

Validity Of The Environment, Attitudes, Temperament, And Sensory Feeding Assessment For Effectively Addressing Sensory-Based Feeding

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Abstract:

Feeding is a complex, learned occupation for which children may receive rehabilitative services. This research outlines the third phase of research, which sought to determine the discriminant validity of the Environment, Attitudes, Temperament, and Sensory (EATS) Feeding Assessment. The current study aimed to answer the question, “Do EATS Feeding Assessment scores significantly differ between children with and without feeding difficulties?” This quantitative study consisted of a caregiver survey that was initiated after receiving approval from the institutional review board. Convenience sampling through social media flyers recruited parents and caregivers of children who were typically and atypically developing. The revised EATS Feeding Assessment (third version) questions were entered into an anonymous online survey. The assessment was submitted to parents and caregivers of children with and without feeding difficulties between the ages of 24 months to 10 years 11 months. Data from the EATS assessment illustrated the ability of the assessment to differentiate those with and without feeding difficulties. After statistical analysis, the findings were significant, and the EATS Feeding Assessment was determined to have discriminant validity. The assessment should now undergo testing to determine if the EATS Feeding Assessment is appropriate as an outcome measure.

Key Word: Pediatrics; Evaluation; Sensory processing; Rehabilitation.

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I. Introduction

Feeding is a complex, learned occupation for which children may receive rehabilitative services. Feeding difficulties are often categorized as developmental, motor-based, sensory-based, or behavioral. Sensory-based feeding difficulties are a result of dysfunctional responses to sensory stimuli. When these feeding issues are present, children, as well as their parents, experience stress due to the disturbances in mealtime routines¹. Feeding is a multi-system, complex process. Due to this complexity, there are often multiple issues present that impact successful feeding².

To date, there is no pediatric sensory-based feeding assessment in existence. The current research that examines children with sensory feeding difficulties utilizes the Sensory Profile along with an oral motor assessment and/or a behavioral assessment^{3,4}. This method is heavily reliant on clinical expertise and observation, lacking validity and reliability. The Environment, Attitudes, Temperament, and Sensory (EATS) Feeding Assessment was created to address the disparity to allow clinicians the ability to effectively assess children with sensory-based feeding difficulties.

This report outlines research undertaken to determine the discriminant validity of the EATS Feeding Assessment. The third phase of research presented in this report builds off the first two phases of research for the EATS Feeding Assessment. The first phase established content validity from an expert panel. The second phase determined if the EATS questions were understandable, answerable, and appropriate for all ages via a survey of caregivers of children who were typically developing⁵. Both phases provided valuable information that has shaped the development of the EATS Feeding Assessment. The assessment then warranted further investigation through validity and reliability studies.

This study investigated the discriminant validity of the EATS Feeding Assessment. The research aimed to answer the question, “Do EATS Feeding Assessment scores significantly differ between children with and without feeding difficulties?”

II. Material And Methods

This study consisted of a caregiver survey that was initiated after receiving approval from the institutional review board. Convenience sampling through social media flyers recruited parents and caregivers of children who

were typically and atypically developing. The revised EATS Feeding Assessment (third version) questions were entered into an anonymous online survey. Parents and caregivers of children ages of 24 months to 10 years 11 months, with or without feeding concerns, that did or did not have a formal or suspected diagnosis (developmental delay, autism spectrum disorder, attention deficit hyperactivity disorder, etc.), and had or had not received early intervention services/therapy services were asked to participate. All participants provided consent prior to completing the online survey.

Each subject who agreed to participate was asked to indicate their child’s age then select “Yes” or “No” to indicate their responses to the following questions: if they think their child has feeding difficulties, if their child has a formal or suspected feeding diagnosis (dysphagia, aspiration, reflux, failure to thrive, malnutrition, etc.), if their child has a formal or suspected diagnosis (developmental delay, autism spectrum disorder, attention deficit hyperactivity disorder, etc.), and if their child has received early intervention services/therapy services in the past year prior to responding to the EATS Feeding Assessment survey.

The EATS Feeding assessment survey sought responses for the ATS (Attitudes, Temperament, Sensory) sections of the EATS as those questions are quantitative with numerical scores. The E (Environment) section was not included as those questions are open-ended and qualitative. The E section is intended to illustrate the unique environment of each client to guide the therapist’s recommendations for family-centered and culturally competent care, whereas the ATS sections are to illustrate typical or atypical occurrences that impact attitudes, temperament, and sensory responses that differentiate those with or without feeding difficulties.

The study’s ideal sample size was determined based on G*Power. “F tests” was selected for the test family, “MANOVA: Repeated measures, within factors” was selected for the statistical test, and “A priori: Compute required sample size – given α , power, and effect size” was selected as the type of power analysis. The effect size was set at 0.25, α error probability was set at 0.05, power was set at 0.8, and the number of predictors was set at 2. G*Power calculated the total sample size to be 66⁶.

