8-8-2025

The Link Between Disability and Suicide Ideation in Men Over 60

Cassandra Lawrence
Walden University

Walden University

College of Health Sciences & Public Policy

This is to certify that the doctoral study by

Cassandra Lawrence

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee
Dr. Peter Anderson, Committee Chairperson, Public Health Faculty
Dr. Olivia Osaji, Committee Member, Public Health Faculty

Chief Academic Officer and Provost
Sue Subocz, Ph.D.

Walden University
2025

Abstract

The Link Between Disability and Suicide Ideation in Men Over 60

by

Cassandra Lawrence

MPH, University of Pittsburgh, 2001

BSN, Carlow College, 1988

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Public Health

Walden University

August 2025

Abstract

The Centers for Disease Control and Prevention considers suicide and suicide ideation as a severe public health issue among older men and people with disabilities. The purpose of this study was to determine if there is a predictive relationship between the level of disability, type of disability (i.e., physical, visual, hearing), functional disability, (i.e., mobility, activities of daily living (ADLs), instrumental activities of daily living (iADLs), and having multiple disabilities on suicide ideation among men with a disability who are aged 60 years and older while controlling for age, depression, marital status and retirement status. The interpersonal-psychological theory of suicidal behavior provided the theoretical framework of this study because the interactions of loneliness and burdensomeness are considered a pathway to suicide ideation. Data from N=2250 respondents ages 60 years and older who completed the 2017-2018 National Health and Nutrition Examination Survey were analyzed as part of the quantitative cross-sectional research design. Multivariate logistic regression was used to analyze the data, and the results showed that vision disability and functional disability in self-care ADL's predicted suicide ideation. Higher levels of depressive symptoms and being in the age 71-80 age group (compared to those aged 60-70) were significantly associated with increased suicide ideation. Findings from the study may demonstrate the importance of the type of disability, depression, and age in studying the risk for suicide ideation in retired men. The study may promote positive social change through suicide prevention in vulnerable individuals who are undergoing life transitions (i.e., retirement) improving the lives of individuals, families, and communities.

The Link Between Disability and Suicide Ideation in Men Over 60

by

Cassandra Lawrence

MPH, University of Pittsburgh, 2001

BSN, Carlow College, 1988

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Public Health

Walden University

August 8, 2025

Dedication

For the many men who have struggled in silence, who carried burdens unseen—your pain was real, and your life mattered. To those navigating both mental health challenges and disabilities, may we work toward understanding, breaking stigma, and fostering spaces where every man feels heard, valued, and supported. Your struggles deserve recognition, and your resilience deserves respect.

Acknowledgments

Completing this dissertation has been a journey shaped by the guidance, support, and unwavering belief of those around me. To my dissertation committee, I extend my gratitude as you helped guide me through this challenging journey. To my husband, Scott, words cannot fully capture my appreciation for your patience, love, and steadfast support throughout this process. Through late nights, moments of doubt, and endless revisions, you have been my anchor, offering encouragement when I needed it most. Your belief in me has been a source of strength, and for that, I am forever grateful. Finally, to all who have inspired and supported me in various ways—thank you. This work is a reflection not only of my efforts but of the collective influence, wisdom, and generosity of those who have stood beside me.

Table of Contents

List of Tables

List of Figures

Section 1: Foundation of the Study and Literature Review

Suicide ranks among the top nine leading causes of death in the United States (Centers for Disease Control and Prevention [CDC], n.d.-c.). Middle-aged and older adults are at higher risk for suicide, with older White males having the highest rate of suicide among all age and gender groups (El Ibrahimi et al., 2021). These rates are likely to increase as the age of the population increases proportionately. According to the CDC (n.d.-c), roughly 12.3 million people in the United States have considered suicide. Older adults entering retirement face challenges such as loss of employment resources and support, financial security, and having to cope with outside stress and engagement in social activities (Dang et al., 2022). Retirement is a significant life transition, and because of the removal of coping behaviors from work, social engagement, and identity, there may be a poor adjustment to retirement (Dang et al., 2022).

The CDC (n.d.-b) recognizes suicide and suicide behavior (e.g., suicide attempt or preparatory behaviors to complete suicide) as a severe public health problem. According to the CDC, deaths by suicide increased by 8.1% in men aged 65 years and older and 6.6% in men aged 45-65 increased from 2021 to 2022. Suicide behavior is influenced by social determinants such as health and relationship factors, of which feeling a lack of connectedness to others is cited (CDC, n.d.-b). Further, a recent study demonstrated that adults with disabilities (e.g., physical or mental conditions, and difficulty with self-care) were three times more likely to report suicide ideation compared to people without disabilities (CDC, n.d.-c.). However, the CDC (n.d.-c) reported limited data on suicide among people with disabilities. Consequently, the current study focuses on the increasing rates of suicide in men ages 60 years and older who may have increased risk of suicide ideation if retired and have a disability. In this study, I tested the level of disability reported among retired men, 60 years and older, as a predictor of suicide ideation. Findings from the study demonstrated the importance of the type and level of disability in studying the risk for suicide ideation in retired men and may promote positive social change through suicide prevention in vulnerable individuals who are undergoing life transitions (i.e., retirement).

This section is an introduction to the study and begins with a succinct description of the problem's background. The following description of the background is the statement of the problem and the purpose of the study. Next, the research questions and hypothesis statements are introduced. In addition, a description of the theoretical framework constructs that will be used to interpret the research questions will be explained. The nature of the study, definition of terms used, assumptions, scope/delimitations and limitations of this study are described. This section ends with the significance of this study and potential for positive social change. For this study, the interpersonal theory of suicide was applicable to examine the relationship among the variables (Joiner & Silva, 2012). This theory proposes suicide ideation as an interaction between low belongingness and high burdensomeness. The target population is retired men 60 years and older who may feel isolated as they experience a change in their social relationships, productiveness, and declining physical abilities.

Background

In the United States, men have a higher rate of dying by suicide than women. In

2022, the number of men dying by suicide increased to 3.8% (39,255) from 2.3% (38,358) in 2021 (CDC, n.d.-b). Further, the suicide rate among males in 2021 was four times higher compared to females. A reason for the increase of suicide rates can be attributed to the ever-changing landscape of the workforce that lead to labor force withdrawal and disruptions in masculinity (Pietila et al, 2020). In the United States, the expected retirement age is 66 years old, with 59% of retiree's income described as coming from social security (Silvestrini, 2023). According to the Center on Budget and Policy Priorities (2023), 37% of male retirees rely on social security for over half of their income. Therefore, this population is having to adjust to living on limited incomes. This may create financial stress due to the risk of unexpected costs such as medical bills (Silvestrini, 2023). Also, men aged 65-74 with heightened levels of disability were found to demonstrate a higher likelihood of suicide attempts (Beghi et al., 2021).

Further, individuals who retire may experience change and loss in areas such as relationships, functional status, and interaction in social situations. Such changes are associated with feelings of loneliness (Garriga et al., 2021). Loneliness has a strong association with depression, impacting social and emotional health. Social and emotional problems may further affect physical health, leading to functional declines (Garriga et al., 2021). Individual, relationship, and societal circumstances increase the risk of suicide, such as depression, loss of income, identity, connection, social isolation, and stigma associated with seeking help (Ding & Kennedy, 2021).

Further adding to the risk of suicide is that older men do not recognize symptoms of depression and are less likely to seek treatment for depression (Ding & Kennedy, 2021). The social, emotional, and physical problems experienced by older men suggests that these individuals may have increased feelings of lacking belongingness and burdensomeness, further isolating themselves. The combination of disease and disability, specifically functional decline, is associated with an increased risk of dying by suicide (Ding & Kennedy, 2021). Perceptions of burdensomeness or social disconnection are the core phenomena of a pathway for suicide ideation (Joiner & Silva, 2012).

Although researchers have investigated this issue, there is very little or no literature on suicide ideation in retired men with different levels of sensory and physical disabilities. Therefore, the aim of this study was to examine whether there is a relationship between the disability type, level of disability, and having more than one disability among retired men aged 60 years and older and suicide ideation. Reasons for living are aspects of human nature, including perceptions of contribution and connection rather than burden and isolation (Joiner & Silva, 2012). Many factors can increase the risk of suicide or protect against it. Being connected to family and having community support as well as access to healthcare can decrease suicidal thoughts and behaviors (CDC, n.d.-b.). Social relationships may be a critical factor in preventing the decline of activities of daily living (Watanabe et al., 2020). This study is critical because it could help to provide a basis for future research by testing this relationship to gain knowledge about the role of the level of disability in suicide ideation among men who are retired. Findings may encourage better development and program implementation for suicide prevention in this population.

Problem Statement.

There is a high rate of suicide in men aged 65 and older. Globally, there are 27.8 cases of men aged 65-74 years dying by suicide per 100,000 compared to 6.2 cases per 100,000 women of the same age (El Ibrahimi et al., 2021). In the United States it is predominately men who die from suicide in late adulthood, with worldwide rates (per 100,00) estimated at 28.2 for men aged 60 to 69 compared to a rate of12.4 for females (Canetto, 2017). With advancing years and inevitable changes, such as retirement and impairments, older people may feel lonely as productive work and relationships with family and friends diminish (Canetto, 2017). Risk factors for suicide occur when new stressors like changes in social relationships, retirement, and functional status decline, threaten independence (Eades et al., 2019). Among individuals with a history of suicide ideation, those with a physical disability are three times more likely to have had a prior suicide attempt (Kazem et al., 2021). Further, those with a functional disability (mobility, self-care, and independent living) due to a physical disability had a four to eight times higher likelihood of a suicide attempt in the past year (Kazem et al., 2021). The lack of social connection from the absence of working relationships and the severity of disability can create situations where coping is challenging (Heisel et al., 2020). Additionally, feelings of loss from social relations due to retirement and in people with disabilities are a risk for suicide (Heisel & Flett, 2022).

The meaning of life can be a resource for coping with retirement transitions and stressful situations, especially among individuals with disabilities who perceive themselves as a burden. Such meaning may provide these individuals with feelings of connection and belonging, which in turn may reduce suicide ideation (Heisel et al., 2020). According to the review of extant literature, there is substantial research on suicide risk in the elderly population and suicide risk in individuals with disability. However, there are limited studies concerning the relationship between retired men with a disability and suicide ideation. Findings from this research may focus attention and prevention efforts to accommodate the needs of persons with disabilities after retirement. The findings may further highlight the importance of including suicide risk assessment of perceived burdensomeness when people retire with a disability.

Purpose of the Study

The purpose of this quantitative study was to examine the relationships between the levels of disability and suicide ideation among retired men aged 60 years and older. The independent variables are the type of disability (i.e., physical, visual, hearing), functional disability, (i.e., mobility, ADLs, iADLs), level of disability and having multiple disabilities, and the dependent variable is suicide ideation. The control variables were age, depression, and marital status. Previous research is limited in focus on suicide ideation in the presence of late-life social disconnectedness related to retirement and disability. Research examining suicide ideation within and across disability subgroups is necessary to reduce suicide risk among persons with disability (Khazem et al., 2023b). The findings from this study may support evidence-based preventive interventions that help address suicide risk in older men who are preparing for retirement in the presence of disability.

Research Questions and Hypotheses

The following research questions and their hypotheses were used to guide the quantitative study to determine the association between the type and level of disability and suicide ideation among retired men 60 years and older while controlling for age, depression, marital status, and retirement status.

RQ 1: Is there a relationship between type of disability and suicide ideation among retired men, 60 years and older, after controlling for age, depression, marital status, and retirement status?

$H_0$1: There is no significant relationship between type of disability and suicide ideation among retired men, 60 years and older, after controlling for age, depression, marital status, and retirement status.

H_a1: There is a significant relationship between type of a disability and suicide ideation among retired men, 60 years and older, after controlling for age, depression, marital status, and retirement status.

The independent variables for the type of disability are sensory disability, physical disability, and mobility disability. The dependent variable is suicide ideation. The statistical analysis will include multivariate linear regression analysis. Age, depression, marital status, and retirement status were controlled as covariates.

RQ 2: Is there a relationship between the level of physical functional disability and suicide ideation among retired men, 60 years and older, after controlling for age, depression, marital status and retirement status?

$H_0$2: There is no significant relationship between the level of physical functional disability and suicide ideation among retired men, 60 years and older, after controlling for age, depression, marital status, and retirement status.

H_a2: There is a significant relationship between the level of physical functional disability and suicide ideation among retired men, 60 years and older, after controlling for age, depression, marital status, and retirement status.

The independent variables are levels of disability, those with higher scores or no difficulty and those with lower scores had much and some difficulty, and the dependent variable is suicide ideation. The statistical analysis included multivariate logistic regression analysis. Age, depression, marital status, and retirement status were controlled as covariates.

RQ 3: Is there a relationship between the number of disabilities the individual has and suicide ideation among retired men, 60 years and older, after controlling for age, depression, marital status, and retirement status?

H_03: There is no relationship between the number of disabilities and suicide ideation among retired men, 60 years and older, after controlling for age, depression, marital status, and retirement status.

H_a3: There is a significant relationship between the number of disabilities and suicide ideation among retired men, 60 years and older, after controlling for age, depression, marital status, and retirement status.

The independent variables are physical disability (have serious difficulty walking), sensory disability (have serious difficulty seeing or have serious difficulty hearing), and activities of daily living (have difficulty dressing or bathing or doing errands alone). The dependent variable is suicide ideation which is determined by the response to the survey question (over the last 2 weeks, how often have been bothered by thoughts that you would be better off dead or of hurting yourself in some way?). The statistical analysis included multivariate logistic regression analysis. Age, depression, and marital status were controlled as covariates.

