the participant's life, influences on aging well, and their aging process. Thematic analysis was used to establish codes and main themes based on the three different cultural regions of Alaska. Results argue for the expansion and emphasize on social components, historical perspectives, and the importance of place (cultural and geographic differences), as well as generativity and gerotranscendence. Findings will be used to develop community-specific health promotion and prevention programs to help Elders find meaningful activities that promote health and teach individuals to cope with aging-related changes.

SESSION 4165 (SYMPOSIUM)

THE CLINICAL TRANSLATION OF SENSOR TECHNOLOGY TO IMPROVE PROVIDER AND PATIENT CARE: METHODS AND ACCEPTABILITY

Chair: Megan Huisingh-Scheetz, *University of Chicago, Chicago, Illinois, United States*
Co-Chair: Qianli Xue, *Department of Medicine, School of Medicine, Johns Hopkins University, Baltimore, Maryland, United States*
Discussant: Jennifer A. Schrack, *Johns Hopkins University, Baltimore, Maryland, United States*

Sensor-based technologies are rapidly emerging and are capable of collecting objective, dynamic, and high resolution health data not captured in the clinical setting. However, the precise clinical applications of such devices are not yet well delineated; extensive challenges to their implementation remain. The objectives of this symposium are to highlight a) opportunities for sensor technology use in clinical practice, b) implementation challenges reported by key stakeholders, and c) an NIH/VA-sponsored initiative to create an open technology research platform to improve aging technology research. Dr. Young will discuss the novel application of wearable sensors for maintaining proper posture/position during patient transfer including the generation of sensor metrics defining proper lifting technique and body mechanics. Dr. Huisingh-Scheetz will report analytic strategies for identifying frailty using wrist-worn accelerometry data collected in the free-living environment in the NIA-supported National Social Life, Health and Aging Project dataset. She will report her work relating hourly activity and between/within subject hourly activity variance to frailty. Ms. Blinka will report qualitative feedback collected from patients, caregivers, and healthcare providers about their perspectives on the utility and challenges of using sensor technology in a clinical context. Dr. Kaye will discuss ongoing developments addressing challenges to implementing technology use in clinical care, with particular attention to the Collaborative Aging Research using Technology (CART) initiative supported by the NIH and VA. Collectively, these presentations will advance sensor technology to improve healthcare delivery.

A FEASIBILITY STUDY: THE DEVELOPMENT OF WEARABLE TECHNOLOGY FOR INJURY PREVENTION AMONG DIRECT CARE WORKERS

Yuchi Young,[1] Yuchi Young,[1] Mitch Leventhal,[1] Jonathan Muckell,[2] Peter E. Raymond,[3] Fred Erlich,[4] and Christopher Paynter[5], *1. SUNY at Albany, Albany, New York, United States, 2. SUNY at Albany, Engineering & Computer engineering, Albany, New York, United States, 3. The New Bureau, New York, New York, United States, 4. Living Resources, Inc., Albany, New York, United States, 5. SUNY at Albany, Albany, New York, United States*

Objectives: 1) create metrics for lifting techniques and transferring mechanisms, 2) calibrate sensors for data collection 3) identify potential injurious posture among home health aides (HHAs) while transferring patients. Participants: 7 HHAs and a physical therapist. Interview and sensor data were collected. Outcome variables included improper lifting techniques and improper body mechanisms. Obesity of HHAs was associated with worse scores of body mechanics ($p < 0.0001$), while fear of injury with better body mechanics ($p < 0.0001$). GEE results identified that twisting the spine during transfers (OR = 6.3; 95% CI: 1.09–36.7) and not using a wide support base when lifting from supine to sitting (OR= 6.0, 95% CI: 2.03–17.7) were associated with improper lifting technique and body mechanics. Results show it is viable to use sensor technology to collect HHAs' data to design intervention for injury prevention. A larger-scale study is needed to validate the results.

NEW ACCELEROMETRY PATTERNS IN FRAILTY: HOURLY ACTIVITY AND VARIANCE.

Megan Huisingh-Scheetz,[1] Kristen Wroblewski,[1] Linda Waite,[1] Elbert Huang,[1] Donald Hedeker,[1] and L. P. Schumm[1], *1. University of Chicago, Chicago, Illinois, United States*

Wearable sensors may improve our ability to identify frailty in the community. Frailty has been historically defined, in part, by reduced average activity; however, new analytic methods of aggregate, free-living accelerometry data suggest that frailty may be more fully characterized above and beyond reduced average activity. Using mixed-effect regression models of awake hourly activity from the National Social Life, Health and Aging Project dataset, we have shown that frail adult activity is most reduced in the morning relative to pre- and non-frail adults rather than the afternoon or evening. High residual between- and within-subject activity variance in this model prompted further study of activity variance. A follow-up analysis using a mixed-effect location-scale model of hourly activity data revealed that increasing frailty in older adults is associated with greater between-subject as well as within-subject hourly activity variability, particularly in the morning and afternoon. Study implications and future directions will be discussed.

DEVELOPING A SENSOR-BASED MOBILE APPLICATION FOR IN-HOME FRAILTY ASSESSMENT: A QUALITATIVE STUDY

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