Tool:	**The FLACC (Face, Legs, Activity, Cry and Consolability) Pain Assessment Tool**
Tool developer:	**Merkel, S.I., Voepel-Lewis, T., Shayevitz, J.R., Malviya S., 1997**
Country of origin:	**USA**

Tool evaluation in cognitively impaired elderly:

Baiardi, J., Parzuchowski, J., Kosik, C., Ames, T., Courtney, N., Locklear, J.

Conceptualization Panel rating: 0	
Purpose	The FLACC is a behavioral scale for scoring postoperative pain in young children. It was developed in order to provide a simple, consistent method for physicians and nurses to identify, document, and evaluate pain. Thus, this purpose does not align with the purpose of tools to assess pain in non-verbal elders. However, it has been included in this review because it has been evaluated for reliability and validity for clinical application with cognitively impaired elderly (Baiardi, Parzuchowski, Kosik, Ames, Courtney, Locklear, 2002).
Conceptual basis	Conceptually this tool was developed to assess acute pain (postoperative pain) in young children. There is no definition of pain and no presentation of the conceptual basis of the tool.
Item Generation	Tool items • Face • Legs • Activity • Cry • Consolability Each item is leveled on a three point scale for severity by behavioral descriptors. Item generation Little information is provided concerning tool item generation.
Content Validity	The FLACC has not been reviewed for content validity relative to elders with dementia who are unable to communicate by independent content experts in the field of pain in elders with dementia.
-Panel Commentary	The relevance of behaviors seen in young children with acute pain in the acute care setting to elders with dementia has not been established. The tool attempts to measure pain severity. However, measurement of pain severity has not been substantiated in the research on pain in elders with dementia. Although this tool has been suggested as a tool for elders with dementia, the conceptual soundness of selected items for older adults is not established. It does not seem appropriate to use this tool in elders with dementia without validating the appropriateness of items for this group, such as: • Leg kicking, arched or jerking activity, squirming are not reported in the literature to be pain behaviors in dementia. • Facial expressions in young children such as "frequent to constant quivering chin", have not been reported as a behavioral pain indicator in

	elders.
	• Consolability is not a pain behavior, but a response to an intervention.
	The behavioral categories on The FLACC do not fit well with the six behavioral categories in the AGS Persistent Pain Guideline. Three behavioral categories are not addressed in The FLACC: Changes in interpersonal interactions, Changes in activity patterns or routines, Mental status changes. Thus, The FLACC does not have content validity when judged against the behaviors in the AGS Guideline.

Subjects **Panel rating: 1**	
Subjects	The FLACC was tested in long-term care in a sample of 6 cognitively impaired elders with documented history of late-stage dementia (Baiardi et al., 2002). Subjects had an identified source of pain, in majority musculoskeletal, and were currently receiving a non-steroidal anti-inflammatory agent suggesting they had persistent pain. Age: 83 years average ($\pm$11.0). Gender: Majority of subjects were female.
-Panel Commentary	The focus on long term care setting is clearly identified. The residents appear to have persistent pain. However, the FLACC was developed for assessment of acute pain in young children in the acute care setting. These residents are identified as having documented late-stage dementia. However, the method for identifying the level of dementia is not identified. There is no information on ethnic/racial diversity. Using 5 subjects per tool item as a rule of thumb, a minimum sample size of 25 subjects (5 items x 5 subjects) would be needed. Thus, this sample of 6 subjects is insufficient for tool evaluation.

Administration, Scoring, Feasibility **Panel rating: 0**	
Administration, Scoring, Feasibility	Each of 5 items of pain behaviors is scored on a 3 point ordinal scale for pain severity. Total scores range from 0 to 10 points, a maximum of 2 points per item.
-Panel Commentary	The method of administration used in the study on elders is not described. Scoring procedures are clearly described. However, interpretation of tool score is unclear. Clinical utility: Information on clinical utility in elders is unknown.

Reliability **Panel rating: 1**	
Internal consistency	No data on internal consistency are available
Interrater reliability	Three trained research observers independently recorded pain assessments using either the FLACC or Modified UAB Pain Assessment Tool. Interrater reliability is based on a total of 69 valid FLACC observations and 56 valid UAB observations from only 6 patients. FLACC observations: Kappa statistic = .404 or less. Poor agreement was noted between observers when scoring cognitively impaired elderly with persistent pain using the FLACC. Factors thought to be contributing to poor reliability included limited facial expressions, verbal complaints, and movement. The researchers conclude that the FLACC is not a useful pain assessment tool for cognitively impaired elderly.
Test-retest reliability	No test-retest or intra-rater reliability of the tool is available.
-Panel commentary	Internal consistency

	Evaluation of internal consistency with elders with dementia is needed. Interrater reliability The measure of interrater reliability is appropriate for the data. The results indicate poor agreement among the raters. The qualifications of the three trained research observers are not specified. The sample size is insufficient for strong conclusions. Test-retest reliability Data on test-retest is needed in elders with dementia.

Validity: Criterion or construct
Panel rating: 1

Construct validity/ Criterion related validity	The FLACC was examined for construct validity in a sample of cognitively impaired elderly with persistent pain conditions (Baiardi et al., 2002). Subjects (N=6) were scored during three usual daily activities pre and post medication. Three observational sets were obtained on each subject on different days and times. 69 valid FLACC observations and 56 valid University of Alabama Behavioral Pain Scale observations (UAB-PBS). Spearman's rho were used in data analysis. FLACC and UAB were significantly correlated.
-Panel commentary	Because the UAB-PBS has not been validated in elders with dementia, its use as a criterion measure in this study is questionable. Spearman's rho data are not reported. The sample is too small for statistical inference to be made.

Summary of panel evaluation of pain assessment tool

The FLACC is a tool conceptually developed and tested for use in assessing pain in young children, not older persons with dementia. The tool items are not conceptually established as appropriate for this population and are not consistent with AGS potential indicators of persistent pain in older adults. Preliminary testing with older persons with dementia suggests the tool is not reliable and validity. Without item revision and additional testing in appropriate samples this tool is not appropriate for use in elders with dementia.

Sources of evidence

Baiardi, J., Parzuchowski, J., Kosik, C., Ames, T., Courtney, N., Locklear, J. (2002, September), *Examination of the reliability of the FLACC Pain Assessment Tool with Cognitively Impaired Elderly*. Poster session presented at the Annual National Conference of Gerontological Nurse Practitioners, Chicago, Ill.

Merkel, S.I., Voepel-Lewis, T., Shayevitz, J.R., Malviya S., (1997). The FLACC: A behavioral scale for scoring postoperative pain in young children. *Pediatric Nursing, 23*(3) 293-297.

Key to panel rating
3= Available evidence is strong
2= Available evidence supports need for further testing
1= Available evidence is insufficient and/or tool revisions are needed
0= Evidence is absent

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