

Capstone for Impact Submission | GY2019

Project Title: Association between visual impairment and psychiatric symptoms in older adults

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Branch: Patients & Populations

Path of Excellence: Global Health and Disparities

Handover/Transition:

If this project can be continued by another UMMS student, you may contact them at the following email address/phone number (N/A if project cannot be handed over): **N/A**

Summary:

Vision impairment (VI) and psychiatric disease are two important drivers of the global burden of chronic disease in the elderly. Although these conditions are often treatable, they may also result in disability and decreased quality-of-life. Prior studies have attempted to draw a relationship between VI and mental health, and there is evidence that the prevalence of depression is higher in those who are visually impaired, though most of these studies were cross-sectional, focused on a narrow population, or were from outside of the U.S.

A single study from France provided evidence for a bidirectional relationship between VI and depression. Fewer studies have examined the relationship between vision loss and anxiety, with mixed results, and none has looked at this relationship longitudinally in a nationally-representative sample of older Americans. The objective of this study was to evaluate the longitudinal association and the directionality of the relationship between self-reported VI and clinically-significant symptoms of depression and anxiety in older Americans.

We hypothesized that older adults with self-reported VI were more likely to develop clinically-significant symptoms of depression and anxiety and we also tested the reverse pathway leading from mental health symptoms to VI. A more complete understanding of the longitudinal relationships between vision and mental health among older adults in the U.S. is important, as both conditions are projected to impact a growing number of individuals.

These data may help to shape public health approaches and the design of tailored interventions, such as innovative models of geriatrics care, to address co-occurring mental health and vision disorders in older Americans.

Methodology:

Design: Nationally-representative cohort study.

Setting: The National Health and Aging Trends Study (NHATS), a nationally-representative US survey administered annually from 2011-2016 to a cohort of Medicare beneficiaries age 65 and older.

Participants: NHATS participants with complete data on self-reported VI status at baseline (n=7,584).

Main Outcomes and Measures: Multivariable Cox regression models were used to evaluate the longitudinal relationships of self-reported VI with depression and anxiety symptoms, adjusting for sociodemographics and medical comorbidities and accounting for the complex survey design.

Results/Conclusion:

At baseline, 8.9% (95% CI 8.1-9.8%) of study respondents self-reported VI. Symptoms of depression were significantly more common in participants with VI than those without VI (31.2% vs. 12.9%, $p < .001$), as were symptoms of anxiety (27.2% vs. 11.1%, $p < .001$). Baseline self-reported vision status was significantly associated with future report of depression (HR=1.33, 95%CI 1.15-1.55) but not anxiety (HR=1.06, 95%CI 0.85-1.31) symptoms. Baseline depression (HR=1.37, 95%CI 1.08-1.75) and anxiety (HR=1.55, 95%CI 1.19-2.02) symptoms were both significantly associated with future report of VI. In a sensitivity analysis excluding data provided by proxy respondents, statistical significance was unchanged and the effect size was similar for all statistical models.

Reflection/Lessons Learned:

There is a longitudinal and bidirectional relationship between VI and mental health symptoms in older Americans. It is still not fully clear why individuals with VI are more likely to have symptoms of mental illness, or why psychiatric symptoms carry an increased risk of VI. Eye care providers should be aware of the associations between vision and mental health, and provide referrals to address the mental health needs of their patients when appropriate.