Theoretical Framework

The theory that grounds this study is the interpersonal-psychological theory of suicidal behavior (ITPS) by T. Joiner. The theory posits three constructs: thwarted belongingness, burdensomeness, and fearlessness about physical pain (Joiner & Silva, 2009). Regarding suicide attempts or dying by suicide, there is a three-way relationship between the three constructs of low belonging, high burdensomeness, and high fearlessness about the physical threat or acquired capability (Eades et al., 2019; Joiner & Silva, 2009). The third construct contradicts an inherent survival need (Eades et al., 2019). When individuals experience extreme social disconnection or isolation and perceive themselves as a burden to others, their desire for death is greater (Eades et al., 2019; Joiner & Silva, 2009).

For this study I tested suicide ideation using the two-way interaction of two constructs—thwarted belongingness and burdensomeness. The fundamental constituents of suicide ideation are the perceptions of alienation from others and, simultaneously, the sense of being a burden on others (Joiner & Silva, 2009). The perceptions of alienation are the constructs of thwarted belongingness and perceived burdensomeness and are characteristics of suicide ideation (Joiner & Silva, 2009). Joiner and Silva (2009) hypothesized a two-way interaction between low belonging and high burdensomeness and suicide ideation. Feelings of thwarted belongingness stem from a desire to belong and comprise the subjective experiences of loneliness and the absence of caring for others and feeling cared for (Eades et al., 2019; Joiner & Silva, 2009). The perceived burdensomeness reflects an individual's sense of liability and self-hatred (Eades et al., 2019; Joiner & Silva, 2009).

The rationale for choosing the ITPS theory is that the foundational constructs apply to the need to test the relationship between the level of disability and suicide ideation in late life. The central constructs of thwarted belongingness and perceived burdensomeness lend themselves well to studying suicide risk in older adult populations (Eades et al., 2019). Low belonging and perceived burdensomeness are theorized to explain suicide ideation (Joiner and Silva, 2009). Little is known about the developmental changes in thwarted belongingness and perceived burdensomeness across late-life adulthood (Eades et al., 2019). Many older adults may become vulnerable to loneliness and low belongingness as they face the death of friends and spouses, reduced mobility, and sensory decline. At the same time, they become more reliant on others to meet their activities of daily living and help with shopping and transportation, among others, due to physical or cognitive declines where they perceive themselves as a burden (Eades et al., 2019).

For this study, the ITPS is applicable to examine the relationship among the variables. The construct of perceived burdensomeness was used to test the relationship that disability type and level of disability have on suicide ideation, as an individual having a functional disability may perceive themselves to be a burden to others. In a meta-analysis of this theory's use, researchers have concluded that perceived burdensomeness is strongly associated with suicide ideation (Chu et al., 2017). The target population of retired men 60 years and older may feel isolated as they experience a change in their social relationships, feel less productive, and experience a decline in their physical abilities. Reasons for living are aspects of human nature, including perceptions of contributing and connection rather than burdening and isolation (Joiner & Silva, 2012). The ITPS constructs thwarted belongingness, perceived burdensomeness, and social isolation impact individuals' ability to cope, and suicide can be seen as the only option to end the feelings (Joiner & Silva, 2012). The framework supports the study in that it was used to quantifiably describe the strength of the relationships between retired men with a disability and suicide ideation.

The logical connections between the ITPS framework presented and the nature of the study includes two constructs proposed by Thomas Joiner (Joiner & Silva, 2012). The second and third constructs (thwarted belongingness and perceived burdensomeness), or interpersonal constructs, state that the person does not have a sense of belonging and perceives oneself as a burden has a desire for suicide (Joiner &Silva, 2012). Individuals with disabilities have a heightened perception of burdensomeness (Khazem et al., 2021). An individual feels social isolation and cannot cope, where suicide is the only option to end the feelings (Joiner & Silva, 2012). Joiner and Silva (2012) described suicide ideation as an interaction between low belongingness and high burdensomeness. The stigma associated with disability and social stressors are interpersonal and associated with low self-esteem (Khazem et al., 2021). Perceptions of burdensomeness or social disconnection are the core phenomena of a pathway for suicide ideation (Joiner & Silva, 2012). A reason for living, an aspect of human nature, including perceptions of contributing and connection rather than burdening and isolation (Joiner & Silva,2012), is that retired men find their identity through work. For these men, retirement leads to a loss of purpose (Heisel et al., 2020; Joiner & Silva, 2012). Because of retirement, a person with a disability who loses social connection may feel they no longer have a purpose and perceive themselves as a burden to themselves or others, explaining suicide ideation or suicide behaviors (Joiner & Silva, 2012). Retirement may impact an individual's ability to be socially connected. Retired men with a disability may experience thwarted belongingness combined with increasing feelings of burdensomeness (Joiner & Silva, 2012). People with physical disabilities and sensory loss, among others, needing assistance with activities of daily living may find a self-perceived level of burdensomeness.

Figure 1 illustrates the core assumptions of the Interpersonal-Psychological Theory of Suicidal Behavior (IPTS), developed by Thomas Joiner. It visually represents three key factors that contribute to lethal or near-lethal suicide attempts:

1. Thwarted belongingness: This refers to a persistent sense of social disconnection, where an individual feels isolated or lacking meaningful relationships. The text within this section states, "I am alone."
2. Perceived burdensomeness: This involves the belief that one is a burden to others, feeling as though their existence negatively impacts those around them. The text

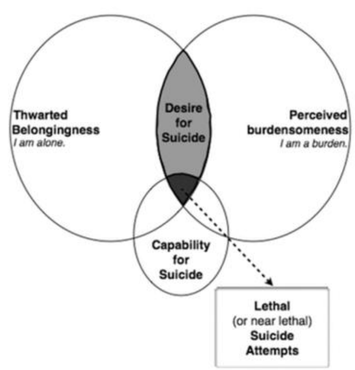
within this section states, "I am a burden."

3. Capability for Suicide: This represents an acquired ability to engage in self-harm or suicidal behavior, often through desensitization to pain or fear.

The theory posits that when thwarted belongingness and perceived burdensomeness overlap, an individual develops the desire for suicide. However, lethal or near-lethal attempts occur when this desire for suicide is combined with the capability for suicide—which is visually marked at the intersection of all three factors.

Figure 1

Assumptions of Interpersonal Psychological Theory of Suicide (2010)



Nature of the Study

To address the research questions for this quantitative study, a cross-sectional research design with secondary data (Curtis et al., 2016) was used to examine the relationships between the independent variables, (level of disability, disability type), and the dependent variable (suicide ideation) among retired men, aged 60 and older after controlling for age, depression, and marital status. Multi variate logistic regression analysis (Warner, 2021) was used to test the predictive relationships between the different levels of disability, disability type, and suicide ideation among retired men aged 60 and older. Secondary data from the 2017-2018 National Health and Nutrition Examination Survey (NHANES) questionnaire was used for this study. A quantitative cross-sectional study was implemented to analyze secondary data using the 2017-2018 NHANES.

Multivariate logistic regression analysis was used to examine the direct relationship between disability type, disability level, and suicide ideation among retired men ages 60 years and older. Previous researchers have performed multivariate regression analysis of secondary data in cross-sectional studies to determine the associations among variables in this study. For example, Milner et al. (2018) used multivariate analysis to find the relationship between self-reported disability and thoughts of suicide in men ages 18-55 using a secondary data source. Additionally, other researchers have used regression to find the association between depression, stress, and suicide among other socioeconomic and sociodemographic factors such as education, employment, and living conditions, respectively (Bickford et al., 2020; Choi & Lee, 2022; Watanabe et al., 2020).

Literature Search Strategy

A literature search was conducted using the Walden Library and the following databases: ProQuest Central, Medline, and Google Scholar. The searches included but were not limited to the keywords *suicide, suicide ideation, retirement, older adults, men, risk factors, depression,* and *disability*. The libraries and databases searched included peer-reviewed scholarly articles within the previous five years and books from Walden Library, ProQuest Central, Medline, and Google Scholar. In addition, Google searches for online databases like the Centers for Disease Control for statistics and the National Health and Nutrition Examination Study for the secondary dataset used for the study. The literature reviewed included books older than five years to support the problem's theoretical framework, definitions, and history of the problem

Literature Review Related to Key Variables and/or Concepts

The selected articles reviewed are related to retirement in older men and suicide ideation and disability and how it relates to suicide ideation. The keywords used in the reviews include current research on the topics of retirement, depression, and people with disabilities and suicide ideation. This section will describe the author’s findings and conclusions about the suicide ideation in the study’s variables and covariates.

Retirement and Suicide Ideation

Social connection and having purpose are important among older adult male retirees. According to Mezuk et al. (2022), employment is embedded in social relationships with employers, colleagues, and the community. The loss of these embedded relationships can lead to depression and suicide ideation (Mezuk et al., 2022). Additionally, retirement brings uncertainty and hopelessness, negatively correlating with social engagement (Mezuk et al., 2022). Retirees can experience suicidal ideation because of the loss of social contacts and burdensome healthcare needs, compounding physical and mental health (Ju et al., 2017). Heisel et al. (2020) also described retirement as an anticipated life transition, but changes in daily routine, purpose, and loss of identity adversely affect men. Retirement is a significant life event where people adapt and cope differently depending on whether retirement was planned and voluntary, if there is access to resources such as financial, health insurance, and social networks, and if the retiree is living alone or has a partner (Dang et al., 2022). How people adapt and cope with life changes in retirement serves as risk factors for mental health and is critical to address because of their implications for retirement-related depression. While depression is common in older adults, it is not a typical element considered when an individual is transitioning to retirement. Retirement at an early age and how long an individual has been retired may contribute to not feeling alone or isolated (Yemiscigil et al., 2021).

The challenges associated with being unprepared for retirement are preventable through successful workplace interventions where employers have adequate resources to provide retirement preparation (Dang et al., 2022). Retirement planning initiatives are important as a public health issue (Ju et al., 2017). targeting initiatives for people transitioning from employment to retirement, either voluntary or involuntary, due to disability is further necessary to prevent suicide (Page et al., 2020). Heisel et al. (2020) also showed significant improvement in attitudinal scores assessing satisfaction with retirement, hopelessness, loneliness, and suicide ideation in men who participated in a meaning-centered men’s group to help with retirement transitioning. Furthermore, their findings suggest that psychological resiliency interventions such as participating in the men’s group in older adults who are retiring and experiencing other life transitions will prevent suicide ideation by providing social connection, thereby decreasing loneliness, and enhancing feelings of belongingness. Creating programs that provide the retiree with a sense of purpose and belonging can minimize the feelings of isolation and loneliness, thereby preventing suicide ideation.

Marital Status and Suicide Ideation

Marriage can be a long-lasting relationship; having a spouse provides attachment and social support. Furthermore, marital bonds reduce the risk of physical and psychiatric disorders (Naess et al., 2021). A predictor of suicide ideation is living alone. People who live alone feel more isolated and lonelier (Luo et al., 2022). Therefore, people who have never been married, were divorced, or widowed are at an increased risk of suicide compared to those who were married (Naess et al., 2021). In a study of 191 suicide notes of older adults in Uruguay, 48 (25%) notes expressed feelings of hopelessness, a lack of purpose in life, and feelings of inadequacy (Hein et al., 2023). The second highest reason for suicide expressed illness and physical impairment (38 or 20%; Hein et al., 2023). Additionally, 129 (78%) of the suicide notes analyzed in the sample of suicides were male, and the highest portion of individuals who died by suicides in the sample were individuals ages 65-69 (45 or 27%; Hein et al., 2023). Another finding from the demographic profiling of the people who left suicide notes was that 71 (43 %) were single, 46 (29%) were divorced, and 20 (12%) were widowed (Hein et al., 2023). Therefore, such findings suggest that stress, isolation, and loneliness from bereavement and divorce increases the risk of suicide (Omary, 2020). However, Naess et al (2021) noted that suicide risk is more pronounced for widowed men than for divorced men. Kposowa et al. (2020) suggested further exploration of the extent to which suicide and marital status differ by sex. Widowed men were five times more likely to die by suicide than women because they were not able to maintain their existing social nexus and develop new social interactions (Kposowa et al., 2020). In addition, men who were separated were more likely to die by suicide (Kposowa et al., 2020). Separation is understood to be an enduring formality of divorce, intensifying feelings of failure (Kposowa et al., 2020).

Studies have also shown that there is an increased risk of suicide in people who are not married or in a relationship. Therefore, being in a relationship with a spouse is an important protective factor against suicide because spouses are more aware of their partner's needs and preferences (Luo et al., 2022; Naess et al., 2021). People with medical diagnoses may adhere to therapies and treatment because of the support of their spouse (Luo et al., 2022). Luo et al. (2022) found that companionship and spousal encouragement reduce thoughts of suicide. Further findings demonstrate that marital status predicts suicide ideation and suicide attempts and is an essential protective factor in adults with and without depression (Omary, 2020). In addition, rates of suicide ideation are higher in people with disabilities who are not married (Knapp, 2020) Furthermore, marital status is an important covariate to consider in this study because of the relationship with suicidal ideation.

