Critical Review: Is the Neonatal Oral-Motor Assessment Scale, a valid assessment tool to identify and quantify future infant oral-feeding difficulties or oral-motor dysfunction?

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This critical review examines the validity of the Neonatal Oral-Motor Assessment Scale to predict infant feeding difficulties or subsequent oral-motor dysfunction or disorganization. Six papers are reviewed, and study designs include: the original pilot study, systematic qualitative review,

three prospective observational studies, one original pilot study, and one longitudinal observational study.

Results

In the original pilot article by Braun and Palmer (1986), their purpose was to devise a neonatal oral-motor assessment scale (NOMAS) in order to (1) differentiate tongue and jaw movements during both non-

research or study design. Reasonable and valid measures were conducted, and there was no evidence to suggest methods were modified post-hoc. Descriptive statistic analysis was conducted and employed by an outside source (mentioned in the acknowledgements). Inter-rater reliability was not adequately completed, as it only included 5/26 participants and examined 2/3 raters. Mean scores and p-values for all statistical tests were reported. Overall, this study gives suggestive support for the construct validity of the NOMAS as an index of oral motor function in neonates with a gestational age of 34 to 35 weeks.

In a prospective observational study Hawdon, JM., Beauregard, N., Slattery, J., & Kennedy, G., (2000) examined the incidence of feeding problems on a neonatal intensive care unit, described the characteristics of the neonates who were poor feeders, and studied the long

problems, or those undergoing major procedures were excluded. Reliability of the items for the NOMAS sub-score was assessed with Cronbachôs alpha. Test-Retest reliability and the relationship of baseline clinical observations to NOMAS sub-score values were assessed with Pearsonôs correlation coefficients. The first three serial NOMAS scores were used for reliability and temporal validity assessments. Repeated measures ANOVA was used to assess changes in NOMAS sub-scores over time, and Cox proportional hazard models were used to examine the relationship of the transition time and gestational age at full oral feeding to NOMAS sub-scores, and to other baseline characteristics and feeding efficiency measures. A set p-value of <0.05 was defined for analyses relating nominal predictors and feeding performance.

Relatively few infants showed feeding dysfunction on the NOMAS. The results demonstrated that gestational age at birth, birth weight, and initial feeding efficiency predicted shorter transition and earlier acquisition to full oral feeding. The NOMAS scores were found to not predict feeding outcomes (transition time or gestational age of full oral feeding). Significant negative correlations resulted between baseline timed feeding scores and the NOMAS dysfunction sub-scores. The NOMAS showed moderate Test-Retest correlations and only moderate validity for the NOMAS as an indicator of maturation of feeding skills was found.

Bingham et al., 2012 had a clearly defined research

such as the maternal-infant interaction or infants state during feeding. Although the level of evidence for their results was equivocal, Hawdon et al., 2000 suggested that it is difficult for medical and nursing staff to routinely detect babies with immature of disordered feeding patterns, as well as predict those who will experience long-term feeding difficulties, and this idea is prevalent among the other studies reviewed. Additionally, there was no general consensus of the literature regarding the components that comprise successful feeding behavioral signs such as readiness, endurance, and caregiver factors. Finally, because the NOMAS does not have a clear scoring method, many studies had to devise their own method of scoring. This is a big limitation of the