Remote Smartphone Assessment of Dual Task Walking, Self-Reported Head Trauma and Health in Retired NFL Players


Repeated exposure to head trauma in early life has been linked to brain pathology, along with physical, mental, and emotional distress in later life. Still, the longer-term effects of such head trauma on objective metrics of cognitive-motor function remain largely unknown. We thus created and validated a smartphone-based assessment of dual task walking—a clinically-meaningful test of cognitive-motor function—to enable study of large numbers of older adults who have been exposed to head trauma. As proof-of-concept, we recruited 49 retired NFL players aged 29–75 years from the Football Players Health Study at Harvard University. They completed a health history/status questionnaire, as well as the smartphone-based dual task walking assessment within their own home. Players who self-reported suffering >5 hits to their head and/or neck followed by concussion-like symptoms during their playing careers, compared to those reporting fewer such hits, exhibited greater stride time variability, particularly when dual tasking (ANCOVA group-by-walking condition interaction: F=7.6, p=0.004). This effect was independent of age, height and body mass. Those who walked with greater dual task stride time variability also reported worse physical and mental health measured by the PROMIS Physical Function Short Form (r²=0.30, p<0.02) and the Neuro-Quality of Life questionnaire (r²=0.25, p=0.02). These results highlight the feasibility of remote, smartphone-based gait assessments to track meaningful health outcomes in aging populations, and suggest that dual task stride time variability may be sensitive to the history and long-term consequences of brain damage due to repetitive head trauma.

Spillover Effect of Spouses’ or Partners’ Unemployment on Older Adults’ Mental Health: A Longitudinal Analysis

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The negative impact of unemployment on older workers’ mental health has long been identified with consequences such as depression, anxiety, and the sense of loss of identity and belongingness. However, to-date, the impact of a spouse’s or partner’s unemployment on the older adults’ mental health is much less known. In the early 2000s, researchers had examined this spillover effect using the early waves of longitudinal data (1992–1996) from the Health and Retirement Study (HRS). However, they were not able to detect any significant findings. Recently, two groups of researchers from Germany and Australia restarted this line of work and provided evidence of the spillover effect. In this study, we reexamined this hypothesis using the HRS data. Different from the previous study, we used six waves (2004–2014) of data from the recent decade. Our sample was older adults age 50+ with a spouse/partner. The final sample size was 19,379 observations for 6,643 individuals. Drawing from previous study findings, we also examined the buffering effect of formal volunteering for an organization on the negative impact of a partner’s unemployment. We used fixed effects modeling to examine within-person change and control for time-invariant confounders. We controlled for time-varying health conditions and demographics. Results confirmed our hypotheses: 1) a spouse/partner’s unemployment was negatively associated with greater physical and mental health measured by the PROMIS

Rumination Mediates the Relationship Between Sleep Quality and Depression Among Older Adults

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Poor sleep quality is common among older adults and contributes to depressive symptoms. Mechanisms of this relationship are poorly understood. Inhibitory control is an effortful cognitive process that, when impaired, increases likelihood of fixation on negative repetitive thought processes (rumination), which is associated with depressive symptomatology. Primary hypotheses are that rumination mediates the relationship between sleep quality and depression among older adults, and inhibitory control may have a buffering effect. Participants were N=39 adults over the age of 70 (M=76.49, SD=4.45) years. The sample was predominantly female (61.54%) and Caucasian (89.74%). Participants completed the Geriatric Depression Scale, Pittsburgh Sleep Quality Index, Ruminative Response Scale, and a Stroop task (inhibitory control). Inhibitory control scores were log transformed and median split, and analyses were bootstrapped using 10,000 iterations to normalize the distribution. Poorer sleep quality was associated with higher rumination and depressive symptomatology; however, these relationships were not significant among older adults with higher inhibitory control. Rumination significantly mediated the relationship between sleep quality and depression, but inhibitory control did not significantly moderate the association between sleep and rumination in the final model. Thus, the primary findings of this study are that the relationship between sleep quality and depressive symptoms was largely mitigated by strong inhibitory control, and that rumination may be one mechanism of depression among older adults with poor sleep quality. The results of this study suggest that rumination may be a relevant target for intervention in older adults with poor sleep quality, depressive symptoms, and rumination.

Use disorders (1.9%-11.3%). Factors consistently associated with PTSD comorbidities included age, war-related exposures, other clinical conditions, psychosocial characteristics, and quality of life. Despite heterogeneity in research designs and methodological limitations of existing studies, this review highlights the need to consider comorbid neurocognitive and psychiatric disorders among older veterans with PTSD in order to individualize care approaches. Considering factors associated with neurocognitive and psychiatric comorbidities of PTSD in study designs could improve prediction of comorbidity and, ultimately, strengthen the scientific basis for tailoring treatment approaches.
with older adults’ depressive symptoms; 2) volunteering buffered the negative impact of a spouse/partner’s unemployment for older adults’ depressive symptoms. Results indicated that the dire effect of unemployment extends to immediate family members. Implications for policy change is discussed.