Disability and Suicide Ideation

Disability in later life is a public health concern. According to Statista (2023), in 2021, it was estimated from 2008 -2021 that 13.5% of the US population had a form of disability, such as vision, hearing, or cognitive disabilities. Additionally, 23.9% of people in the US aged 65-74 years have a disability (Statista, 2024). According to the CDC (2023), there are 12.1 % of people in the US with mobility issues defined as serious difficulty walking or climbing stairs; 7.2% with independent living disability (difficulty doing errands alone); 6.1% with serious difficulty hearing or deafness; 4.8% with blindness or severe difficulty seeing and 3.6% who have self-care disability (difficulty dressing or bathing). Studies suggest that people with disability have a higher prevalence of suicide ideation compared to people without disability (Milner et al., 2020).

A study by Milner et al. (2020) suggests that the social exclusion of people with disabilities explains the likelihood of suicide ideation. Additionally, people with disability may be exposed to more suicide risk factors, making them at higher risk for thoughts of suicide. The study conducted the association between disability and thoughts of suicide using secondary data from Waves one and two of the Ten to Men survey of Australian men (Pirkis et al., 2017). Baseline and follow-up surveys (Ten to Men) of boys and men aged 10 -55 indicated that society perceives men with a disability as weak, dependent, and childlike. People with disabilities experience discrimination, leading to social exclusion, further isolation, and loneliness that harms mental health and produces a higher likelihood of suicidal thoughts. The researchers adjusted age, education, employment status, relationship status, and household income, which could be considered causes of disability and suicide ideation. Findings show men with a disability had greater odds of reporting suicide ideation compared to men without a disability.

Findings have further demonstrated that unemployed men had increased odds of reporting suicide ideation (Milner et al., 2020). A limitation reported by the researchers is that their study is not generalizable because the sample of men does not match the age in the Ten to Men sample which may be older (Milner et al., 2020). The sample of men in my study is ages 60 years and older, which is older than the cohort in the Ten to Men study. Additionally, the researchers acknowledged broadening the disability measurement response cutoff to include “some difficulty,” expanding what the Washington Group recommended disability measurement cutoff of “cannot do it at all” and “ a lot of difficulty” whereby results of the prevalence of disability increased to 50%. The finding is critical to my study as it guides the decision to include those responses to represent having a disability in the 2017-2018 NHANES data set. Milner et al. (2020) suggested that most studies narrowly focus on physical disability, and there is a need to learn about disability holistically. Consequently, I will test the association of physical and functional levels of disability and suicide ideation while controlling for age, depression, and marital status.

Bickford et al. (2021) found that functional and independent living disability measures such as walking around, self-care, getting along with others, difficulties remembering, problem solving and communicating with others because of physical health limitations in participants diagnosed with significant depression late in life were associated with suicide ideation. People with disabilities experience increased rates of depression compared to people without disabilities, therefore increasing the risk of suicide. An interesting finding in the study was the increased suicide ideation in a measure of disability impairment, which the researchers defined as financial capacity, indicating that financial impairment is critical to independent activities of daily living. The researchers suggest further investigation of vulnerable older adults and the risk of financial impairment for suicide ideation. This call out for further study reinforces independent living as a measure of the level of disability and suicide ideation.

In a study conducted by Khazem et al. (2023-a), participants with different types of disabilities completed phone interviews of participants and self-reported suicide ideation. The researchers categorized the disability types as vision or mobility-related. Khazem et al. (2023-a) expressed that people with disabilities may have greater feelings of stigma and disability-related discrimination fears. Both stigma and fears are related to increased perceptions of burdensomeness and increased distress, which increase the risk of suicide ideation. Khazem et al (2023-a). found suicide ideation risk increases in people who have mobility disabilities and are more likely to engage in suicide planning. Additionally, people with vision disabilities were at a greater risk for suicide ideation compared to those without disabilities. Another finding suggests disability related body esteem interacts with disability type, influencing the relationship between perceived burdensomeness and suicide ideation. The researchers concluded that people with disabilities feel stigma and a heightened feeling of burdensomeness, further impacting the likelihood of risk of suicide ideation. Cosh et al. (2019) identified hearing impairment as a significant predictor of suicide ideation in older adults. Cosh et al. (2019) used data from the Three-City cohort study that analyzed the impact of sensory impairments on mental health. Key findings showed mild hearing loss was associated with an increased risk of suicide ideation and severe hearing loss showed an even stronger association at baseline and over a five year period risk of suicide (Cosh et al., 2019). Vision loss contributed to increased suicide risk reinforcing the broader impact of sensory impairments on mental health (Cosh et al., 2019). These findings highlight how sensory impairments contribute to social isolation, communication barriers, and perceived burdensomeness. Finally, the researcher's emphasized the need to further examine the relationships between disability subgroups and suicide ideation.

Marlow et al. (2021) found that suicide-related outcomes varied based on the functional disability type. People with complex limitations in activity showed an association with suicide planning. Furthermore, the more limitations a person has, the greater the risk of suicide compared to people without disabilities (Marlow et al., 2021). Another finding is the researchers adjusted for depression in their analysis because evidence of increased risk for suicide among people with functional disabilities suggested depression was not associated with suicide ideation with functional disability. Furthermore, Marlow et al. (2021) discussed previous studies' results using the ITP framework that persons with disabilities experienced increased levels of perceived burdensomeness and thwarted belongingness compared to people without disabilities.

Suicide Ideation

The dependent variable in this study is suicide ideation. Suicide ideation is having specific thoughts related to killing oneself. Suicide ideation, as defined by Wenzel et al. (2009), is any "thought, image, voice or other cognition reported by the individual about intentionally ending his or her own life." Suicide ideation in the United States varies across age, gender, and socioeconomic status. Throughout their lifetime, approximately 15% of Americans have suicide ideation, with 2.5% of those who thought about suicide in the last year being 50 years or older (Knapp, 2020). Suicide ideation in the older population is a public health concern, with an increased risk of suicide attempts and dying by suicide.

Furthermore, people have highly suicidal thoughts when dealing with circumstances of perceived burdensomeness and loneliness (Van Orden et al., 2010). Nguyen et al. (2021) suggested that a high degree of belongingness, accessibility to help-related information, and healthy perceived cultural responses toward mental health are three conditions that prevent suicidal thoughts (Nguyen et al., 2021). Suicide ideation in later life may increase the risk of suicide attempts (Knapp, 2020). However, studies have focused on suicide behavior risk factors and not on the development of suicidal thoughts (Nguyen et al., 2021). Thinking of suicide is the first step leading toward a suicide attempt, where someone engages in self-inflicted behavior with the intent to die because of that behavior and is thus strongly associated with the increased risk of mortality and death by suicide (Sher & Oquendo, 2023).

According to Sagar-Ouriaghli et al. (2019), suicide risk is disproportionately higher in men compared to women because they are less likely to seek help. Moreover, men have negative attitudes toward the use of mental health services compared to women. Men are less likely to seek help than women because of traditional masculine norms such as stoicism, self-reliance, and invulnerability, discouraging men from help-seeking behavior. Therefore, men experiencing suicide ideation are less likely to use mental health services because of the stigma associated with seeking help. Because of masculine stereotypes, clinicians may have a bias because traits such as self-reliance can mask suicide risk. Sagar-Ouriaghli et al. (2019) researched interventions designed to contribute to help-seeking behaviors and attitudes. The interventions to engage delivery of help-seeking behavior via a brochure and a video documentary using role models showed a significant improvement in help-seeking. The findings suggest men may not need face-to-face engagement and may be less receptive to more personal engagement. However, it is acknowledged that these processes may not be effective for everyone to improve help-seeking in men, though providing skills and endorsing approaches that are solution-focused may also be effective. Sagar-Ouriaghli et al. (2019) concluded that interventions which deliver information in a supportive manner that helps them accept their challenges and minimize feelings of shame can improve help-seeking behavior in men.

Being strong, independent, invincible, self-reliant, and possessing self-control are traditional masculine norms (Griffin et al., 2022). Griffin et al. indicated that men are less likely to report suicide ideation to uphold masculine norms. Griffin et al. conducted a study to examine if psychological distress in men strengthens vital adherence to masculine norms of self-reliance and self-control and risk of suicide ideation. Findings suggest that self-reliance shapes the link between psychological distress and suicidal ideation in men, indicating that adhering to self-reliance norms amplifies the effects on suicidal thoughts. Additionally, findings showed that self-control did not moderate the relationship between distress and suicide ideation in men, indicating that self-control is not a barrier to help-seeking behavior in men. The authors acknowledged the researchers may not capture all levels of psychological stressors and suggested future research should include men with confirmed suicide ideation. This research finding reinforces the ITP theoretical construct of perceived burdensomeness and how it applies to men and suicide ideation.

Another study conducted by Walther et al. (2022) surveyed 490 men during the COVID 19 pandemic who experienced job loss leading to loss of social status and reported suicide ideation and attempts. Men (n=72) who reported experiencing loss of social status due to the pandemic were four times more likely to have attempted suicide in the past month and twice as likely to report suicide ideation in the past two weeks compared to those who did not lose social status. Additionally, the findings concluded that those who experience status loss during the pandemic while also holding close to traditional masculinity norms have an increased risk of suicide. The findings illustrate the importance of targeting interventions tailored to men who uphold solid masculine norms in the face of loss of status during life transitions.

These findings bring to light the stressors experienced by older adult men who leave the workforce voluntarily or involuntarily and the importance of social connections and support as transition from employment to retirement to prevent suicide ideation.

A study by Omary (2021) explored if marital status, sex, race, education, and age with or without major depression significantly predicted suicide ideation. Omary's study showed that suicide ideation risk was significantly increased in adults who do not have a college degree, with or without depression and who are divorced or separated. Additional findings showed that adults of all ages without depression who were never married, and divorced or separated, with some education were at high risk for suicide ideation. Furthermore, the study adjusted for confounders and results indicated that White males were at higher risk for suicide ideation than Hispanic and White females. Such findings suggest that attributions of gender role beliefs and masculinity may prevent help seeking behavior. The study's findings concluded the importance of examining additional confounders such as physical conditions, and employment among others. These findings reinforce the need to research the target population of men who are retired and have a disability as a physical condition to determine whether they are at risk of suicide ideation. Additionally, findings support controlling for confounders of age, depression, and marital status that will be used in my study.

According to Kim (2016) suicide risk increases in later life with depression, social isolation, physical illness, and the male gender. His study used machine learning techniques to evaluate the accuracy of the Patient Health Questionnaire-9 (PHQ-9) depression screening tool specifically the ninth single item question as an effective predictor of suicide ideation. The research findings showed that the item 9 question "How often have you been bothered by thoughts that you would be better off dead or of hurting yourself in some way?" was a more accurate predictor of suicide ideation than the positive depressive scores in items 1-8 . Furthermore, Kim's findings confirmed that the PHQ-9 including item 9 is a reliable, highly accurate tool in predicting suicide ideation and can be useful in detecting and treating high risk groups. The NHANES 2017-2018 questionnaire uses the PHQ-9 screening tool and is the data source for my study. Kim's findings support the use of the item 9 question as a predictor of suicide ideation.

The literature points to loneliness and burdensomeness as factors contributing to suicide ideation as it relates to people with disabilities and life transitions such as retirement. It is essential to underscore the criticality of upholding masculine norms when men have feelings of alienation and burden eventuating to suicide ideation. Therefore, understanding the strength of the association among the variables and the effects of the covariates is crucial to learning the impact of suicide ideation among retired men with a disability.

Definitions

The terms have been defined for the purpose of the study.

Activities of daily living (ADL): A term to describe the fundamental skills to independently care for oneself, including ambulating, feeding, dressing, personal hygiene, continence, and toileting (Edemekong, et al., 2023).

Depression: A common mood disorder causing symptoms that affect how a person feels, thinks, and handles daily activities such as sleeping, eating or working (National Institute of Mental Health, n.d.).

Disability: A condition of the body or mind (impairment) that makes it more difficult for a person with the condition to do certain activities and interact with the world around them (Centers for Disease Control and Prevention, n.d.-a).

Functional disability: The complete loss or partial loss of function of a body part (Centers for Disease Control and Prevention, n.d.-a).

Hearing disability: A condition where a person is deaf or has serious difficulty hearing (Centers for Disease Control and Prevention, n.d.-a).

Independent living disability: A condition where a person has difficulty doing errands alone such as shopping or visiting a doctor's office (Centers for Disease Control and Prevention, n.d.-a).

Instrumental activities of daily living: Activities that allow an individual to live independently in a community such as cooking, cleaning, and managing finances therefore impacting quality of life (Guo & Sapra, 2022).

Marital Status: The term encompasses people who are: married, divorced, separated, widowed, or never married (Center for Disease Control and Prevention, n.d.-d)

Older adults: Adults aged 60 years and older (Center for Disease Control and Prevention, 2022)

Physical or mobility disability: A long lasting condition that limits one or more of an individual's basic physical activities, walking climbing stairs, reaching lifting, or carrying objects (Centers for Disease Control and Prevention, n.d.-a).

Self-care disability: A condition where a person has difficulty bathing, dressing, or getting around inside the home due to physical, mental, or emotional conditions (Erikson & Lee, 2008).

Sensory disability: A condition which affects a person's senses of sight, hearing, smell, touch, and taste (Disability Support Guide, 2023).

Suicide ideation: Any thought, image, voice, or other cognition reported by the individual about intentionally ending his or her own life (Wenzel et al., 2009).

Vision disability: A condition where a person is blind or has serious difficulty seeing (Centers for Disease Control and Prevention, n.d.-a).

Assumptions

Based on the previous literature, I assume that age, depression, and marital status are strong covariates of suicide ideation. In addition, the literature supports that disability and retirement influence feelings of loneliness and belonging, which are risk factors for suicide ideation. I assume the NHANES data as a secondary data source has a representative sample of men aged 60 years and older in the United States. It is the assumption that the demographic data and the questionnaire data used for the variables in this study (i.e., disability and suicide ideation) that the interviewers use established interview guidelines without measurement errors.

