E. Elmer, T. van Tilburg, T. Fokkema. Sexual Orientation Marginalization and Loneliness: Age and Gender Differences

**Purpose**
Compared to their heterosexual peers, lesbian, gay and bisexual (LGB) adults are at increased risk for loneliness. Research suggests that this disparity is due societal stigma and discrimination of sexual minorities. The current study explored age and gender differences in levels of emotional and social loneliness as well as perceived marginalization (defined as everyday discrimination and microaggressions) among LGB adults. It also examined age and gender differences in factors linking marginalization and loneliness, namely minority stress (e.g., internalized homonegativity, sexual orientation concealment, and stigma preoccupation) as well as social anxiety and social inhibition. Age and gender differences in the possible protective effect of community involvement were also explored.

**Method**
An international sample of 7,580 LGB adults aged 18-88 completed an online survey about social relationships and mental well-being. Mean levels of all variables were compared across age groups (18-49 vs. 50-88) and gender. Subsequently, structural equation modeling and multiple group analysis was used to test the mediation model illustrated in figure 1 and to examine the strength of relationship between the variables for older adults (n=1,250) vs. younger adults (n=6,330) as well as for men vs. women.

**Results & Discussion**
Older adults in this study were less lonely than younger adults and exhibited lower levels of perceived marginalization, minority stress, social anxiety, and social inhibition. They were also more involved in the LGB community. Effect sizes for these age differences were medium to large. Regarding gender, women in both age groups were more likely to perceive microaggressions. In addition, while the strength of the relationship between variables was similar across all subgroups, there were some statistically significant differences. In particular, the relationship between marginalization and social loneliness was stronger for older men compared to younger men and younger women, as was the relationship between stigma preoccupation and social inhibition. In addition, the relationship between marginalization and concealment was stronger for older women compared to both younger and older men. Despite older adults’ lower levels of loneliness as well as marginalization, minority stress, anxiety, and social inhibition, the strength of relationships between marginalization and negative outcomes seems to be equal to, and in some cases greater than, the strength of the same relationships among younger adults. Thus, while it appears that “things get better” for LGB adults as they age (i.e., fewer negative experiences, better mental health), marginalization still hurts the same way it does for younger people, and perhaps even more so. Moreover, marginalization seems to have an especially negative effect on older women’s openness about their sexual orientation. Results underscore the continuing need to reduce societal stigma and discrimination, and suggest possible avenues for individual mental health intervention to reduce loneliness, such as cognitive-behavioural therapy designed to target minority stress, social anxiety, and social inhibition.

![Figure 1: Relationships between marginalization, minority stress, social anxiety, social inhibition, and loneliness](#)

Keywords: LGBT, marginalization, loneliness, social anxiety, social inhibition

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L. Foley, A. Gordon. *The Impact that School Children Have on Residents Living in Long Term Care Homes.* **Purpose** The use of Intergenerational Community Programs in Residential Care to facilitate social engagement and lessen the experience of loneliness. **Method** Loneliness is part of the human condition but older people are particularly vulnerable. Research indicates trends associated with ageing that are potentially contributing to loneliness include greater geographical mobility of families, reduced inter-generational living and less cohesive communities. Numerous studies over the past decade have shown that feeling lonely is associated with more depressive symptoms in older adults. Cacioppo and Hawley’s in their 2009 research on perceived social isolation determined that loneliness is a risk factor for, and may contribute to, poorer overall cognitive performance, faster cognitive decline, poorer executive functioning, more negativity and depressive cognitive behaviour. Nobody relishes the prospect of aging without their social network (friends and family) to help them through the difficult times, yet, that is what many Canadian seniors face. Statistics Canada reports that one-fifth of seniors do not participate in weekly or even monthly activities. Social contacts tend to decrease as we age for a variety of reasons, including retirement, the death of friends and family, or lack of mobility. Regardless of the cause, the consequences of loneliness can be harmful. Long Term Care residents are at the highest risk for feeling lonely and the associated risk factors. As a means to combat loneliness, Park Place Seniors Living has implemented Intergenerational Programing. These programs brings young public school students (grades 1, 2 and 3) into the care setting to integrate with the seniors. **Results & Discussion** At Park Place Seniors Living, we have found that developing connections between our residents and these young students has provided real opportunity for the students to learn how to interact with people different from themselves. The seniors benefit with social contact from the students. The visits have helped to develop real connections between people of different ages and to facilitate engagement between generations supporting and nurturing each other in meaningful ways. Our presentation will provide a more in depth overview of the programs and related policies, and most important the benefits associated with bringing seniors living in long-term care and young school students together.

