



Caregiver Management of Sensory Sensitivity during Performance of Self-Care Activities for a Child with High Functioning Autism: A Case Study

Brenna Buckner, OTS & Elizabeth Larson, PhD, OTR



OCCUPATIONAL THERAPY PROGRAM, DEPARTMENT OF KINESIOLOGY, UNIVERSITY OF WISCONSIN-MADISON

Introduction

- Atypical sensory processing is estimated to affect 69-95% of children with autism spectrum disorder (ASD) and is often associated with uncooperative behaviors while performing activities of daily living (ADL, e.g. dressing, feeding, toileting, and grooming).¹
- Toothbrushing is an ADL that can be difficult for children with ASD to complete due to delayed sensorimotor skills and/or discomfort from tactile hypersensitivity in the mouth and around the face.
- Caregiver guidance and assistance while a child with ASD is brushing his or her teeth is often necessary for supporting successful completion of this task.^{2, 3, 4}

Guiding questions:

- What types of caregiving strategies are used by a caregiver of a child with high-functioning autism (HFA) to manage sensory sensitivity during toothbrushing routines?
- When and why does the caregiver chose to use these strategies to provide support during self-care?

Research Design & Methods

Design

- Qualitative case study

Participants

- Dyad: caregiver (mother) & 7-year old son with HFA
- Participants recruited through Autism Society of South Central Wisconsin.

Measures & Materials

- Sensory Processing Measure – Home Form (SPM)*
- Checklist of Non-Verbal Pain Indicators (CNPI)*
- Two Muvi cameras for video data collection
- Semi-structured interviews

Procedures

- Caregiver completed *SPM* & participated in a semi-structured interview. Interview questions focused on child's history of sensory sensitivity during self-care
- Cameras installed in family's bathroom
- Mother initiated video-recording of child's toothbrushing for five consecutive days
- Videos were reviewed with the caregiver and the caregiver was asked to comment on "what happened" and describe her strategies in a follow-up interview

Analysis

- Researcher thoroughly reviewed all data from interviews, videos and the *SPB* to become familiar with the case
- Behaviors associated with sensory sensitivity were identified and coded using the *CNPI*.
- Semi-structured interviews were coded for themes
- Thematic analysis used to identify, analyze, and report caregiving strategies in response to sensory sensitivities identified via the *CNPI*

Results

Results indicate "definite" sensory processing dysfunction

Table 1
Sensory Processing Measure (SPM) Home Form: Score Report

Scale	Raw Score	T-score	Percentile	Interpretive Range
Social Participation (SOC)	29	70	97	Definite Dysfunction
Vision (VIS)	34	79	>99	Definite Dysfunction
Hearing (HEA)	28	79	>99	Definite Dysfunction
Touch (TOU)	29	73	99	Definite Dysfunction
Body Awareness (BOD)	17	61	86	Some Problems
Balance and Motion (BAL)	21	66	95	Some Problems
Planning and Ideas (PLA)	23	67	95	Some Problems
Total Sensory Systems (TOT)	140	76	>99	Definite Dysfunction

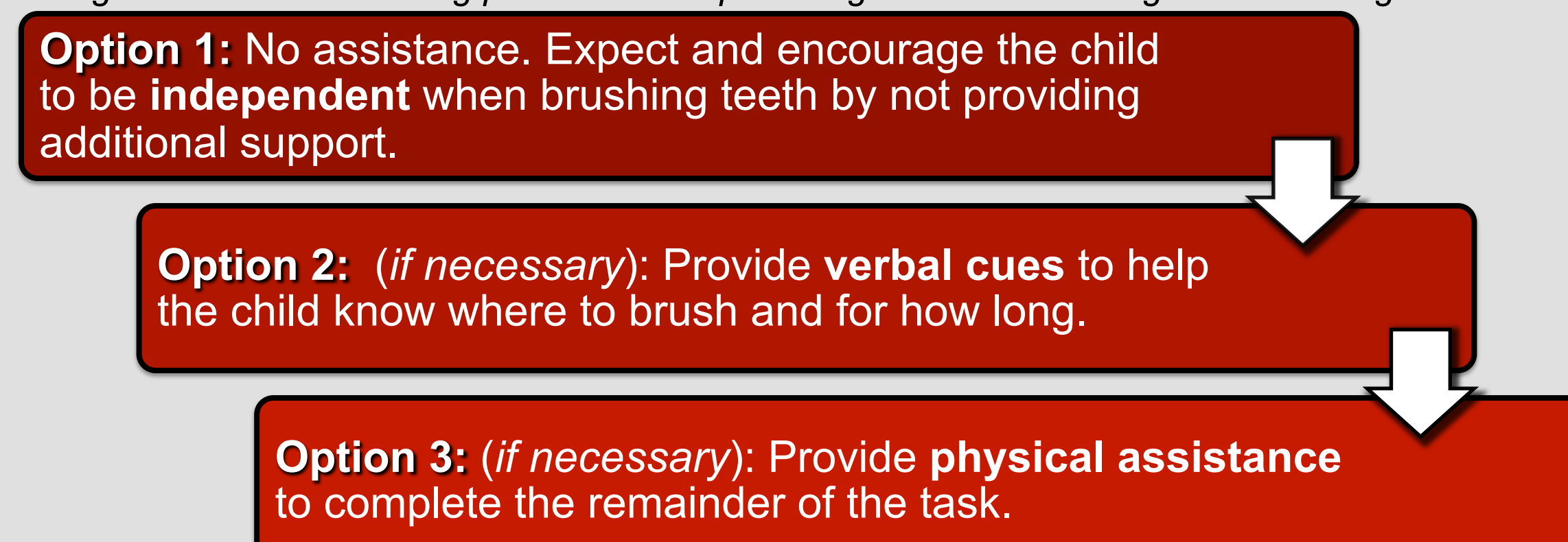
Caregiver provides specific supports for behaviors indicating sensory sensitivity