Scope and Delimitations

The specific aspect of the research problem that I have addressed in this study is the examination of the relationships between disability type, disability level, having more than one disability type, and suicide ideation in retired men ages 60 years and older, while controlling for age, depression, and marital status. The study includes men aged 60 years and older with a disability who participated in the NHANES cycle 2017-2018. who reported they were retired; responded to questions regarding suicide ideation (dependent variable) and had ‘some or much difficulty’ or were ‘unable to do’ in responses to questions related to functional mobility, iADL and ADL. They also reported limitations related to physical, hearing, and vision abilities (independent variables). Data analysis will determine the strength of the relationships between the variables. Causation will not be implied. This quantitative study relies on a secondary data set from the 2017-2018 NHANES, and variables are in the publicly available dataset. The focus on this specific research problem was chosen because suicide ideation in older men, in retirement, and people with disabilities is a public health issue. This study aims to address the gap in the research and provide insight into the risk of suicide in retired men who have a disability. This study will control for age, depression, and marital status. Regarding potential generalizability, NHANES is designed to be representative of the non-institutionalized civilian US population across 50 states and is a source of population data for implementing generalizability of methods (CDC, 2017). Due to the COVID-19 pandemic, data collection for the 2019-2020 cycle was suspended in March 2020 (Akinbami et al., 2022). The National Center for Health Statistics combined the partial data from the 2019-March 2020 data with the 2017-2018 cycle for consistent survey content across two cycles to create a nationally representative 2017-March 2020 pre-pandemic data file (Akinbami et al., 2022). The publicly released data has a more extended collection period than previously released data (Akinbami et al., 2022).

Limitations

There are limitations to this study in using the secondary data set from NHANES. These limitations include the small sample size compared to other national surveys (Kindratt, 2020). Additionally, the sample excludes those living in group quarters such as nursing facilities, which may contain a disproportionate share of persons with mobility and vison problems (CDC, 2017). Another limitation of using NHANES is that the data is collected to make healthcare payments and not for research; therefore, considerations are necessary when analyzing the data (CDC, 2017). These considerations include many subsection files requiring multiple data file merges for each survey year (Kindratt, 2020). Additionally, there are complex sample design variables in the demographic variables and sample weight file, whereby a decision on which weight to use is based on this study’s aim (Kindratt, 2020). Because this study aims to use the interview data, the interview weight will be the most appropriate (Kindratt, 2020). Another limitation of the study is participant self-report. Self-reported data is subject to recall bias, especially from an older population (Nikolopoulou, 2023). The timing of the survey to an event studied can influence participants' recall in self-reporting of past events or behaviors (Nikolopoulou, 2023). Bias can occur unintentionally or intentionally due to misreporting information (Cox, 2020). Further, there are limitations associated with the variables. For instance, self-harm questions may be sensitive to the participant. Such sensitivity may impact the participant's ability to answer survey questions honestly (Cox, 2020). While the variables may have a positive or negative relationship because the NHANES data is collected using a cross-sectional design survey, causation cannot be inferred (Burkholder & Burbank). The variables used in the study are limited to the publicly available data set. Because data collection was for a different purpose and not specific to the current research study, the research questions' variables were limited to the study-defined variables. Furthermore, the secondary data set used came from prior years, and the effects of COVID-19 on social isolation could impact responses to suicide ideation survey questions. Therefore, the lack of disability variables available and access to information in more recent data sets on responses to the PHQ-9 survey questions from the impact of the COVID-19 lockdown may have implications for the current study findings

Significance

The potential contribution of the study is that its findings may help fill the current knowledge gap concerning self-care disabilities and their relationship to suicide ideation. Studies have shown that men are more likely to have suicide ideation that is unrecognized because symptoms are masked (Canetto, 2017). Further, the societal norms of masculinity and stigma prevent help-seeking behavior (Griffin et al., 2022). This study is critical because, in 2021, the suicide rates in men ages 55-64 and 64-74 were three to five times higher than rates for women (Garnett & Curtain, 2023). In addition, as of 2021, the percentage of people in the US with a disability increased with age from 10.9% (21 -64 years) to 23.9% (65 to 74 years) and from 46.1% to 53.9% (75 years and older) (Statista, 2023).

This study can help the public health community by including suicide ideation prevention interventions for retired men who cannot support their current disability needs. Preparing people for retirement to include support for potential mobility and self-care declines as they age. Additionally, creating a social, supportive program that encourages help-seeking behaviors, suicide risk assessment, and connections to the community to mitigate feelings of being alone and create a sense of belonging. Findings from the study may be used in unison with results from other studies previously conducted on disability that focus on the medical conditions of disability and the impact on self-care disability and suicide ideation. Additionally, findings may support the need to further educate employers and employees on the need to consider retirement preparation to include social and self-care supports.

Summary

The need to prepare for providing support in late life transitions in the setting of retirement and disability among men is essential to prevent suicide. Suicide among older adults is an important issue since the demographic of older adults 65 years and older will increase from 16% in 2018 to 22% of the total population in the United States by 2050

(World Health Organization, 2022). As this population increases, dependency increases, as will the demand for caretakers. In the U.S., 18.2% of the population provides 80% of care to relatives who are older and disabled (D'Amen et al., 2021). As a result, the children are providing the primary support of their care, which may exacerbate feelings of burdensomeness (Khanal & Chalise, 2020). The purpose of the quantitative study is to examine the relationships between the level of disability whereby individuals can perform self-care and mobility with levels of some or much difficulty or inability to do, multiple disabilities, and suicide ideation in retired men ages 60 years and older. This relationship has not yet been examined among this vulnerable population. The findings of this study are essential to support the advocation for interventions that prepare the individual for transition to retirement and support retirees with disabilities.

The current literature review establishes the importance of the problem and the relevance of applying the theoretical framework to the population. The meta-analysis conducted by Chu et al. (2017) serves as the framework for using the ITPS constructs and applying Joiner's theory (Joiner & Silva, 2009). The literature describes suicidality in men and the importance of assessing suicide risk because the number of people ages 65 years and older is increasing, therefore the rates of suicide may increase (Knapp, 2020). Eades et al. (2019) reported suicidal risk in older adults in a community-dwelling population, positing the risk factors, thwarted belongingness, and perceived burdensomeness. The researchers supported the importance of suicide screening for older adults and identified significant correlates to the risk of suicide using the IPTS framework. The literature review included the level of disability and retirement as correlates of risk to suicide. Late-life transitions through retirement and decreases in functional ability impact an individual's perception and perhaps the reality of their ability to socially connect and function independently due to loss of relationships, feeling productive, and physical and sensory declines increase the risk of suicide ideation because of loss of self-esteem, feelings of being a burden and social disconnection (Dang et al., 2022). Additionally, the review of the literature concludes the need to study other risk factors than depression for suicide ideation in older adults with a disability (Bickford et al., 2021), further supporting research on retirement and the level of disability in men, while controlling for age, depression, and marital status.

Conclusion

As disability increases challenges related to social disconnection, loss of independence, and perceived burdensomeness intensify. Existing literature confirms the need for suicide prevention efforts that go beyond traditional mental health screenings, advocating for integrated approaches that address functional limitations and social barriers. While depression is a known risk factor, my study will examine disability levels, disability type, and having more than one disability, in retired men age 60 years and older, controlling for age, depression, and marital status. Findings from the study will contribute to the development of structured support systems enhancing suicide prevention strategies that specifically address the needs of men transitioning into disability and retirement. The research design and data collection methodology are presented in Section 2.

Section 2: Research Design and Data Collection

The purpose of this quantitative study was to examine the associations between level of disability and suicide ideation among retired men 60 years and older, while controlling for age, depression, and marital status. This section will describe the research design and rationale, methodology, target population, sample and sampling procedures, procedures for recruitment, participation, data collection, instrumentation, threats to validity, and ethical procedures.

Research Design and Rationale

Through this study I examined the associations between the independent variables, type of disability (i.e., physical , functional vision and hearing) and level of disability with daily living questions (i.e., have some difficulty, have much difficulty, unable to do, and no difficulty), and the dependent variable (suicide ideation) controlling for age, depression and marital status. The secondary data source is the 2017-2018 NHANES. The data collected, which includes the dependent, independent, and control variables, were selected using the code book from the 2017-2018 NHANES questionnaire. In this quantitative study, a correlational cross-sectional approach was used to test the associations among the variables. To test for associations between the level of disability among retired men ages 60 years and older and suicide ideation, multivariate logistic regression analysis was used to apply inferences or generalizations to the population (Bloomfield & Fisher, 2019).

Quantitative research is a process used to describe and test relationships among and between variables (Bloomfield & Fisher, 2019). Correlational studies are used to determine the strength of the relationship or predictive relationship among the variables (Bloomfield and Fisher, 2019). In cross-sectional research, data collected are from many people at a point in time where relationships are assessed among variables in a specific population (Salazar et al., 2015). The data were used to describe characteristics of the population, such as age, depression, marital status, and the independent variable physical disability (have serious difficulty walking), sensory disability (have serious difficulty seeing or have serious difficulty hearing), and activities of daily living (have difficulty dressing or bathing or doing errands alone) and the association with dependent variable suicide ideation (Cummings, 2018).

A cross-sectional research design in health promotion research may determine risk or protective factors related to suicide ideation (Salazar et al., 2015). Therefore, a cross-sectional design using the data collected from the 2017-2018 NHANES survey is appropriate for this study to determine the strength of the relationship in different levels of disability defined as having some difficulty, much difficulty, no difficulty and unable to do and their association with suicide ideation in retired men ages 60 years and older. Because the study is using secondary data there are minimal time and resource constraints. The findings from the literature review suggest that the current research design is appropriate and aligns with similar research conducted within the last 5 years.

Methodology

Target Population

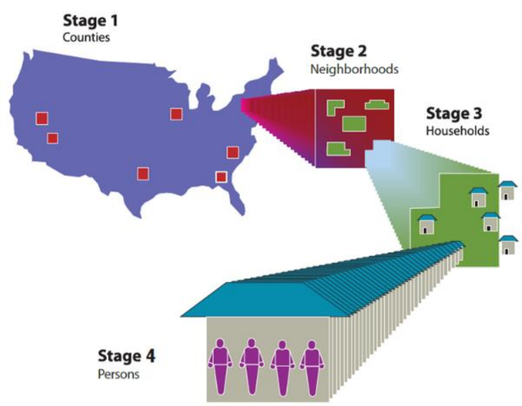
To examine the various factors associated with suicide ideation, the study population is restricted to retired men ages 60 years and older in the United States who participated in the NHANES questionnaire in the 2017-2018 cycle. The NHANES target population is noninstitutionalized civilian residents in the United States (CDC, n.d.-b.). Certain population subgroups are oversampled such as individuals 60 years and older to increase reliability of those subgroups (CDC, n.d.-b). In the 2017-2018 survey 16,211 participants were selected, of which 9,254 completed the interview (CDC, n.d.-b). By using the NHANES questionnaire dataset and focusing on retired men 60 years and older, this study was conducted to test the association between level of disability and suicide ideation. The target population represents an important group to investigate because feelings of loneliness and burdensomeness and the impact to the risk of suicide ideation. Controlling for demographic factors such as depression, age, and marital status will enhance the validity of the analysis to test the relationship among retired men with disability and suicide ideation.

Sample and Sampling Procedures

The 2017-2018 NHANES sample are noninstitutionalized civilians in the United States and District of Columbia. The NHANES sampling design is complex, clustered in four stages, and utilized stratified probability sampling from all U.S. counties (CDC, n.d.-b). The first stage consists of the selection of 15 primary sampling units (PSUs), which are composed of counites or small groups of contiguous counties (CDC, 2021). During the second stage, the primary sampling units are segmented to constitute between 20 and 24 census blocks which contain a cluster of households (CDC, 2021). In the third stage, these segments, consisting of 30 dwelling units (DU) or households, are selected from each block. Lastly in the fourth stage, a computer randomly selects one or all individuals within a household or no one (CDC, 2021; see Figure 2). In using probability sampling there is less risk of bias in the results and statistical method precision of results can be determined such as sample size and sampling error (Stratton, 2021).

Figure 2

NHANES Sampling Selection from the Centers for Disease Control



The NHANES sampling strategy is designed to oversample smaller population subgroups to increase the reliability and precision estimates of health indicators in these groups. In terms of the inclusion criteria, sample participants included in the NHANES sample are from noninstitutionalized civilian U.S. population. In this study the inclusion criteria are retired men 60 years and older who report having some difficulty, much difficulty, no difficulty or unable to see, hear, walk, or perform activities of daily living or self-care. The study focused on individuals who completed the demographic data on gender, age, and marital status, and relevant questions from the questionnaire related to disability, functioning, and PHQ-9 responses. NHANES excludes participants who are institutionalized in the U.S. civilian population.

