P1-34: Assessing the Accuracy and Precision of Ankle-Worn Accelerometers in Persons at Risk for Pressure Ulcers

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Abstract:

Introduction: Pressure ulcer formation is associated with out-of-bed inactivity and in-bed immobility. Characterizing the types of movements performed in persons at risk for pressure ulcers may lead to more effective evidence-based interventions. The study aims were to measure inter-rater reliability for observed in-bed mobility and out-of-bed activity, to evaluate the agreement between observed and actigraphy-recorded movement, and to detect differences in actigraphy-recorded data at three levels of mobility.

Method(s): A convenience sample of nursing facility residents aged 65 and older (n = 9) at three levels of mobility from the Braden Scale for Predicting Pressure Sore Risk© wore actigraphs (Basic Octagonal Actigraph, Ambulatory Monitoring, Inc., Ardsley, NY) on the ankle for 26 hours. Observers recorded independent and assisted movements as they occurred or documented the status of the participant, e.g., sitting, lying at ten minute intervals.

Results: Observer inter-rater reliability by percent agreement for mobility and activity was 93% and 94% respectively. Observer to actigraph agreement was acceptable for discrete episodes of movement however observer documentation failed to capture movement duration. The accumulated mean 24-hour activity intensity for the Braden Scale Mobility Subscale Scores 1, 2, and 3 were 28, 91, and 137 respectively.

Discussion & Conclusions: Observer inter-rater reliability for any movement was good. An algorithm is needed to resolve issues in classifying agreement between continuous data [actigraph] and discrete data [observer]. Differences in mobility subscales scores are reflected in the cumulative mean activity levels.

Abstract History:
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No, I (or a member of my immediate family) have not received something of value* from or own stock (or stock options) in a commercial company or institution related directly or indirectly to the subject of my presentation.

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