

in older adults; 5) Recommendations for future directions. The findings from this study can inform intervention design considerations and future directions for the use of VR technology for chronic pain management in older adults.

#### BACK PAIN AND HEART FAILURE IN OLDER ADULTS: FINDINGS FROM THE HEALTH ABC STUDY

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Both back pain and heart failure (HF) have negative influence on all aspects of life. Little is known about the impact of back pain on older adults with HF. We include 1295 older adults who had data collected in the 11th year (2007-2008) of the Health, Aging and Body Composition (Health ABC) study to evaluate the effect of back pain on health status among older adults with and without HF. The participants aged 79-91, 54.8% were female and 34.8% were African American. Among 94 participants with HF, 63 (67.0%) had back pain; among 1201 participants without HF, 649 (54.0%) had back pain. Females reporting back pain had 4.76 (95% CI: 1.83, 12.37) times the odds of having HF compared to those without back pain. Male with back pain, compared to those without back pain, had 1.14 times (95% CI: 0.65, 2.02) the odds of having HF. Depressive symptoms were measured by the Center for Epidemiological Studies-Depression (CES-D) scale. Performance and functions were measured by the Established Populations for Epidemiologic Studies in the Elderly (EPESE) performance score, the Health ABC performance battery score and self-reported difficulty with functional tasks. These symptom and performance measures were significantly associated with both back pain and HF, but not the interaction terms of back pain and HF after adjusting demographic variables including gender, race, smoking status and BMI category. The high incidence and negative impact of back pain highlighted the needs of developing strategies in pain management among older adults with and without HF.

#### COMPLEMENTARY AND INTEGRATIVE HEALTH APPROACHES ARE UNDERUSED AMONG OLDER VETERANS WITH MUSCULOSKELETAL PAIN

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Complementary and integrative health (CIH) approaches are recommended in national policy guidelines as viable options for managing chronic pain, yet their use among Veterans has been suboptimal, especially for older Veterans. We identified 64,444 Veterans with a diagnosis of

musculoskeletal disorders (MSD) who reported a moderate to severe pain intensity during primary care visits in 2013 from the Veterans Health Administration (VHA) electronic records. Using natural language processing (NLP), CIH use (acupuncture, chiropractic care and massage) was documented for 8169 (6.5%) of 125408 primary care visits in providers' progress notes. Compared to their younger counterparts, older Veterans aged  $\geq 65$  years had 21% lower likelihood of using CIH during the year [Odds Ratio (OR): 0.79; 95% Confidence Intervals (CI): 0.73, 0.86] after accounting for demographic, clinical, temporal and spatial confounding using a generalized estimating equation logistic model. Non-white race/ethnicity, tobacco use, medical comorbidities and diagnosis of alcohol or substance use disorders were independently associated with less CIH use (ORs ranging 0.97-0.80,  $p < 0.03-0.0001$ ); whereas female gender, being married and number of MSD diagnoses were associated with greater CIH use (ORs ranging 1.13-1.30,  $p < 0.0001$ ). Redefining CIH use as chiropractic care alone [4.8% person-visits; OR: 0.78 (95% CI: 0.70, 0.86)] or incorporating structured data [9.0% person-visits; OR: 0.76 (95% CI: 0.70-0.82)] in the adjusted GEE model derived consistent results. Research to identify and address barriers to CIH use among older Veterans is encouraged.

#### DEVELOPING AN RAI-MDS BEHAVIOR-BASED PAIN SCALE FOR LONG-TERM CARE RESIDENTS WITH ADVANCED DEMENTIA

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In Canadian and many international long-term care (LTC) facilities, pain assessment frequently relies on data from the Resident Assessment Instrument – Minimum Data Set 2.0 (RAI-MDS). The RAI-MDS produces a two-item scale, measuring both pain frequency and pain intensity. This scale correlates well with self-reported pain in cognitively intact LTC residents, but despite repeated testing, is less valid for use in residents with more advanced cognitive impairment who are unable to self-report their pain. In this study we aimed to develop and validate a behaviour-based pain assessment scale for long-term care residents using data available in the RAI-MDS. To construct our initial scale, we reviewed the literature and compiled a list of observable indicators of pain (e.g., grimacing) and linked these with 28 similar items available in the RAI-MDS. Using Delphi techniques, we further refined this to 20 items. We then evaluated the psychometric properties of our scale using two independent, representative samples, of urban LTC residents in Western Canada. Exploratory factor analyses were conducted in sample one ( $n=16,282$ ) and confirmatory factor analyses (CFA) were then conducted in sample two ( $n=15,785$ ) in order to test, and confirm, our model. A two-factor solution was identified grouping RAI-MDS items into subscales 1) change in status (e.g., new onset restlessness) and 2) behaviours (e.g., crying). Commonly recognized model fit indices were acceptable suggesting the adequacy of the two-factor solution. Results provide preliminary support for the use of behavioural-based pain assessment scale using RAI-MDS data. Further evaluation and validation of our scale is warranted.