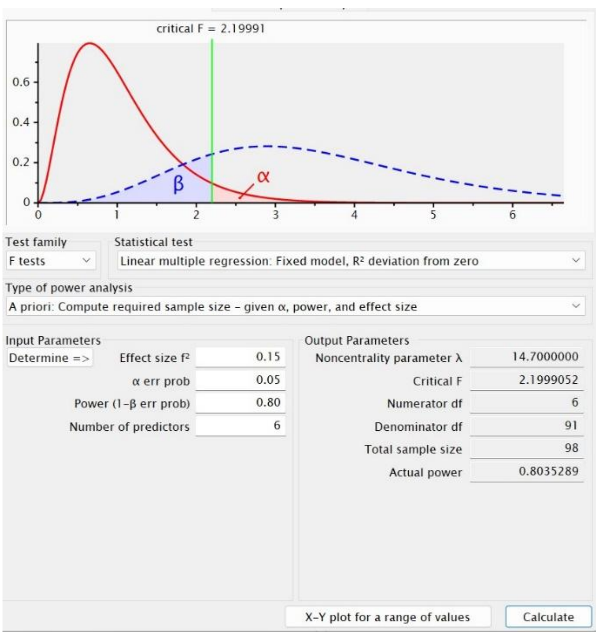
Power Analysis

An a priori power analysis was conducted using G*Power software version 3.1.9.7 software to compute the required sample size to test the study hypothesis (Faul et al., 2009). An a priori analysis is a sample size calculation performed before conducting the study (Kang, 2021). This study is a multivariate logistic regression cross-sectional study design. A power analysis using the F test family, statistical test linear multiple regression: fixed model, R2 deviation from zero. Results indicated the minimum sample size to achieve 80% power for detecting a medium effect size of 0.15 with alpha at 0.05 with two predictors (disability type and disability level) and three covariates (age, gender, and depression) is 98 (Htway, 2020; see Figure 3).

Conducting data cleaning and sorting procedures were performed before analyzing the data. Missing variable and incomplete data will be excluded from analysis to leave a final sample size that satisfies minimal requirements of priori power analysis (Mumba et al., 2020). Previous studies using logistic regression with comparable sample sizes (700–800 participants) have demonstrated stable parameter estimation and reliable confidence intervals, reinforcing the methodological validity of employing this approach in my study. Mulholland et al. (2025) examined suicidal ideation trajectories within a sample of 867 participants, successfully applying logistic regression to identify significant predictors. Their G-Power analysis confirmed that a sample within this range maintains a power of ≥ 0.80 at $\alpha = 0.05$, sufficient for detecting small-to-moderate effect sizes (OR $\geq$ 1.40). The study's ability to produce stable odds ratios and confidence intervals strengthens the justification for the current sample size, ensuring robust inferential validity. Furthermore, Mulholland et al. included covariate adjustments for mental health status and socio-economic determinants, demonstrating that logistic regression can accommodate confounding factors while preserving statistical power. By aligning with this methodological approach, my study ensures methodological consistency, validating that the selected sample size is optimal for logistic regression modeling in analyzing disability and suicide ideation.

Figure 3

*G*Power Analysis for Sample Size*



Procedures for Recruitment, Participation and Data Collection

The NHANES uses questionnaires and physical exams to collect data about the health and diet of people in the United States. The survey participants are interviewed by Interviewers, using the questionnaires, in their homes or mobile examination centers (Centers for Disease Control and Prevention, 2017.). Interviewers collect demographic, socioeconomic, dietary, and health-related questions data via Computer Assisted Person Interview (CAPI); (Centers for Disease Control and Prevention, 2017.). In the 2017-2018 survey, oversampling of the following subgroups: Hispanic, non-Hispanic Black, non-Hispanic and non-black Asian, non-Hispanic White persons and persons of other races at or below the 185% federal poverty level, and non-Hispanic White persons and persons of other races and ethnicities aged 0-11 years or 80 and over was implemented to improve reliability estimates of the subgroups (Stierman et al., 2021). Pregnant women were excluded from the analysis for obesity and severe obesity (Stierman et al., 2021). Additionally, pregnant women aged 20-44 years were excluded from the analysis for hypertension and diabetes (Stierman et al., 2021). The household selected from the sample is contacted by mail, inviting them to participate and directing them to complete a questionnaire online or by telephone about the people living in the home to determine eligibility to participate in the survey (Center for Disease Control and Prevention, 2017.). An NHANES representative contacts the people eligible to participate to schedule an in-person interview with trained interviewers to collect the demographic information, health history, dietary intake and environmental exposure details (Center for Disease Control and Prevention, 2017.). Upon completion of the interview, the participant was scheduled for an NHANES mobile exam center visit, where physical examinations and laboratory tests were performed (Center for Disease Control and Prevention, 2017.). Follow-up interviews may be collected over the telephone (Center for Disease Control and Prevention, 2017.). The data collected from both the questionnaire and laboratory study are publicly available (Center for Disease Control and Prevention, 2017.).

Instrumentation and Operationalization of Constructs

Instrumentation

The published instrument used for this study is the 2017-2018 NHANES survey conducted by the National Center for Health Statistics and the Centers for Disease Control and Prevention using both questionnaire and physical exam data (Centers for Disease Control and Prevention, 2017.). For this study, a dataset will be constructed from the publicly available data files with 2017-2018 NHANES demographic and questionnaire responses, which will be used to test the association between the independent variables' (levels of disability and type of disability) and the dependent variable (suicide ideation) among retired men 60 years and older, after controlling for age, depression, and marital status. The NHANES data set represents a comprehensive and nationally representative data source on health and nutrition in the United States (Centers for Disease Control and Prevention, 2017.). The National Center for Health Statistics (NCHS) Ethics Review Board approves the data collection protocols, and all survey participants provided informed consent before being interviewed and examined (Diep et al., 2022). The data sets are widely used in public health research because of the high-quality rigorous data collection procedures, and large sample sizes. These attributes make NHANES a reliable source for health data and particularly suitable for this study because a thorough analytical evaluation is conducted to assess reliability of the data (Akinbami et al., 2022). The data captures demographic data and responses in the questionnaire relevant to occupation, disability, and functional status of men 60 years and older to assess their association with suicide ideation which is measured using the PHQ-9 questions in the survey instrument.

Operationalization

Dependent Variable. The dependent variable for this study is suicide ideation. The NHANES questionnaire uses a nine-item depression screening instrument, Patient Health Questionnaire- 9 (PHQ-9) a validated screening instrument to assess for the presence of and severity of clinical depression (Diep et al., 2022). The item DPQ090 over the last two weeks how often have you been bothered by thoughts that you would be better off dead is item nine of the PHQ-9 questions in the survey Suicide ideation reported in item nine (DPQ090 question) has been shown to be a strong predictor of attempted or completed suicide in the following weeks to months (Diep et al., 2022). The question responses include several days, more than half the days and nearly every day, and not at all. A binary variable will be created with responses of several days, more than half the days and nearly every day being identified and recoded as 1 for 'yes' and not at all as 0 for 'no' for regression testing.

Independent Variables. The independent variables for this study are disability type and level of disability. Types of disability an individual may have include sensory and physical. Sensory disabilities in this study are vision and hearing impairment. Physical disabilities in this study are walking and functional or self-care limitations. The disability type is measured in the disability section of the 2017-2018 NHANES questionnaire.

The sensory disabilities, as defined by the survey variables are deaf or have serious difficulty hearing, (variable DLQ010), and blind or have serious difficulty seeing, (variable DLQ020). Physical disability, as defined by the survey variables are, have serious difficulty walking, (variable DLQ050), have difficulty dressing or bathing (DLQ060), have difficulty doing errands alone (DLQ080), and impairment requiring special equipment (variable PFQ033). Disability status identified as having any or none with dichotomous responses of yes or no. For this study I will consider levels of disability of physical function in mobility, activities of daily living and iADL domains. The participants responses to how difficult it is to perform the activities are: “no difficulty”, “some difficulty”, “much difficulty”, “unable to do”, and “do not do this activity”. The assessment of mobility will use the seven activities (variables); walking for a quarter mile (PFQ061B), walking up ten stairs (PFQ061C), stooping, crouching kneeling (PFQ061D), lifting, or carrying (PFQ061E), standing up from armless chair (PFQ061I), reaching up (PFQ061O), and grasping/holding small objects (PFQ061P). ADL will be assessed using the following activities (variables) walking between rooms (PFQ061H), getting in and out of bed (PFQ061J), using a fork, knife, cup (PFQ061K), dressing yourself (PFQ061L). The iADLs will be assessed by five activities (variables): managing money (PFQ061A), doing house chores (PFQ061F), preparing meals (PFQ061G), difficulty with home leisure activities (PQ061S), and difficulty attending a social event (PFQ061R). The 16 tasks will be scored from 0-5, with 0 do not do this task and 4 indicating maximum performance or no difficulty. The values will be summed to create a total score ranging from 0 to 80 with higher scores representing less difficulty performing tasks. This scoring is consistent with a previous study (Barry et al, 2020). For each of the 16 tasks, the participant responses will be categorized as; severe level of disability defined as *unable* *to do an activity*; a moderate level of disability defined as having much difficulty in an activity without being unable to do an activity; no disability defined as some or no difficulty doing all activities. The categories are consistent with prior reports (Zhou et al, 2023, Whtiney eta l., 2020) The participants reporting any difficulty in at least one of the mobility, ADL, or iADL activities is defined as physical function disability. Retirement status will be identified in the occupation section of the NHANES questionnaire, variable name OCQ380. The response of retired to the question is the main reason you did not work last week. In this study, I will measure responses as a dichotomous variable (Yes/No), with yes as retired and no for all other answers.

Covariates. Additional variables will be controlled for in the proposed analysis. These include age, depression and marital status. Age in this study is defined as 60 years and older. Age is found in the NHANES demographic data of the questionnaire (variable RIDAGEYR). Although men 60 and older will be retained in this study, two age groups will be coded as a range of values for60 to70 years, and 71 to 80 years of age. Marital status as defined by the survey variables are, living with a partner, married, widowed, never married, separated, and divorced (variable DMDMARTL). The question will be scored with dichotomous responses of yes or no, with yes being responses of married and living with a partner and no, as widowed, never married, separated, and divorced. For this study, depression will be assessed in the disability section of the 2017-2018 NHANES survey data. The question responses defined by the variable are: daily, weekly, monthly, a few times a year, and never (variable DLQ140). A binary variable will be created with responses of daily, weekly, monthly, a few times a year, being identified as ‘yes’ and never as ‘no’.

Data Analysis Plan

In this quantitative cross-sectional study, I will analyze secondary data using the 2017-2018 National Health and Nutrition Examination Survey (NHANES). Multivariate logistic regression analysis will be used to examine the direct relationship between disability type, disability level, and suicide ideation among retired men ages 60 years and older. For example, Milner et al. (2018) used multivariate analysis to find the relationship between self -reported disability and thoughts of suicide in men ages 18-55 using a secondary data source. Additionally, other studies have used regression to find the association between depression, stress, and suicide among other socioeconomic and sociodemographic factors such as education, employment, and living conditions respectively (Bickford et al., 2020; Choi & Lee, 2022; Watanabe et al., 2020). Previous researchers performed multivariate regression analysis of secondary data in cross-sectional studies to determine the association among similar variables used in this study. The publicly available NHANES data files will be compiled using the analytical procedures in IBM SPSS Statistics. The data will be analyzed using regression of the dependent variable, suicide ideation, and the independent variables, disability type, levels of disability and more than one disability. The control variables include age, depression, and marital status.

Research Question 1

To test the hypothesis for Research Question 1, is there a relationship between the type of disability and suicide ideation among retired men, 60 years and older, after controlling for age, depression, and marital status a multivariate logistic regression will be performed to investigate if disability type (vision, hearing, and physical) and functional disability (mobility, ADL and iADL) predict suicide ideation, after controlling for age, depression and marital status..

Research Question 2

To test the hypothesis for Research Question 2 is there a relationship between level of disability and suicide ideation among retired men, 60 years and older, a multivariate logistic regression will be performed to investigate the level of disability as defined by categories of severe; unable to do or do not do this, moderate; much difficulty; and no disability defined as some and no difficulty to predict odds of suicide ideation, after controlling for age, depression, and marital status.

Research Question 3

To test the hypothesis for Research Question 3, is there a relationship between having more than one disability type and suicide ideation in retired men 60 years and older a multivariate logistic regression will be performed to investigate if more than one disability predicts odds of suicide ideation after controlling for age, depression, and marital status. Prior to testing research questions 1-3, preliminary analysis were conducted to ensure no violation of the assumptions of independence and, multicollinearity. The binary nature of the outcome of interest, suicide ideation, was ensured.

Threats to Validity

Internal validity refers to which of the study's independent variables produce the result rather than others establishing trustworthiness of cause and effect (Stewart & Hitchcock, 2020). To mitigate the threat to internal validity. it is important to control for and eliminate the threat. To mitigate the threat, in this study I will control for, depression, and marital status due to the tendency to exaggerate the effect on the dependent variable, suicide ideation. A possible threat to external validity for this study was the use of survey data. A threat to validity was that the NHANES data were not collected to measure suicide ideation among retired men with a disability. However, the survey uses a valid PHQ-9 screening tool with item nine questions, thoughts that you were better off dead or hurting yourself in some way, as a predictor of suicide ideation (Kim & Kim, 2021). . Upon examination of the extant literature, there have been other studies conducted using the PHQ-9, and response to item nine, to assess suicide ideation. Another potential threat is testing reactivity, also known as the social desirability bias, where respondents' answers differ from their actual attitudes, values, or behaviors (Larson, 2019). Measures were taken to ensure participant confidentiality and anonymity in capturing the 2017-2018 NHANES data, minimizing the potential for testing reactivity and addressing threats to external validity (Larson, 2019). Additionally, participants are not aware of the use of secondary data for future research questions posed when completing the survey (Larson, 2019). The degree to which the study can make inferences about the general population and the predictive relationship among the variables is a threat. To mitigate this threat, NHANES oversamples participants ages 60 years and older to ensure representation of the population being used in this study. In addition, the study may be vulnerable because of a secondary quantitative analysis and not a primary study. The data set are from the 2017-2018 survey therefore results may differ today. I will use the most updated version of SPSS to measure results. Furthermore, data integrity was ensured by conducting data cleaning techniques.

