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In this study, we examined the association between hearing aids (HAs) and the onset of Alzheimer's disease or dementia; depression or anxiety; drug or alcohol disorders; and falls among adults aged 50 and older with hearing loss (HL). We performed a retrospective study of 176,716 adults (50+) with HL diagnoses using a national, insurance claims data (2008-2016). We used Kaplan Meier curves to examine disease-free survival and Cox regression models to examine the risk-adjusted association between HAs and time to diagnosis of 4 age-related/HL-associated conditions within 3 years of HL diagnosis. Large gender and racial/ethnic differences exist in HAs use. Approximately 11.3% of women vs. 14.5% of men used HAs (95% CI Difference: -0.04, -0.03). About 14.1% of Whites (95% CI: 0.14, 0.14) vs. 9.5% of Blacks (95% CI: 0.09, 0.10) and 7.8% of Hispanics (95% CI: 0.07, 0.08) used HAs. The risk-adjusted hazard ratios of being diagnosed with Alzheimer's disease or dementia, depression or anxiety, drug/alcohol disorders, and injurious falls within 3 years after HL diagnosis, for those who used HA vs. those who did not, were lower by 0.82 (95% CI: 0.76-0.88), 0.92 (95% CI: 0.89-0.95), 0.91 (95% CI:0.80-1.04), and 0.86 (95% CI: 0.81-0.92), respectively. Use of HAs is associated with delayed onset of Alzheimer's, dementia, depression, anxiety, and injurious falls among adults 50 years of age and older with HL. This is important because HL are increasingly common among older adults and early HL diagnosis and use of HAs may prevent or delay physical and mental decline.

INTRODUCING ARTIFICIAL COMPANIONS TO USERS WITH DEMENTIA IN UNREGULATED MARKETS: OPPORTUNITIES VS. ETHICAL ISSUES

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Because of the high costs of providing long-term care, artificial companions are increasingly considered an opportunity to provide support to older adults with cognitive impairment while saving costs. Artificial companion can comfort and inform, thus inducing a sense of being in a relationship. Sensors and algorithms usually allow these applications to exude a life-like feel. The explosion of these technologies has created a "cultural lag" between their rapid commercial introduction and the slower evolution of regulations. An outcome of this cultural lag is a tension between the potential of artificial companions to support users and a series of unresolved ethical issues related to the fact that users might lack the capacity to fully understand the implications of using these technologies. Specific challenges of deception, surveillance, consent and social isolation are raised by the introduction of these technologies in users with cognitive impairment. The case study of a sophisticated artificial companion commercially available in the United States lends the opportunity to examine the tension between the potential of this technologies vs. unresolved ethical issues. This companion is an

avatar on an electronic tablet that is displayed as a dog or a cat. Whereas artificial intelligence guides most artificial companions, this application is a hybrid of robots and human beings because it also relies on technicians "behind" the on-screen avatar, who via surveillance, interact with users. We conclude with a call to develop regulations promoting artificial companions as "human-driven technologies," i.e. technologies focused on truly empowering users according to their cognitive abilities.

LONELINESS, MARITAL STATUS, AND COGNITIVE IMPAIRMENT AMONG OLDER AMERICANS

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Loneliness has been linked to increased risk of mortality and morbidity, and emergent research has identified a negative association between loneliness and cognitive functioning. While the determinants of loneliness are wide in scope, loneliness is closely tied to marital status in later life. At the same time, research has shown that those who are married have lower risk of cognitive impairment. The aim of this study was to determine the association between loneliness and cognitive impairment, and examine whether it is moderated by marital status. Data come from 9 waves of the RAND version of the HRS (1998 - 2014). Consistent with previous research, results from random effects logit models showed that loneliness is associated with greater risk of cognitive impairment [Odds-ratio (OR) = 1.41, $p < 0.01$]. Additionally, those who are widowed (OR = 1.29, $p < 0.01$), separated/divorced (OR = 1.33, $p < 0.01$), or never married (OR = 1.70, $p < 0.01$) are also more likely to have a cognitive impairment, compared to those who are married. However, the association between loneliness and cognitive function was found to only differ among those who are widowed. Contrary to expectations, widows who report feeling lonely are 29% ($p < 0.01$) less likely to have a cognitive impairment. In sum, while loneliness and marital status are closely linked with one another, they are both independent determinants of cognitive impairment. The distinct theoretical mechanisms linking loneliness and marital status to cognitive function in later life are discussed.

PHYSICAL ACTIVITY MEDIATES THE EFFECTS OF DEPRESSIVE SYMPTOMS ON THE COGNITIVE FUNCTION OF OLDER ADULTS

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Evidence suggests that depressive symptoms among older adults were associated with cognitive impairment and affect cognitive decline over time, while physical activity was associated with lower risk of cognitive decline or have positive effect on cognitive function. The purpose of this study is to examine whether physical activity could mediate the effects of depressive symptoms on the cognitive function of older adults. Data from the 2014 Health and Retirement Survey (HRS) of older adults ≥ 60 years (N=9,753) were used. Hierarchical regression was conducted to examine the relationship between depressive symptoms, physical activity, and