily reading of eating story for six weeks	All subjects improved in at least one GAS goal. Three of five subjects improved in all GAS goals.	Interrater reliability of video ratings was poor.*
Marr, Hsu, Kelly, Vizy, Wickizer, & Yoder (2013)	What is the effect of Sensory Stories on sleep disturbances and related daytime behaviors in children?	Level III Pretest-posttest design Four children between ages five and twelve	Sleep Disturbances Scale for Children (SDSC); Eyberg Child Behavioral Index, and Pittsburgh Quality Sleep Index Daily reading for four weeks.	A decrease in sleep disturbance in 2 of the 3 experimental subjects was found. A decrease in daytime problems also occurred. No change in parent sleep quality.	A priori, the first three enrolled subjects were in the experimental group leaving only one subject in control group*

*All studies had small sample sizes, convenience sampling, and no randomization when groups were used

Sensory Stories: Areas of Empha



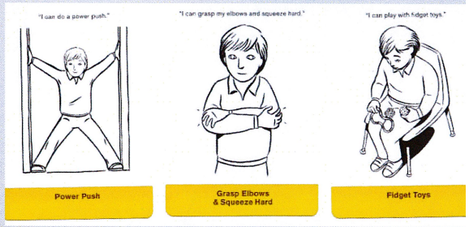
Summary of Findings

Positive outcomes were noted in one or more subj throughout all studies using various types of stor designs.

- Single subject studies had all positive outcomes.
- Studies with small samples (i.e., 2 to 5) found po outcomes in anywhere from 20 to 100% of the su
- Ages ranged from 2 ½ to adults but the majority studies included subjects from 3 to 12.
- Age did not appear to influence the presence of outcomes.

Sensory Stories have a strong potential to positive change a person's ability to engage in an occupa despite his/her overresponsivity to the sensory i inherent in that occupation.

Sensory Story → Sensory Strategies → Self-Regulation → Partici



Resources

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