Ethical Procedures

The National Center for Health Statistics (NCHS) CDC manages NHANES. Additionally, there is an NCHS Ethics Review Board for NHANES that approved the study. NHANES sought consent from participants before the study. Participation is voluntary, and information is confidential under the Public Health Service Act and Confidential Information and Protection and Statistical Efficiency Act of 2018 (CDC, 2017.). There are strict privacy standards for all participants. Participants received a unique identifier for the survey instead of their name to ensure anonymity and to protect participant privacy (CDC, 2017.). The CDC abides by the privacy standards and the federal legal requirements for confidentiality of participation and data protection (CDC, 2017.). The publicly available deidentified data used for this study will be retrieved from the NHANES 2017-2018 data set via the CDC website. The data was extracted after reviewing web tutorials and completing the data user agreement with Walden University Institutional Review Board (IRB). Data was maintained on secure servers and password protected. This researcher will have sole access to the data used in this study and data will be destroyed five years after completion of the study.

Summary

The roadmap of how the study will be conducted was included in the research design and methodology sections in detail. The aim of this quantitative cross-sectional study is to test the predictive relationship between the independent variables, disability type and level of disability, and the dependent variable, suicide ideation, in retired men ages 60 years and older. Secondary data was used from the 2017-2018 NHANES Survey, specifically the demographic data and questionnaire data, and analyzed to explore the strength of the potential relationships of the independent variables to the dependent variable among the population. The sample frame (inclusion and exclusion criteria) and sampling procedures were explained including how the participants were recruited, and data were collected. A power analysis was conducted to determine the minimum sample size for the study. The independent, dependent, and control variables were thoroughly described including how the variables will be re-coded for the statistical analysis. Data analysis will include logistic regression to answer the research questions and hypotheses. Potential threats to internal and external validity were described including mitigations to those threats. Finally, ethical issues and measures to ensure participant protection, confidentiality and privacy were described. The next section will present the findings and report results.

Section 3: Presentation of the Results and Findings

The purpose of this study was to examine whether there was a significant association between the type of disability, level of functional disability, and suicide ideation among retired men 60 years and older with a self-reported disability, controlling for age, depression, and marital status. The independent variables were type of disability (i.e., hearing, vision, and physical), level of functional (i.e., ADLs, iADLs, mobility) disability (i.e., have some difficulty, have much difficulty, unable to do, and no difficulty), and having more than one disability. The dependent variable was suicide ideation. The covariates were age, depression, marital status, and retirement. I used multivariate logistic regression analysis to test the research questions. This section includes information on the use of secondary data for analysis, the data analysis, the results, and the summary of key findings

Accessing the Data Set for Secondary Analysis

The data used in the study were from three cohorts of the NHANES study. The data are publicly available. To access the raw data, the CDC and Walden University required completion of a data use agreement. Once completed, I was able to access the data sets from the three NHANES cohorts surveyed in 2013-2018. Using the IBM SPSS software version 29, the data from the three cohorts were combined to include all participants. Initially, there were 29,400 participants across the three cohorts. Participants who were male (n = 14,452) were first identified. Among the males, about 20.12% were 60 years or older (n = 2,908). Approximately 43.26% of these remaining participants reported having a disability (n = 1,258). Further, as the outcome of interest was suicide ideation, 205 participants were removed for not having responded to the DPQ for suicidality. Lastly, an additional two individuals were removed for not having reported marital status, a covariate of interest. As retirement was an additional covariate of interest 282 participants who did not report whether they were retired were excluded from the final analyses. Thus, the final sample size included in the logistic regression analysis was 769 participants.

Descriptive Statistics

The following data represents the baseline descriptives and characteristics of the sample. The study participants were men ages 60 years and older with a minimum age of 60 and maximum age of 80 from the combined cohorts totaling 769 (M = 72.1, SD 6.833). The frequency distribution of the study sample (see Table 3) represents a diverse group of older adults, with Non-Hispanic Whites comprising the largest racial/ethnic group (49.3%). Educational attainment varied, with 26.3% having a high school diploma or GED, 25.1% completing some college or an associate degree, and 17.2% holding a college degree or higher. Nearly 63.7% were married or living with a partner. Household size was predominantly small, with 48.5% living in two-person households. Most (77.2%) were retired. Income distribution showed financial variation, with 32.9% earning under $20,000 annually, while 7% had incomes exceeding $100,000. Additionally, 1.8% of participants refused to disclose their income, and 1.2% reported not knowing their income level. Listwise deletion was used to remove this data where appropriate.

Table 1

Frequency Distribution of Study Sample

Characteristics	Frequency	Percent
Race/Hispanic Origin		
Mexican-American	112	14.6
Other Hispanic	58	7.5
Non-Hispanic White	379	49.3
Noon-Hispanic-Black	153	19.9
Other-Race Multi-racial	67	8.7
Served active duty in US armed forces		
Yes	342	44.5
No	427	55.5
Born in the U.S.		
Yes	607	78.9
No	162	21.1
Citizenship status		
Yes	725	94.3
No	43	5.6
Education level (adults 20+)		
Less than 9th grade	125	16.3
Grade 9-12 (no diploma)	115	15
Highschool graduate/GED	202	26.3
Some college or AA degree	193	25.1
College graduate or higher	132	17.2
Don't know	2	.3
Marital status		
Not married	279	36.3
Married or living with partner	490	63.7
Total number in household		
1 person	181	23.5
2 people	373	48.5
3 people	98	12.7
4 people	56	7.3
5 people	20	2.6
6 people	22	2.9
7 or more people	19	2.5
Retirement status		
Not retired	175	22.8
Retired	594	77.2
Annual household income		
$0 to $ 4,999	19	2.5
$ 5,000 to $ 9,999	38	4.9
$10,000 to $14,999	80	10.4
$15,000 to $19,999	97	12.6
$20,000 to $24,999	89	11.6
$25,000 to $34,999	79	10.3
$35,000 to $44,999	75	9.8
$45,000 to $54,999	51	6.6
$55,000 to $64,999	42	5.5
$65,000 to $74,999	33	4.3
$20,000 and over	17	2.2
Under $20,000	12	1.6
$75,000 to $99,999	43	5.6
$100,000 and over	54	7.0
Refused	14	1.8
Don't know	9	1.2

Changes in Methodology

The secondary data used in the study were from three NAHNES cohorts 2013-2014, 2015-2016, and 2017-2018. The decision to use data spanning from three cohorts was made in effort to achieve an ample sample size (n = 98) as determined by a priori power analysis, as mentioned in Section 2. However, increasing the number of cohorts yielded a smaller sample size than required as there were few respondents who were over the age of 60 years, who had a disability, and who reported suicide ideation among retired men, specifically. As such, the decision was made to include any men 60 years or over, regardless of retired status. An additional change was made to include retirement status of the participant as a covariate instead. Originally Question 9 in the depression screening tool was going to be used to assess suicide ideation. Instead, the dependent variable, suicide ideation was measured by calculating the sum scores of the PHQ-9 depression screening assessment. Scores of 5 or greater indicated suicide ideation at the time of the study. The statistical model used in the study was logistic regression not linear regression as the variables used in the study were binary and used to explore the relationship between the dependent and independent variables (Warner, 2021). With the changes to the data used in the study I was able to answer the research questions using multivariate logistic regression statistical model for data analysis.

Results

The purpose of this study was to use quantitative analysis to test the statistical significance between the independent variables, disability type, level of disability, and having more than one disability in men aged 60 years and older and the dependent variable, suicide ideation, while controlling for age, depression, marital status, and retirement status.

The following research questions guided the study and were included in the data analysis plan.

RQ 1: Is there a relationship between the type of disability and suicide ideation among retired men, 60 years and older, after controlling for age, depression, and marital status and retirement?

$H_0$1: There is no significant relationship between type of disability and suicide ideation among retired men, 60 years and older, after controlling for age, depression, marital status, and retirement status.

H_A1- There is a significant relationship between type of a disability and suicide ideation among retired men, 60 years and older, after controlling for age, depression, marital status, and retirement status

RQ 2: Is there a relationship between level of disability and suicide ideation among retired men, 60 years and older after controlling for age, depression, and marital status and retirement?

$H_0$2: There is no significant relationship between the level of physical functional disability and suicide ideation among retired men, 60 years and older, after controlling for age, depression, marital status, and retirement status.

H_A2: There is a significant relationship between the level of physical functional disability and suicide ideation among retired men, 60 years and older, after controlling for age, depression, marital status, and retirement status

RQ 3: Is there a relationship between having more than one disability type and suicide ideation in retired men 60 years and older after controlling for age, depression, and marital status and retirement?

$H_0$3: There is no relationship between the number of disabilities and suicide ideation among retired men, 60 years and older, after controlling for age, depression, marital status, and retirement status.

H_A3: There is a significant relationship between the number of disabilities and suicide ideation among retired men, 60 years and older, after controlling for age, depression, marital status, and retirement status

To answer RQ1 on the relationship between the type of disability and suicide ideation among retired men, 60 years and older, after controlling for age, depression, and marital status and retirement, a logistic regression was performed to ascertain the effects of types of disability (physical, hearing, or visual) on the likelihood of having suicide ideation, while controlling for age, depression, marital status, and retirement status. The omnibus logistic regression model was significant (χ^2 (7, N = 769) = 152.70, $p < .001$). The Hosmer and Lemeshow test was not statistically significant, (χ^2 (8, N = 769) = 2.76, $p = .949$.). The model explained 44.3% (Nagelkerke R^2) of the variance in suicide ideation and correctly classified 93.9% of cases. Those with a physical disability had a higher odds of suicide ideation compared to those without a physical disability. However, the result was not statistically significant at 95% confidence level. (OR = 1.93, 95%CI [0.700, 5.300]). While there is a potential association the study did not provide enough evidence to confidently conclude risk of suicide ideation. However, there was a significant association between visual disability and suicide ideation. Those with a visual disability were 2.71 times more likely to have suicidal ideation compared to those without a visual disability (OR = 2.71, 95%CI [1.106, 6.622]). Although hearing disability was not significantly associated with suicidal ideation, those with a hearing disability were 1.85 times more likely to have suicide ideation compared to those without a hearing disability (OR =1.85, 95%CI [0.909, 3.773]). There was a significant association between age group and suicide ideation. Men ages 71 - 80 years were 2.24 times more likely to have suicidal ideation compared to men ages 60 -70 years of age (OR = 2.24, 95%CI [1.026, 4.897]). Further, depression was a significant predictor of suicidal ideation whereby a one unit increase in depression scores was associated with a 1.29 greater likelihood of having suicidal ideation (OR =1.29, 95%CI [1.199, 1.380]). Marital status was not a significant predictor of suicide ideation whereby single individuals did not differ in odds of suicide ideation compared to those who were married or living with a partner (OR = 0.968, 95%CI [0.492, 1.908]). Retirement status was not a significant predictor of suicide ideation whereby retired men did not differ in odds of suicide ideation compared to men who were working (OR= 0.76, 95%CI [0.337, 1.704]). For full model statistics, see Table 2.

Table 2

Logistic Regression Analyses Disability Type

Variable	β	SE	Wald's	p	Odds Ratio (e)	95% LLCI	95% ULCI
Constant	-6.117	.793	59.524	<.001	0.002		
Retired	-.277	.413	.450	.502	0.758	0.337	1.704
Marital Status	-.032	.346	.009	.926	0.968	0.492	1.908
Age Group	.807	.399	4.102	.043	2.242	1.026	4.897
Depression	.252	.036	49.340	<.001	1.286	1.199	1.380
Physical	.656	.516	1.614	.204	1.927	0.700	5.300

Visual	.995	.457	4.751	.029	2.706	1.106	6.622
Hearing	-6.117	.793	2.879	.090	1.852	0.909	3.773

Note. Retired Referent Group = Not Retired; Marital Status Referent Group = Married or living with partner; Physical Disability Referent Group = No Physical Disability; Visual Disability Referent Group = No Vision Disability; Hearing Disability Referent Group = No Hearing Disability

Measurement of the responses for functional disability (i.e. mobility, ADL, and iADL) were used to calculate the scores to determine the levels of disability. Functional disability for this study was defined using mobility, activities of daily living (ADL), and instrumental activities of daily living (iADL) scores. The omnibus logistic regression model was significant (χ^2 (7, N = 769) = 159.41, $p < .001$.) The Hosmer and Lemeshow test was not statistically significant, (χ^2 (8, N = 769) = 3.11, $p = .927$). The model explained 46.5% (Nagelkerke R^2) of the variance in suicide ideation and correctly classified 94.5% of cases. For full model statistics, see Table 3. Participants with less severe mobility disabilities were less likely to have suicide ideation compared to individuals with worse mobility. Specifically, for every one unit increase in mobility scores (indicating greater mobility), participants were 12.6% less likely to report suicide ideation (OR = .874, 95%CI [0.800, 0.956]). Interestingly, individuals with greater ability to carry out activities of daily living were 1.52 times more likely to have suicide ideation (OR=1.52, 95%CI [1.182, 1.947]). Severity of impairment to carry out instrumental activities of daily living to test functional disability were not a statistically significant predictor of suicide ideation. (OR = 0.989, 95%CI [0.893, 1.097]).