After data collection, statistical analyses described the discriminant validity. The multivariate analysis of variance determined how the EATS Feeding Assessment was able to differentiate between children with feeding difficulties and those without feeding difficulties. These analyses were done with Statistical Package for the Social Sciences (SPSS) Version 28.

III. Result

Seventy-one surveys were submitted electronically. All age groups were represented with the majority being 6 years 11 months and younger, as seen in Figure 1 below. Due to purposive sampling methods, recruiting from feeding clinics, and online support groups, children with and without feeding difficulties were well represented, as seen in Table 1 below.

Figure no 1: Shows the ages of the children who were included in the study.

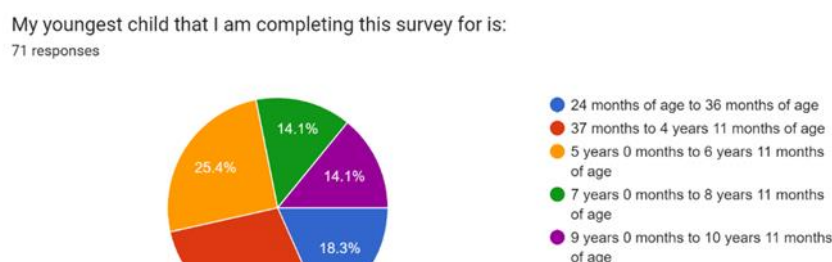


Table no 1: Shows the subjects who participated in the study backgrounds.

Question	Yes	No
Does your child have feeding difficulties?	33 (46.5%)	38 (53.5%)
Does your child have a formal or suspected feeding-related diagnosis (e.g., dysphagia, reflux, malnutrition, etc.)?	32 (45.1%)	39 (54.9%)
Does your child have a formal or suspected diagnosis (e.g., autism, attention deficit, Down’s syndrome, etc.)?	28 (39.4%)	43 (60.6%)
Has your child received early intervention services/therapy services in the past year?	35 (49.3%)	36 (50.7%)

Data from the EATS assessment illustrated the ability of the assessment to differentiate those with and without feeding difficulties. After statistical analysis, the findings were determined to be significant (<.001). Table

2 provides score averages, rounded to the nearest whole number, for each assessment subsection. Table 3 provides average scores for age groups, rounded to the nearest whole number.

Table no 2: Shows the score averages by section.

Section	Typical	Feeding Difficulties
Attitudes (A)	2 ± 5	20 ± 6
Temperament (T)	1 ± 1	17 ± 5
Sensory (S)	1 ± 2	41 ± 10

Table no 3: Shows the average score by age.

Age	Typical	Feeding Difficulties
24 - 36 months	A: 2 T: 0 S: 1	A: 20 T: 17 S: 37
37 months - 4 years 11 months	A: 2 T: 0 S: 2	A: 18 T: 15 S: 39
5 years 0 months - 6 years 11 months	A: 4 T: 1 S: 1	A: 19 T: 17 S: 41
7 years 0 months - 8 years 11 months	A: 0 T: 0 S: 0	A: 19 T: 17 S: 45
9 years 0 months - 10 years 11 months	A: 2 T: 0 S: 1	A: 22 T: 18 S: 40

IV. Discussion

Data from the EATS assessment illustrated the ability of the assessment to differentiate those with and without feeding difficulties. After statistical analysis, the findings were significant and determined the EATS Feeding Assessment to have discriminant validity. The sample section score averages for each assessment subsection depict typical children and those with feeding difficulties based on the entire sample, which allows therapists to quickly determine if therapy services are needed. The age-specific section score averages for each assessment subsection depict typical children and those with feeding difficulties based on the age ranges, which allows therapists to further understand the child’s functioning compared to peers for each subsection.

The multivariate analysis of variance determined how the EATS Feeding Assessment was able to differentiate between children with feeding difficulties and those without feeding difficulties. The averages for those who have typical feeding responses and those who have feeding difficulties can be utilized in the clinic for quick and efficient determination of therapeutic services based on the sample score averages and age-specific score averages. The next phase will determine if the EATS Feeding Assessment can be used as an outcome measure to detect changes over time.

The development of the EATS Feeding Assessment was prompted during an outpatient pediatric QI meeting. Following the preliminary creation of the assessment (first version), a two-phase study was completed for its development. Phase one consisted of a mixed-methods survey of occupational therapy pediatric feeding experts. In phase two, the assessment was submitted to parents of children who were typically developing aged 12 months to 10 years 11 months. Data from the focus groups determined the assessment content. The parent survey revealed six questions that needed simplified language and an appropriate age of 24 months and older. Based on the results of phase two, the third version of the EATS Feeding Assessment was established. The EATS (third version) Feeding Assessment underwent further validity studies in phase three.

V. Conclusion

Phase three data illustrated the ability of the assessment to differentiate those with and without feeding difficulties. After statistical analysis, the findings were significant, and the EATS assessment content was determined to be valid. The assessment should now undergo reliability studies when utilized for evaluation and re-evaluation of children with feeding difficulties in therapeutic settings.

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