

Mobilization-Observation-Behavior-Intensity-Dementia Pain Scale (MOBID-2)

Description: The MOBID-2 is a refinement of the MOBID scale, which is a nurse-administered tool developed to observe pain behaviors. The MOBID-2 uses a 2-step process to assess inferred pain intensity at rest and with standardized guided movements in patients with severe cognitive impairment (SCI). For Step 1, the developers of this tool propose a set of standardized guided movements of joints in hands/arms, legs and trunk to capture movement-related pain. Because musculoskeletal pain is often associated with other co-morbid pain conditions, Step 2 involves observation over-time of pain behaviors related to internal organs, head, and skin by localizing pain on pain drawings and assessing pain intensity.

Psychometric testing: Inter-rater reliability of the MOBID-2 is moderate to very good ($\kappa = 0.41-0.90$) while test-retest reliability was good but slightly lower for various pain behaviors ($\kappa = 0.41-0.83$). For guided movements, intra-class coefficient (ICC) ranging 0.90–0.94. In contrast, ICC values for test-retest reliability were 0.60–0.92. As it pertains to pain intensity, moderately strong to very strong inter-rater reliability was observed (ICC= 0.80-0.90) and test-retest was found to be 0.61-0.94. Localization of pain on pain drawings demonstrated moderate to good inter-rater reliability ($\kappa = 0.46-0.80$) and test-retest reliability ($\kappa = 0.48-0.93$). The majority of scoring items demonstrated a high internal consistency (Cronbach's $\alpha = 0.84-0.82$).

Face, content, and construct validity have been demonstrated. Face validity was determined through focus groups with interdisciplinary healthcare professionals (nurses, physicians, and physiotherapists) to ensure instructions were clear and usable.

Construct validity was affirmed when the overall pain intensity scores showed higher association with maximum pain intensity scores in Step 1 items ($\rho = 0.82$) as compared to Step 2 items ($\rho = 0.61$). A US study evaluating the MOBID (Step 1) found that validity with expert clinician pain intensity rating was $\rho = 0.54$ for usual pain, $\rho = 0.57$ for worst pain, and $\rho = 0.40$ for current pain.

The MOBID-2 is responsive to change to decreased pain intensity after a stepwise pharmacological intervention (Husebo, Ostelo, & Strand, 2014). Standard error of the mean and smallest detectable change were 1.9 and 3.1 (0–2 weeks) and 1.4 and 2.3 (2–4 weeks). The MOBID has shown low to moderate association with the Cohen-Mansfield Agitation Inventory ($r = 0.35$ [MOBID-2]; $\rho = 0.15$), sleep disturbance ($\rho = 0.02$), and depression ($\rho = 0.29$).

Languages and Settings: The tool has been tested primarily in Norwegian and the Netherlands nursing homes in Norwegian and Dutch languages. One study has evaluated the MOBID (Step 1) in US nursing homes, involving a sample of 138 persons with dementia residing in Pennsylvania, New Jersey, Georgia, and Alabama nursing homes.

Feasibility/Clinical Utility: The MOBID-2 is “feasible for the staff to use in a clinical setting” (Husebo et al., 2010, p. 386), and the authors also noted that “that health care professionals showed high interest in the development and the framework of the MOBID-2 Pain Scale” (p. 388). One study has evaluated the MOBID with non-clinicians and found training was an adequate method for receiving valid scores. However, non-

clinicians had difficulty eliciting all items requiring movement and often requested assistance from clinical staff to complete the ratings.

Scoring and Interpretation: With each activity, the caregiver is asked to observe for presence and intensity of pain on an 11-point NRS for the three AGS behaviors of Pain noises, Facial expression, and Defense. Lastly, the caregiver is asked to assign an independent overall pain intensity rating on an 11-point NRS. Step 2 asks the rater to mark on a body diagram five possible body areas according to pain behaviors, then for each area to rate the perceived pain intensity on an 11-point NRS. An overall pain intensity on the 11-point NRS is also given in Step 2. The number of pain behavior indicators is counted, and the mean of pain intensities for each of the five items is calculated. The developer has reported that a clinically relevant pain is indicated by a score of 3 or greater.

Summary/Critique: Pain behaviors related to everyday activities in the caregiving context may be subtle and difficult to detect, and the goal of this tool is to detect pain at rest and during movement. Although testing has been limited to a confined population, psychometric testing of the MOBID-2 is strong and promising. There is strong validity and reliability findings and preliminary findings on responsiveness to treatment. The tool requires moving the patient through series of guided movements and rating at rest and with movement that may decrease adoptability for clinical use. Studies with more diverse patient and setting samples is needed.

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References:

Husebo, B.S., Strand, L.I., Moe-Nilssen, R., Husebo, S.B., Snow, A.L., & Ljunggren, A.E. (2007). Mobilization-observation-behavior-intensity-dementia pain scale (MOBID): Development and validation of a nurse-administered pain assessment tool for use in dementia. *Journal of Pain and Symptom Management*, 34(1), 67-80.

Husebo, B.S., Strand, L.I., Moe-Nilssen, R., Husebo, S.B., Aarsland, D., & Ljunggren, A.E. (2008). Who suffers most? Dementia and pain in nursing home patients: A cross-sectional study. *Journal of the American Medical Directors*, 9, 427-433.

Husebo, B.S., Strand, L.I., Moe-Nilssen, R., Husebo, S.B., & Ljunggren, A.E. (2010). Pain in older persons with severe dementia. Psychometric properties of the Mobilization–Observation–Behaviour–Intensity–Dementia (MOBID-2) pain scale in a clinical setting. *Scandinavian Journal of Caring Sciences*, 24, 380-391.

Husebo, B.S., Ostelo, R., & Strand, L.I. (2014). The MOBID-2 pain scale: Reliability and responsiveness to pain in patients with dementia. *European Journal of Pain*, 18, 1419-1430.

Herr, K., Sefcik, J., Neradilek, M.B., Hilgeman, M.M., Nash, P., & Ersek, M. (In press). Psychometric evaluation of the MOBID dementia pain scale in US nursing homes. *Pain Management Nursing*.

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