Mahoney Pain Scale (MPS)

Description: The MPS was developed for Australian older adults with advanced dementia. The goals were to assess the presence and severity of pain in adults in the advanced stages of dementia and distinguish pain from agitation. The scale consists of 8 items in total, with four items addressing facial expression, vocalizations, body language and breathing changes and four items on agitated behavior, change in activities, physiological state, current or history of painful conditions. These items were constructed based on an extensive literature review.

Psychometric testing: The psychometrics are limited in that only 2 studies have examined full or partial psychometric properties. The initial study by Mahoney and Peters included 112 residents from New South Wales, Australia with advanced dementia. Scoring occurred during a pleasant and uncomfortable activity, and scorers included 28 registered nurses and 2 nursing assistants. Overall, the scale has acceptable inter-rater reliability and internal consistency. Measures of inter-rater reliability using kappa coefficient ranged from 0.43-0.77 for pleasant activity and 0.55-0.85 for aversive/uncomfortable activity between nurses. In order to verify concurrent validity, 27 nursing assistants made global pain ratings and these were compared to the nurse-administered MPS scores, and kappa coefficient was 0.86. Internal consistent rating for the 8 items resulted in a Cronbach's α of 0.76, while the pain behaviors had an alpha of 0.75 and 0.68 for the agitation items. There was a 98% sensitivity and specificity was reported as 86%.

In one study, Sheu et al. (2011) used the MPS as one tool to examine its facial activity components using the Facial Action Coding System (FACS). The facial action units

being scored were AU 4 (brow lower), AU 6 (cheek raiser), AU 10 (upper-lip raiser), and AU 43 (eyes closed). The MPS assesses a number of facial expressions, such as pleasant, relaxed, or blank expression; sad (eyes down, frowning, teary) or anxious (eyes wide and alarmed) look; occasional or slight grimace (eyes narrowed, brow furrowed, lips parted); definite grimace (eyes narrowed or closed, brow furrowed, lips clearly parted). The MPS showed significant correlations with the FACS at all 3 (mild, moderate, and severe) intensity levels, r= 0.450, 0.675, and 0.593 respectively; this established concurrent validity.

Sheu and colleagues discovered mean inter-rater reliability (5 coders) for mild, moderate, and severe pain (κ= 0.30, 0.23, 0.32 respectively). To show construct (discriminant) validity, pair-wise mean ratings for 6 pain scales were compared, and there was no significant difference between the MPS and NOPPAIN scale. However, the MPS is able to differentiate between mild, moderate and severe pain intensities.

Languages and Settings: Testing was completed in English language in residents from 16 Australian nursing homes.

Feasibility/Clinical Utility: The 13 nurses who completed the feasibility survey reported the tool as easy to use, accurate in assessing pain and coincided with nurses' clinical judgment, and facilitated communication between nurses.

Scoring and Interpretation: The scale consists of 8 items rated on 0-3 scale of minimal pain to severe pain. Total score ranges from 0-24. Initial study proposes general pain score cutoff of 4.5 for severity of pain, and cutoff score on pain vs agitation of 2.75. Pain location is identified from proxy pain maps in which raters lightly touch 22

areas on 2 body pictures and mark the areas that elicit a behavioral response or show signs of a painful pathological process. Observation is required for five minutes. For accuracy in scoring, raters should have knowledge of normal behavior to rate changes in behavior.

Summary/Critique: This tool has great potential to distinguish between two related and common conditions in older adults, pain and agitation. Given the recent focus across healthcare settings to recognize and manage pain and agitation, particularly in older adults, gives credence to the important role this scale could play in assessment. Rating schema and assumptions about pain severity ratings need further validation thereby necessitating additional validation and testing is needed before a recommendation for global use can be made. It appears all levels of nursing can use this tool from registered nurses to unlicensed nursing assistants.

Contact Information for Tool Developer:

We were unable to obtain permission to post the contact information.

References:

Mahoney, A.E., & Peters, L. (2008). The Mahoney Pain Scale: Examining pain and agitation in advanced dementia. *American Journal of Alzheimer's Disease and Other Dementias, 23*(3), 250-61.

Sheu, E., Versloot, J., Nader, R., Kerr, D., & Craig, K.D. (2011). Pain in the elderly: Validity of facial expression components of observational measures. *Clinical Journal of Pain, 27*, 593-601.

Revised 3/2019

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