**References:**


**Keywords:** Intergenerational programming an intervention to combat loneliness

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Aging populations are straining healthcare systems everywhere. Recovery from surgical interventions is particularly taxing to both elderly patients and society at large. Improving geriatric surgical care necessitates better tools to enable researchers and clinicians to gather quality patient-centric data. Accurately evaluating postoperative mobility in elderly patients and how various anesthetic, analgesic and postoperative medications influence recovery is rarely if ever done. Obtaining objective data about a patient’s pre, intra and post-operative mobility and activity could not only help identify ways of speeding up recovery, but could also better delineate which patients will (or as importantly will not) benefit from certain surgical procedures. Some elderly patients have difficulty evaluating their physical activity and underestimate their limitations. Patient interaction and exchange with healthcare workers are almost by definition a subjective experience, and such that the addition of objective mobility sensor data has the potential to enhance the patient-physician interaction. The purpose of this project is to develop a low-cost and easily deployable Bluetooth Low Energy (BLE) based proof-of-concept, system that would enable clinicians to objectively evaluate perioperative patient mobility. With the help of BLE signal strength and the uniqueness the BLE based hardware addresses, the patient can be uniquely identified and located, and have his mobility determined and tracked in various settings (home, hospital etc.). This mobility location system will integrate into a larger patient-centric data gathering platform being developed by our partners. The experiments were conducted and analyzed to identify and overcome the challenges encountered while developing the radiolocation system. Through the proposed system, localization algorithms are being developed and evaluated based on experimental observations.

Methods: An architecture for the proposed BLE communication system was designed, developed and implemented as shown in Figure 1. The system has been designed to send data from a patient-worn beacon or from a walking aid mounted beacon, to the wall mounted central monitoring, and then onto the cloud computing system via BLE Fixed Scanners (FS) and Gateways. Third party devices were used for beacons, fixed scanners and gateways. All of the IDs of Internet-of-Things (IoT) devices, including those attached to patients, are stored in a cloud database. FS measures the strength signal emitting from beacon. Based on the signal strength measurement coming from FS at known locations, the distance of beacons can be estimated, thereby localizing the patient’s beacon. Currently, the study is being conducted to determine the accuracy of the BLE based localization system w.r.t the chosen parameter Received Signal Strength (RSS).

Results & Discussion: From the studies, we can conclude that the accuracy of estimating distance of beacon actually depends on the distance itself. Higher the distances decrease the probability of correctly estimating the position of beacons. Therefore, regions in room/floor can be assigned to specific cluster/area w.r.t FS devices based on the lower distance estimation errors. Then, the beacon can be assigned to the region which corresponds to FS measuring highest average signal strength. Currently, the efforts are being made to improve the accuracy of the proposed algorithm. Furthermore, localization and mobility improvements are being made by incorporating other sensing data such as accelerometer data. In the long run, the proposed system will be used to synchronize, communicate, and fuse with other patient-worn sensor data. Low-cost wearable accelerometers and other patient-worn sensors, along with sensors attached to walking aids, and environmental sensors will be used to gain a better understanding of elderly patient mobility, which will in turn help clinicians better tailor various therapeutic interventions, with the ultimate end goal of improving overall care and patient satisfaction.

References:

Keywords: RSSI, Bluetooth Low energy, patient tracking, activity tracking
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M. Rasoulidansh, S. Payandeh, H. Homapour, R. Ranjan. Sleep self-monitoring system for elderly using depth sensor and smartphone. **Purpose** Sleep is one of the important factors which can strongly affect both physical and mental state of elderly in their daily lives. Quality of sleep can be related to various health problems such as diabetes, obesity, and depression. Monitoring sleep disorders are even more important for elderly population. For example, sleep disorder can be an important factor which can affect depression and social interaction and networking in independently living elder. Tracking sleep postures is the first step toward self-regulation which can results in improving sleep quality. However, design and development of an effective sleep-monitoring system remains a big challenge. Design of a suitable user(elderly)-interface with such monitoring system introduces additional challenges. By designing an appropriate user-interface for the elderly, it can be possible to provide better information to improve their sleep quality leading to a healthier life-style. In this project, we designed a sleep-monitoring system by considering the special needs associated with the elderly living conditions such as reduced cognitive capability, gradual loss of sight and lack of self-confidence in using modern technologies.

**Method** There are a number of spatial factors that can be monitored in order to relate to the quality of sleep. These can be: a) the time that one goes to bed, b) the time one wakes up and c) sleep posture and its variations. In our study, we monitored and classified sleep postures of the subjects using a single depth sensor (i.e. Kinect sensor) which can supply all three above mentioned spatial information. We have designed and implemented a user-interface which can assist the elderly to better understand and visualized information associated with their sleep quality (i.e. their postures, sleep duration, etc.) despite their aging impairments and barriers. **Results & Discussion** Figure 1 shows the first page of the user-interface. We carried-out an initial usability study with three elderly participants (age range 55+). Users were asked to accomplish nine tasks associated with parameters recorded during the sleep monitoring phase. For example, information about their sleep postures, sleep-duration, and the overall quality of their sleep. The results of this initial usability study suggests the overall satisfaction of elderly in understanding the user-interface to better understand and visualized information. The study also suggests future research direction in using various notions and terminologies in sleep monitoring applications such as global sleep score which are not understandable by older adults.

