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

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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 a challenging task 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 is often necessary for supporting successful completion of this task.\(^2,3,4\)

Guiding questions:
1. 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?
2. When and why does the caregiver choose 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 SPM 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>
<thead>
<tr>
<th>Sensory Processing Measure (SPM)</th>
<th>Home Form</th>
<th>Score Report</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Participation (SOC)</td>
<td>17</td>
<td>61</td>
</tr>
<tr>
<td>Vision (VIS)</td>
<td>17</td>
<td>61</td>
</tr>
<tr>
<td>Hearing (HEA)</td>
<td>17</td>
<td>61</td>
</tr>
<tr>
<td>Touch (TOU)</td>
<td>17</td>
<td>61</td>
</tr>
<tr>
<td>Taste and Smell (TAS)</td>
<td>17</td>
<td>61</td>
</tr>
<tr>
<td>Balance and Motion (BAL)</td>
<td>17</td>
<td>61</td>
</tr>
<tr>
<td>Total Sensory Systems (TOS)</td>
<td>17</td>
<td>61</td>
</tr>
</tbody>
</table>

**Caregiver provides specific supports for behaviors indicating sensory sensitivity**

<table>
<thead>
<tr>
<th>Non-Verbal Pain Indicators</th>
<th>Caregiver Support Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vocal complaints (non-verbal)</td>
<td>No assistance provided</td>
</tr>
<tr>
<td>Facial Grimace/wincing (blushed face, mouth twisted, clenched teeth, lightened eyebrows, tear drops, distorted expressions)</td>
<td>Verbal cues</td>
</tr>
<tr>
<td>Restlessness (jittery, restless, fidgety)</td>
<td>Verbal cues</td>
</tr>
<tr>
<td>Physical assistance</td>
<td></td>
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</tbody>
</table>

- Supports child during signs of pain according to the Checklist of Non-Verbal Pain Indicators

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

- **Option 1:** No assistance. Expect and encourage the child to be independent when brushing teeth by not providing additional support.
- **Option 2:** (if necessary): Provide verbal cues to help the child know where to brush and for how long.
- **Option 3:** (if necessary): Provide physical assistance to complete the remainder of the task.

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.

**Implications for Practice**

- Occupational therapists (OTs) are experts at understanding the effects of sensory sensitivity on self-care and can work with parents to identify graded strategies that progress from minimal to maximal support, 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 supported. When providing intervention services, it is essential for OTs to consider caregivers’ preferences for managing sensory sensitivity during self-care.

**References**


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