Table 3

Logistic Regression Analyses Functional Disability

Variable	*B*	SE	Wald's	*P*	Odds Ratio (e)	95% LLCI	95% ULCI
Constant	-8.543	1.689	25.591	.<.001	0.000		
Retired	-.334	.430	.603	.437	0.716	0.308	1.664
Marital Status	-.053	.357	.022	.882	0.948	0.471	1.910
Age Group	.821	.415	3.920	.048	2.272	1.008	5.122
Depression	.319	.035	84.946	<.001	1.376	1.286	1.473
Mobility	-.135	.045	1.614	.003	0.874	0.800	.9560
ADLs	.417	.127	10.732	.001	1.517	1.182	1.947
iADLs	-.011	.053	.041	.839	0.989	0.893	1.3973

Note. Age Referent Group = 60-70 and 71-80; Retired Referent Group = Not Retired; Marital Status Referent Group = Married or living with a partner; Mobility, ADL and iADL the lower the score the more the severe the disability.

To answer RQ 2 on the relationship between level of disability and suicide ideation among retired men, 60 years and older after controlling for age, depression, marital status and retirement, a logistic regression was performed. The omnibus logistic regression model was significant (χ^2 (5, N = 769) = 144.89, p < .001.) The Hosmer and Lemeshow test was not statistically significant, (χ^2 (8, N = 769) = 6.79, p = .559). The model explained 42.2% (Nagelkerke R^2) of the variance in suicide ideation and correctly classified 93.6% of cases. For full model statistics, see Table 4. Level of disability was not a significant predictor of suicide ideation (OR = .987, 95%CI [0.956, 1.020]). That is, those with a level of disability (higher scores or no difficulty) were as likely to have suicidal ideation compared to those with lower scores. Depression was the only significant predictor of suicide ideation in men older than 60 years of age (OR = 1.336, 95%CI [1.256, 1.431]).

Table 4

Logistic Regression Analyses Level of Disability

Variable	*β*	SE	Wald's	*P*	Odds Ratio (e)	95% LLCI	95% ULCI
Constant	-4.305	1.004	18.38	.<.001	0.013		
Retired	-.207	.414	.249	.618	0.813	.362	1.830
Marital Status	-.163	.346	.221	.638	0.850	0.431	1.674
Age Group	.753	.393	3.666	.056	2.123	.982	4.588
Depression	.290	.032	84.209	<.001	1.336	1.256	1.421
Level Disability	-.013	.017	.585	.444	0.987	0.956	1.020

Note. Age Referent Group = 60-70 and 71-80; Retired Referent Group = Not Retired; Marital Status Referent Group = Married or living with a partner; Level of disability the lower the score the more severe the disability.

To answer RQ 3, which posits the relationship between having more than one disability type and suicide ideation in retired men 60 years and older after controlling for age, depression, marital status and retirement, a logistic regression was performed. The omnibus logistic regression model was significant (χ^2 (5, N = 769) = 146.31, p < .001.) The Hosmer and Lemeshow test was not statistically significant, (χ^2 (8, N = 769) = 5.05, p = .752). The model explained 42.6% (Nagelkerke R^2) of the variance in suicide ideation and correctly classified 93.6% of cases. Count of disabilities was not a significant predictor of suicide ideation (OR = 1.235, 95%CI [0.925, 1.650]). Specifically, having a higher count of disabilities did not put men at higher risk of suicide ideation. Depression was the only significant predictor of suicide ideation in men older than 60 years if age (OR = 1.333. 95%CI [1.254, 1.417]). See Table 5.

Table 5

Logistic Regression Analyses More than One Disability

Variable	*β*	SE	Wald's	*P*	Odds Ratio (e)	95% LLCI	95% ULCI
Constant (Intercept)	-5.346	.621	74.212	.<.001	0.005		
Retired	-.234	.405	.334	.564	0.791	0.358	1.751
Marital Status	-.133	.343	.150	.669	0.876	0.447	1.715
Age Group	.744	.393	3.585	.058	2.105	0.974	4.550
Depression	.287	.031	85.255	<.001	1.333	1.254	1.417
Disability Count	.211	.148	2.051	.152	1.235	0.925	1.650

Note. Age Referent Group = 60-70 and 71-80; Retired Referent Group = Not Retired; Marital Status Referent Group =; Married or living with a partner. Disability Count = sum total number of disabilities reported by participants.

Summary

Research Question 1 Results

RQ1: Is there a relationship between the type of disability and suicide ideation among retired men, 60 years and older, after controlling for age, depression, marital status, and retirement? These findings show that a physical disability did not have a significant impact on suicide ideation among men aged 60 and older (p = .204). Further, a hearing disability did not have a significant effect on suicide ideation, among men aged 60 and older (p = .090). Results did show that having a vision disability put men aged 60 and older at greater odds (OR = 2.71, p = .029) of developing suicide ideation.

For mobility and ADL disability lower scores indicate greater disability. Findings suggested that men age 60 years and older with less severe mobility limitations are less likely to have suicide ideation, (OR= 0.874, p = .003). Further, the greater the ability to perform ADL's or less severe ADL impairments, put men 60 years and older at greater odds to have suicide ideation (OR = 1.517, p = .001).

The covariates in the model were age, depression, marital status, and retirement. Results showed there is a significant association between men ages 71-80 and suicide ideation, ($\rho = .043$). There was a significant association among men with depression and suicide ideation ($\rho <.001$). There was not a significant impact on suicide ideation in men who were married ($\rho = .926$). There was not a significant association between men who are retired and suicide ideation, ($\rho = .502$).

The findings showed that of the disability types tested in this study, vision is the only disability that was associated with greater odds of suicide ideation among men aged 60 and older. Further, men 71-80 years old and who exhibited greater depression demonstrated higher odds of suicide ideation, when compared to men aged 60-70 years.

Research Question 2 Results

RQ 2: Is there a relationship between the level of disability and suicide ideation among retired men, 60 years and older, after controlling for age, depression, marital status, and retirement? The findings showed that men with a lower level of disability (higher scores or no difficulty) was not a significant predictor of suicide ideation among men aged 60 years and older.

The levels of disability were determined by summing scores from the functional disability variables defined as mobility, ADL, and ADL. Interestingly, in research question 1, significant findings emerged for mobility and ADL, where lower scores reflected less severe disability. Men older than 60 with a greater ability to perform ADLs or less severe impairment were found to be a significant predictor of suicide ideation. This counterintuitive finding aligns with recent research suggesting that functional capacity alone does not protect older adults from psychological distress post-retirement. For example, Mezuk et al. (2022) found that uncertainty about continued work in later life was significantly associated with increased depressive symptoms and passive suicidal ideation, highlighting the psychological toll of disrupted role expectations and identity loss during retirement transitions. This result also aligns with the IPTS constructs of thwarted belongingness and perceived burdensomeness. Older adults with preserved function may find themselves distant from meaningful community roles or feel socially invisible despite their physical capacity, amplifying a sense of disconnection. These findings suggest that functional ability alone is not a buffer against suicide ideation; instead, it may provide context to the critical role of how older men may interpret and experience their post-retirement lives. However, while results indicated that less severe mobility disability had no direct impact on suicide ideation, the relationship remained statistically significant. Despite these individual findings, the overall level of disability was not a significant predictor of suicidal ideation.

Research Question 3 Results

RQ3: Is there a relationship between having more than one disability type and suicide ideation in retired men 60 years and older after controlling for age, depression, marital status, and retirement? The findings showed that in men aged 60 years and older having more than one disability, did not significantly impact suicide ideation, ($\rho = .152$).

The findings of research questions 1, 2, and 3 showed that depression, vision disability, less severe ADL impairment, and being between the ages of 71-80 were associated with higher odds of suicide ideation. The results highlight the critical role of depression in older men as a significant risk factor underscoring the importance of early identification and intervention in men 60 years and older. Additionally, vision impairments and disability contribute to increased risk of suicide ideation reinforcing the need for accessible accommodations and targeted support to mitigate these challenges. Furthermore, men aged 60 years and older with less severe ADL impairments showed a greater likelihood of suicide ideation, potentially due to adjustment difficulties, loss of independence or gaps in supportive interventions during the transition into a disability. In the next section I provide a discussion of the findings for each research question and the theoretical framework, limitations of the study, recommendations for future research and discuss the implications for positive social change.

Section 4: Application to Professional Practice and Implications for Social Change

I examined the association between disability and suicide ideation in men ages 60 and older, controlling for age, depression, marital status, and retirement. During the analysis, it was necessary to adjust the sample size to ensure an appropriate size. There were three separate NHANES cohorts from 2013-2014 and 2015-2016 and 2017-2018, that included retirement as a covariate in addition to age, depression, and marital status. The statistical method used was logistical regression analysis to determine the association between men with disabilities and odds of demonstrating suicide ideation. Findings showed that men with a vision disability had greater odds of suicide ideation. Moreover, men who were aged 71-80 and/or had depression had greater odds of suicide ideation. Because the findings showed that men increasing in age who have a vision disability and/or depression have a statistically significant association with suicide ideation, it is crucial to examine these characteristics in future studies. Additionally, in terms of functioning independently the results show that mobility and ADL disability were predictors of suicide ideation. It is essential to study this population as people may experience isolation, social disconnection, and increased burdensomeness due to the vision and functional disabilities. These experiences may further lead to risk of suicide ideation. The findings from the study may influence health care policy and drive positive social change for older males with a disability.

Interpretation of Findings

The purpose of this cross-sectional study, which used secondary data from the 2014-2018 NHANES data sets, was to examine predictors of suicide ideation among men ages 60 and older while controlling for age, depression, marital status, and retirement. The results of the study indicated a statistically significant positive association with age and suicidal ideation for men between men ages 71-80, and for men with a vision disability. While there was not a significant association between levels of disability and suicide ideation, logistic regression analysis indicated that vision disability, ADLs, where scores indicate greater ability to carry out ADL or less severe impairment in ADL's were predictors of suicide ideation among men 60 years and older. The results provide insight into the relationships between the variables.

Disability Type and Suicide Ideation

For individuals with a vision disability, there was a 2.71 greater likelihood of suicide ideation compared to those without a vision disability. This finding aligns with the IPTS, as vision disability may contribute to heightened feelings of perceived burdensomeness and social isolation, two key constructs of the theory, thereby increasing the risk of suicide ideation. Vision disability as a predictor of suicide is consistent with Khazem et al.'s (2023) findings, where vision was categorized as a disability type in their study and found to be a predictor of suicide ideation. In addition, there was an increased perception of burdensomeness and stigma compared to people without vision disabilities (Khazem et al., 2023). Suicide ideation among people who are blind or have low vision is perceived to be related to a disability hierarchy and societal ableism (Cosh et al., 2019), where individuals internalized beliefs and feelings of stigma that there is less acceptance of people with vision disabilities compared to people with mobility disabilities (Cosh et al., 2019). Interactions in society and expectations to navigate inaccessible environments heighten perceived burdensomeness and thoughts of suicide in people with a vision disability (Khazem et al., 2023).

Furthermore, results are consistent with Kim (2016) noting suicide risk increases later in life and among men. Current findings highlight that men 60 years and older with a vision disability were at greater risk of suicide ideation. This study results support findings from Cosh et al (2019), which showed a significant increased risk of suicide ideation in French adults 73 and older with severe vision loss. As the severity of vision loss worsens over time, there can be a loss of functional ability, increasing the need to rely on others. The dependency increases the perceptions of burdensomeness, which is associated with the risk of suicide. Cosh et al.'s findings showed an increased risk of suicide ideation associated with mild and severe hearing loss. Despite the non-significant association of hearing loss among men 60 years and older and suicide ideation in my study, it is an important finding that can contribute to literature where studies on self-reporting of sensory loss and suicide ideation are limited.

Level of Disability and Suicide Ideation

Measurement of the relationship between the level of disability and suicide ideation among retired men, 60 years and older, after controlling for age, depression, marital status, and retirement status, was completed using logistic regression analysis. The level of disability included summing functional status using the mobility, ADL, and iADL variables. These findings showed that with a one unit increase in in mobility (higher scores or no difficulty), men were 12.6% less likely to have suicide ideation. Further, men aged 60 years and older with a one unit increase in ADL ability level were

1.52 times more likely to have suicide ideation. Lastly, men 60 years and older with the level of disability in iADLs (higher scores or no difficulty) were .989 times less likely to have suicide ideation. The findings of this study further support previous research where functional disability and depression were significantly associated with suicide ideation among older people (Barry et al., 2020). In this study, functional disability was identified as mobility, iADL, and ADL measures. While iADLs were not found to demonstrate significant associations with suicide ideation among men aged 60 years and older, ADLs and mobility were significantly associated with suicide ideation. The results support the importance of assessing men ages 60 and older for functional disability as an indicator to screen for depression and suicide ideation, particularly as society is aging (Barry et al., 2020).

More Than One Disability Type and Suicide Ideation

Examining the association between men aged 60 years and older who have multiple disabilities—specifically vision, hearing, and physical disabilities—there was no statistically significant link between having more than one disability type and suicidal ideation. However, findings related to dual sensory loss (combined vision and hearing impairments) align with those of Hovaldt et al. (2022). In their study, the majority of participants ($n = 241$, 83%) did not report thoughts of self-harm within the past two weeks. Their analysis also found no significant association between the combined variables of hearing loss, severity of vision loss, sex, and age (Hovaldt et al., 2022). Despite this, the study confirmed that dual sensory loss—specifically vision and hearing impairments—is linked to decreased levels of functioning (Hovaldt et al., 2022). Dual sensory loss affects approximately 30% of adults aged 70 years and older and may impair functional ability, leading to social isolation and loneliness, both recognized risk factors for depression. In cases where depression is present, there is an associated risk of self-harm (Hovaldt et al., 2022).