Table 2
Caregiver assistance provided during signs of pain according to the Checklist of Nonverbal Pain Indicators

Non-Verbal Pain Indicators	Caregiver Support Provided
Vocal complaints (non-verbal) (sighs, gasps, moans, groans, cries)	No assistance provided
Facial Grimace/wincing (furrowed brow, narrowed eyes, clenched teeth, tightened lips, jaw drop, distorted expressions)	<i>Verbal cues</i> <ul style="list-style-type: none"> "... [Brush] in the back and in the front" "Re-do those front teeth" "Look in the mirror" "Bite down" <i>Verbal reassurance</i> <ul style="list-style-type: none"> "There we go... all done" "Yeah... yeah... very good" <i>Physical gestures/cues</i> <ul style="list-style-type: none"> Demonstrates wide grin necessary for brushing top teeth <i>Physical assistance</i> <ul style="list-style-type: none"> Hand supporting child's chin while brushing teeth for child Supporting stance directly behind child while brushing teeth for child
Restlessness (constant or intermittent shifting of position, rocking, intermittent or constant hand motions, inability to keep still)	<i>Verbal cues</i> <ul style="list-style-type: none"> "No, you're not done." "Come here. Let's just do a quick check." "I'd like to see some more brushing, please." "Keep going" "Mommy's turn..." <i>Verbal reassurance</i> <ul style="list-style-type: none"> "Good job" "All done! Woo-hoo!" <i>Physical gestures/cues</i> <ul style="list-style-type: none"> Directs child back to original position in front of the sink <i>Physical assistance</i> <ul style="list-style-type: none"> Sets up materials (i.e. puts toothpaste on toothbrush)

Caregiver valued her child's independence with toothbrushing and only choose to provide support when sensory sensitivity prevented task completion

Figure 1
Caregiver's decision-making process when providing assistance during toothbrushing



Conclusions

Results suggest:

- The caregiver sought to establish a toothbrushing routine that encouraged independence with self-care.
- If sensory sensitivity impeded toothbrushing, the caregiver typically intervened because she was concerned with her son's oral hygiene and health.
- The caregiver responded to nonverbal pain indicators, such as facial grimacing/wincing and restlessness, by providing: (1) verbal cues, (2) verbal reassurance, (3) physical gestures/cues, and/or (4) physical assistance.
- The caregiver first choose to provide verbal cues, followed by physical assistance, only if the child could not brush his teeth independently. The child's performance often varied day to day and was insufficient for good oral hygiene.

Future research:

- Can build upon this study by including more participants for further insight into caregiving trends and/or use quantitative methods, such as electrodermal reactivity (EDR) data, to demonstrate how caregiving methods affect a child's sensory experience during self-care.

Implications for Practice

- Occupational therapists (OTs) are experts at understanding the effects of sensory sensitivity on self-care and can consult with parents to identify graded strategies that progress from minimally, moderately, to maximally supportive of the child's performance.
- OTs are encouraged to follow a family-centered approach when working with children and their caregivers. This philosophy suggests that parents know their children best and optimal outcomes occur when a family's needs are supported⁵. When providing intervention services, it is essential for OTs to consider caregivers' preferences for managing sensory sensitivity during self-care.

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