Reliability of the electronic pain assessment tool (ePAT) in residents with moderate to severe dementia: a pilot study

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Background and aims: Pain affects millions of people worldwide including those with dementia. The need for a reliable automated pain assessment scale to quantify pain at the point of care for people with dementia is highly valued because it will remove subjectivity and improve pain management. This will then contribute to improving quality of life of both those with dementia and of those who care for them. A novel tool, the ePAT (electronic Pain Assessment Tool) combines the use of automated facial recognition technology and smart device capabilities to automatically calculate pain intensity. This pilot study aimed to examine agreement reliability of the ePAT among raters when assessing pain in people with moderate-to-severe dementia who dwell in residential aged care facilities.

Methods: Ten residents (40% male; 81.0 ± 11.4 years) with varying degrees and types of dementia were recruited from one aged care home in WA using purposive sampling. Each resident has medical condition(s) known to induce pain during routine activities. Residents were independently rated for pain using the ePAT by two facility staff members in a set of two assessments during rest and mobilisation (e.g. repositioning or walking). Raters were paired to simultaneously assess pain but were blind to each other's scoring. Cohen's Kappa statistic was used to assess the agreement in total pain scores between raters. Kappa (k) was also applied to assess agreement when scores were allocated to broad categories (no pain, mild, moderate, severe pain).

Results: A total of 76 assessments (Rest=19 pairs, Movement=19 pairs) were undertaken by 11 raters over a period of 2 weeks. Raters (18 % male; 44.1 ± 12.6 years) comprised of one clinical nurse, four registered nurses, five enrolled nurses, and one care worker. Rater agreement in broad categories of pain was excellent at rest (k =1.0), where only 2 residents experienced mild pain (others were classified as having no pain). With movement, agreement was moderate (k =0.47), but was excellent for 13 out of 19 paired assessments, and the remaining 6 pairs differed by one category. Agreement in actual pain scores gave weighted kappa=0.72 (95% CI: 0.58-0.86) at rest, and k=0.66 (95% CI: 0.48-0.84) with movement.

Conclusions: These results show promising reliability for the ePAT instrument given the small sample size. They suggest that the ePAT may be used as an objective measure of clinical pain in people with moderate-to-severe dementia.

PainChek
Intelligent Pain Assessment

ePAT