**References:**

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![Figure1. the overview of the first page of the designed interface](image-url)
J. Rockwell. Alone in a crowd? Insights from older adults’ stories of relocation to assisted living. **Purpose** The assisted living model of housing plus support for older adults has become increasingly popular in British Columbia since the restructuring of provincial health care initiated in 2001. In addition to providing support with personal care and daily tasks, assisted living residences are meant to offer an environment for positive social connections and engagement. To date, however, there has been little research on residents’ day-to-day experiences within this setting, which is important in understanding what service users think of this new tier of care. The purpose of this research was therefore to explore older adults’ stories of relocation to assisted living. **Method** This doctoral study employed in-depth narrative interviewing as well as document analysis of publicly-available assisted living documents. **Results & Discussion** The results of this study suggest that, for older adults relocating to assisted living, social opportunities beyond standard practices such as assigned seating at meals and organized activity programs are necessary to reduce the isolation individuals may feel when entering a congregate living environment. In particular, participant narratives highlighted several actions and initiatives that would be helpful in fostering ongoing social and place connections, including: a buddy system for incoming residents, specific welcoming procedures, rethinking the social functionality of common areas, and exploring community-building opportunities such as in-house volunteering and organizational input.

**References**

**Keywords**: Assisted living, relocation, social connection, volunteering, meaningful activity
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Sheets, M. Malone, S. MacDonald, A. Smith, M. Sima, S. Hundza. **Smartthings technologies to support community-dwelling older adults living with dementia and their care partners** **Purpose** Canada cannot keep up with the expected increases in care needs unless innovative technologies are employed to reduce demand on caregivers by helping older adults with daily living activities. Moreover, it goes without saying that the majority of older adults prefer to live at home rather than move into supportive housing. Voice assisted technologies that connect to smart things are relatively new to the market and have great potential to support “aging in community.” The purpose of this study is to develop a low-cost “smart home” using voice-assisted technologies for community-dwelling older adults with dementia and their caregivers. **Methods** A mixed methods design is being used to investigate the impact of voice controlled smart devices. The sample consists of fifteen community-dwelling older adults with dementia and their family caregivers. After an initial assessment and consultation, a voice assisted system will be installed and connected to a suite of smart things. Questionnaires and in-person interview explore the challenges and benefits of the smart home system and the overall impact on quality of life, well-being and daily living. **Results & Discussion** Low-cost smart technologies are a novel way to support persons living with early stage dementia and their care partners. This study will contribute to our understanding of the utility of smart things for community-dwelling older adults living with dementia and the impact on quality of life, health and independence.

**References**

**Keywords**: smart things, voice assisted, dementia, caregiving
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D. Sheets, S. MacDonald, A. Smith, M. Kennedy, C. Sima, C. Asche. Voices in Motion: An Intergenerational Choir for Community-dwelling Older Adults with Alzheimer’s Disease and their Caregivers. 

**Purpose**
Alzheimer’s disease is a progressive neuropathological condition that affects many facets of life for person’s with the disease (e.g., memory and language impairment, confusion, irritability, depression) as well as their caregivers (e.g., caregiver burden, diminished wellbeing). Given that there is no cure, it is critically important to focus efforts on community-based programs that can maximize quality of life for persons with dementia (PwD) and their caregivers. As dementia progresses, caregivers and the PwD are at risk for significant social isolation. Arts-based approaches to dementia prevention shift attention away from disease-related declines and losses toward participation and reducing stigma. The purpose of *Voices in Motion* (ViM) is to investigate the effects of participation in an intergenerational community choir involving persons with Alzheimer’s disease, their caregivers and students on social inclusion, health and well-being.

**Method**
The initial pilot study (completed in Spring 2018) employed a mixed-method design (integrating both qualitative and quantitative approaches) to evaluate the impact of participating in an intergenerational dementia-friendly choir on quality of life, cognition, and social networks. Data collection focused on caregiver/person with dementia dyads (n=14) and high school students (n=18). **Results & Discussion**
Data collection is complete for our inaugural choir season in which we partnered with a local high school to support the caregiver/PwD dyads. In Fall 2018, 2 choirs will be implemented with data collection continuing. Preliminary findings indicate the choirs can reduce the stigma of dementia and increase social connections as well as improving cognition. Qualitative findings with high school students indicate a more positive view of dementia and a deepening in social relationship with older adults. **Implications**. Choirs are an inexpensive, non-pharmacological intervention with the potential to reduce healthcare costs and improve quality of life for PwD and their caregivers. We expect findings to support the view that participation in a community-based choir has significant potential for mitigating the symptoms of dementia and for promoting social inclusion and acceptance of PwD in their communities. The results of this study will hopefully sustain long-term interest in developing community choirs for PwD in many diverse communities.

**References**
1. CTV, April 26, 2018, https://vancouverisland.ctvnews.ca/video?clipId=1381204

**Keywords:** choir, dementia, Alzheimer’s disease, non-pharmacological intervention, policy implications

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