SUCCESSFUL AGING IN FORMER INDENTURED CHILD LABORERS IN SWITZERLAND—A QUALITATIVE STUDY
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Adult survivors of childhood abuse, trauma, and maltreatment have an increased risk for the development of mental disorders and physical diseases. According to dominating stress paradigms, the chances for successful aging are low in such high-risk individuals. It was therefore the aim of this qualitative study to examine factors related to successful aging in the unique subgroup of healthy aging former indentured child laborers (Verdingkinder) in Switzerland. Semi-structured interviews (60–120 minutes) were conducted with N=12 former Verdingkinder (Mage=71 years; 50% female), who were screened and selected for being successful agers. Particular focus was placed on coping mechanisms and formative experiences during and after their time as a Verdingkind. Additional focus was placed on participants’ subjective theories on the association between their past as an indentured child laborer and their current favorable objective and subjective health, functionality, and social embeddedness. The Grounded Theory method was used to analyze the transcribed interviews. For the explanation of successful aging in former Verdingkinder, a multifactorial model was identified, which included the principal factors ‘lightheartedness’, ‘self-enhancement’, and ‘social purpose’. According to the subjective theories of the participants, the experience of hardship facilitated the development of resources, including motivation, personality traits, and individual coping strategies, which they associated with their successful aging. On the basis of these results, it may be concluded that under unfavorable circumstances, thriving (as triggered by childhood abuse, trauma, and maltreatment), can lead to the development of beneficial resources and attitudes towards life, which can translate into successful aging.

SUCCESSFUL COMMUNITY RE-ENTRY FOR OLDER ADULTS WITH SCHIZOPHRENIA
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Objectives: Older adults with serious mental illness (SMI) often have poor physical health in addition to serious mental health issues. Sustained engagement in a group physical activity program may provide necessary physical and mental health benefits. The purpose of this report is to describe the impact of a pilot videogame-based group physical activity program using the Kinect for Xbox 360 game system (Microsoft, Redmond, WA) on participant’s health. Methods: Participants played an active videogame for 50-minute sessions three times a week for 10 weeks. Qualitative interviews were conducted with six participants upon completion of the program. Qualitative data were collected and analyzed with grounded theory methodology. Results: Participants expressed enthusiasm for the physical activity program indicating it was an activity that they looked forward to doing. Engaging in positive health behaviors emerged as a central finding which included acknowledgement of physical limitations yet a willingness to try new activities (i.e., skiing); pushing boundaries while playing the games (i.e., playing games at a higher physical intensity level); and becoming more engaged in self-care. Participants noted an impact on their health such as feeling stronger, being more engaged socially, reduction in smoking for those that smoked, and more ease in doing their daily activities. Conclusion: Our results suggest that engagement in an intense videogame-based group physical activity program has a positive impact on participants’ overall health. The group atmosphere, variety of games, and the structure of the program were key features of the program that participants noted.

THE EXPERIENCES OF OLDER ADULTS WITH SERIOUS MENTAL ILLNESS IN A GROUP VIDEOGAME-BASED PHYSICAL ACTIVITY PROGRAM
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Objectives: Older adults with serious mental illness (SMI) often have poor physical health in addition to serious mental health issues. Sustained engagement in a group physical activity program may provide necessary physical and mental health benefits. The purpose of this paper is to describe the impact of a pilot videogame-based group physical activity program using the Kinect for Xbox 360 game system (Microsoft, Redmond, WA) on participant’s health. Methods: Participants played an active videogame for 50-minute sessions three times a week for 10 weeks. Qualitative interviews were conducted with sixteen participants upon completion of the program. Qualitative data were collected and analyzed with grounded theory methodology. Results: Participants expressed enthusiasm for the physical activity program indicating it was an activity that they looked forward to doing. Engaging in positive health behaviors emerged as a central finding which included acknowledgement of physical limitations yet a willingness to try new activities (i.e., skiing); pushing boundaries while playing the games (i.e., playing games at a higher physical intensity level); and becoming more engaged in self-care. Participants noted an impact on their health such as feeling stronger, being more engaged socially, reduction in smoking for those that smoked, and more ease in doing their daily activities. Conclusion: Our results suggest that engagement in an intense videogame-based group physical activity program has a positive impact on participants’ overall health. The group atmosphere, variety of games, and the structure of the program were key features of the program that participants noted.

THE IMPACT OF CELL PHONE UTILIZATION ON DEPRESSION AMONG THE KOREAN ELDERLY LIVING ALONE
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Living alone elders have more risk factors of depression than those who live with others because they are likely to experience social isolation due to decreased social contacts.