I examined factors associated with suicidal ideation in men aged 60 and older. After controlling for age, marital status, and retirement status, the key predictors of suicidal ideation were vision disability, functional disability related to self-care activities of daily living (ADLs), and depression. Men aged 71–80 also showed a significant association with suicidal ideation.

Depression emerged as a particularly strong predictor, reinforcing its well-established link to increased suicide risk. The study contributes to the limited research on disability-related predictors of suicidal ideation, particularly sensory loss and functional impairments. Prior studies by Cosh et al. (2019) and Hovaldt et al. (2020) identified vision loss as a significant predictor of suicidal ideation in older adults. Cosh et al. (2019) conducted a longitudinal study on French adults aged 73 and older, while Hovaldt et al. (2020) examined a cross-sectional sample of Danish adults aged 50 and older.

In this cross-sectional study, vision loss, functional disability in self-care ADLs, and depression were key predictors of suicidal ideation among men aged 60 and older.

Theoretical Framework

I applied the Interpersonal-Psychological Theory of Suicidal Behavior (IPTS) to test suicidal ideation in older men. According to IPTS, suicidal ideation arises from two key constructs: thwarted belongingness (a lack of social connection) and perceived burdensomeness (the belief that one is a burden to others) (Joiner & Silva, 2009).

I tested disability-related variables—including hearing loss, vision loss, physical disability, and levels of functional limitation in activities of daily living (ADLs and IADLs)—as predictors of suicidal ideation. The findings support the role of perceived burdensomeness, particularly among men 60 years and older with vision loss and functional disability. These conditions increase reliance on caregivers, leading to an increased perception of being a burden (Cosh et al., 2019).

Additionally, thwarted belongingness is reinforced through the impact of vision loss and functional disability on social isolation. Limitations in functional ability and sensory impairments contribute to reduced social interaction, loneliness, and a diminished sense of connection with others—key elements of thwarted belongingness (Cosh et al., 2019).

The study also found that depression is a significant predictor of suicidal ideation among men aged 60 and older. Depression compounds the effects of disability-related burdensomeness and social isolation, further increasing suicide risk. Prior research has similarly highlighted the strong link between depression and suicidal ideation, reinforcing its role as a critical factor in understanding suicide risk in older adults (Khazem et al., 2021).

Overall, the study's findings align with IPTS by demonstrating how vision impairment, functional disability, and depression contribute to feelings of perceived burdensomeness and thwarted belongingness, reinforcing their association with suicidal ideation among men aged 60 and older.

Limitations of the Study

This study has several limitations. While NHANES is representative of the U.S. population, the subset of men aged 60 and older with disabilities included in the analysis may not fully reflect the experiences of all older men with disabilities. This limits the generalizability of the findings.

Another limitation is the reliance on self-reported data for both disability status and suicidal ideation. Self-reporting can introduce bias, as participants may overreport or underreport their conditions due to stigma, memory recall issues, or misunderstanding survey questions. Older adults—particularly men—are generally less likely to disclose suicidal thoughts and may minimize or deny emotional distress.

Additionally, NHANES data are collected through cross-sectional surveys, meaning it captures information at a single point in time rather than tracking changes over time. This prevents the ability to establish causal relationships between disability and suicidal ideation.

Finally, the NHANES dataset may lack key variables needed for a more comprehensive analysis. For example, detailed information on the type and severity of disability may be missing, limiting the ability to fully examine its relationship with suicidal ideation.

Recommendations

A deeper examination of suicide risk in older men is essential, particularly regarding the role of disability. Understanding how disability contributes to increased suicide risk is critical for developing targeted interventions. Research on suicide prevention in older adults highlights the importance of identifying unique risk factors and stressors. Future studies should focus on tailored interventions that address the specific needs of older adults with vision disabilities.

Further research could explore intersectionality by examining additional factors—such as diabetic retinopathy, chronic pain, and economic status—that interact with vision and functional disabilities to exacerbate suicidal ideation. This study underscores the need to investigate risk factors beyond depression, particularly for older adults with disabilities.

Given the importance of social connections and the impact of retirement on social engagement, future studies should examine how support networks—including family, friends, and community services—affect suicide risk in older adults with vision disabilities. Longitudinal studies tracking changes in suicidal ideation and disability status over time could help establish causality and provide insights into the long-term effects of vision disability on mental health, independence, and well-being.

Additionally, qualitative research capturing firsthand narratives from older adults with disabilities could enhance understanding of their lived experiences. Addressing these gaps in research can build upon the current findings, deepen knowledge of the relationship between vision disability and suicide ideation in older men, and inform more effective prevention strategies and support systems for this vulnerable population.

Implications for Professional Practice and Positive Social Change

The findings from this study have important implications for professional practice and positive social change, particularly in supporting older adults with self-care and vision disabilities. Developing and testing targeted interventions tailored to this population could be beneficial, including mental health support, self-care assistance, and programs to enhance social connections.

This research highlights the need for comprehensive support systems, emphasizing healthcare access and mental health services to reduce suicidal ideation in older adults with self-care and vision disabilities. Depression emerged as a significant predictor of suicidal ideation in this population, reinforcing the importance of early mental health screenings, accessible treatment, and interventions designed to address depression alongside disability-related challenges.

Policy efforts should advocate for expanded mental health services, suicide screenings, self-care assistance, and community-based support networks to mitigate suicide risk. For instance, integrating routine mental health evaluations into Medicare Annual Wellness Visits using validated tools like the PHQ-9 can standardize depression and suicide screening among older adults. Funding initiatives that can enhance access to peer support and care navigation, such as establishing mobile crisis units trained in geriatric behavioral health, can provide timely, disability-competent intervention. Additionally, increasing healthcare provider awareness is crucial for recognizing and responding to both depression and suicidal ideation in older adults with disabilities. All states can include courses in the mandated continuing medical education requirements on disability competency, implicit bias training, and geriatric mental health assessments..

Findings from this study can also help inform clinical practices by identifying gaps in screening and guiding the development of tailored prevention strategies for older men with disabilities. Effective interventions should focus on improving accessibility, incorporating assistive technologies, and ensuring psychological support. By enhancing independence, these strategies can help reduce perceived burdensomeness, a known risk factor for suicidal ideation.

Ultimately, this research underscores the importance of addressing the unique challenges faced by older men with disabilities—particularly those related to self-care**,** activities of daily living (ADLs), vision impairment, and depression—to help mitigate suicide risk and improve quality of life.

Conclusion

This study highlights significant associations between vision disability, ADL disability, depression, and suicidal ideation among men aged 60 and older, underscoring the intricate relationship between aging, disability, and mental health. The findings reinforce the need for targeted interventions that address social isolation (thwarted belongingness) and perceptions of burdensomeness, both of which are key risk factors for suicidal ideation.

Vision disability and functional limitations in activities of daily living (ADLs) emerged as key predictors of suicidal ideation, reinforcing the impact of reduced independence and increased reliance on caregivers. These challenges can contribute to perceived burdensomeness, a well-documented risk factor for suicidal ideation. Additionally, ADL disability often leads to social isolation, which exacerbates feelings of thwarted belongingness, further increasing suicide risk.

Vision impairment and functional limitations in ADLs contribute to reduced independence and increased reliance on caregivers, exacerbating feelings of burdensomeness. Meanwhile, ADL disability often leads to social isolation, further increasing suicide risk. Depression, another strong predictor, emphasizes the necessity of integrating mental health screenings with disability-related interventions.

Guided by the Interpersonal Psychological Theory of Suicide (IPTS), suicide prevention strategies should focus on three critical areas:

- Enhancing social connection through peer networks, support groups, and caregiver training to counteract isolation.
- Reducing perceived burdensomeness by promoting self-worth through cognitive-behavioral therapy and strengths-based approaches.
- Early identification and intervention via screening tools and gatekeeper training to recognize and address warning signs before a crisis emerges.

Future research should examine additional risk factors, such as economic instability and chronic health conditions like diabetic retinopathy and chronic pain, while also evaluating interventions that promote autonomy and well-being. By bridging research with actionable change, policymakers, advocates, and scholars can work toward fostering equity, accessibility, and social inclusion, ensuring that older adults with disabilities receive the necessary resources to maintain dignity, independence, and mental well-being. Through a collaborative approach, aging with disability can be met with opportunity, inclusion, and effective suicide prevention strategies.

References

45 and Up Study Collaborators, Cohort Profile (2008). The 45 and Up Study. *International Journal of Epidemiology, 37*(5), 941–947. https://doi.org/10.1093/ije/dym184.

Akinbami, L. J., Chen, T. C., Davy, O., Ogden, C. L., Fink, S., Clark, J. (2022). National health and nutrition examination survey, 2017-March 2020 prepandemic file: Sample design, estimation, and analytic guidelines. National Center for Health Statistics. *Vital Health Stat 2*(190), https://dx.doi.org/10.15620/cdc:115434

Barry, L. C., Coman, E., Wakefield, D., Trestman, R. L., Conwell, Y., & Steffens, D. C. (2020). Functional disability, depression, and suicidal ideation in older prisoners. *Journal of Affective Disorders, 266*, 366–373. https://doi.org/10.1016/j.jad.2020.01.156

Beghi, M., Butera, E., Cerri, C. G., Cornaggia, C. M., Febbo, F., Mollica, A., Berardino, G., Piscitelli, D., Resta, E., Logroscino, G., Daniele, A., Altamura, M., Bellomo, A., Panza, F., Lozupone, M. (2021). Suicidal behavior in older age: A systematic review of risk factors associated to suicide attempts and completed suicides. *Neuroscience and Behavioral Reviews, 127*(193), 193–211. https://doi.org/10.1016/j.neubiorev.2021.04.011

Bickford, D., Morin, R. T., Nelson, J. C., & Mackin, R. S. (2020). Determinants of suicide-related ideation in late life depression: Associations with perceived stress. *Clinical Gerontologist, 43*(1), 37–45. https://doi.org/10.1080/07317115.2019.1666442

Bickford, D., Morin, R. T., Woodworth, C., Verduzco, E., Khan, M., Burns, E., Nelson, J. C., & Mackin, R. S. (2021). The relationship of frailty and disability with suicidal ideation in late life depression. *Aging & Mental Health, 25*(3), 439–444. https://doi.org/10.1080/13607863.2019.1698514

Bloomfield, J., & Fisher, M. J. (2019). Quantitative research design. *Journal of the Australasian Rehabilitation Nurses' Association, 22*(2), 27–30. https://doi.org/10.33235/jarna.22.2.2730

Burkholder, J. G., & Burbank, P. M. (2020). Chapter 2: Philosophical foundations and the role of theory in research. In J. G. Burkholder, K. A. Cox, L. M. Crawford, & J. H. Hitchcock (Eds.), *Research design and methods: An applied guide for the scholarly practitioner* (pp. 13–34). Sage Publications.

Canetto, S. S. (2017). Suicide: Why are older men so vulnerable? *Men and Masculinities, 20*(1), 49–70. https://doi.org/10.1177/1097184X15613832

Center for Budget and Policy Priorities. (2023, April 17). *Policy basics: Top ten facts about social security*. https://www.cbpp.org/research/social-security/top-ten-facts-about-social-security

Centers for Disease Control and Prevention. (n.d.-a). *Disability and health overview*. https://www.cdc.gov/ncbddd/disabilityandhealth/disability.html#What%20Is%20Disability?

Centers for Disease Control and Prevention. (n.d.-b). *Facts about suicide.* https://www.cdc.gov/suicide/facts/index.html

Centers for Disease Control and Prevention. (n.d.-c). *Suicide prevention.*

https://www.cdc.gov/suicide/facts/disparities-in-suicide.html

Centers for Disease Control and Prevention. (2017). *National health and nutrition examination survey: 2017-2018 questionnaire data*. National Center for Health Statistics. https://wwwn.cdc.gov/nchs/nhanes/search/variablelist.aspx?Component=Questionnaire&Cycle=2017-2018

Centers for Disease Control and Prevention. (2021, July 22). *National center for health statistics: National health and nutrition examination survey*. https://www.cdc.gov/nchs/nhanes/participant/participant-selected.htm

Center for Disease Control and Prevention. (2022, August, 12). *National center for health statistics, marital status*. https://www.cdc.gov/nchs/hus/sources-definitions/marital-status.htm

Centers for Disease Control and Prevention. (2023, May). *Disability and health data system (DHDS)*. http://dhds.cdc.gov

Chu, C., Buchman-Schmitt, J.M., Stanley, I. H., Hom, M. A., Tucker, R. P., Hagan, C. R., Rogers, M. L., Podlogar, M. C., Chiurliza, B., Ringer, F. B., Michaels, M. S., Patros, C. H. G., Joiner, T. E. (2017). The interpersonal theory of suicide: A systematic review and meta-analysis of a decade of cross-national research. *Psychological Bulletin, 143*(12), 1313–1345. https://doi.org/10.1037/bul0000123

Cosh, S., Carriere, I., Daien, V., Tzourio, C., Delcourt, C., & Helmer, C. (2019). Sensory loss and suicide ideation in older adults: Findings from the three city cohort study. *International Psychogeriatrics, 31*(1), 139–145.

https://doi.org/10.1017/S104161021800056X

Cox, K. A. (2020). Chapter 11: *Survey research*. In Research Design and Methods: An Applied Guide for the Scholarly Practitioner, (pp. 167-172). (J. G. Burkholder, K. A. Cox, L. M. Crawford, J. H. Hitchcock, Eds). Sage Publications

Curtis, E. A., Comiskey, C., & Dempsey, O. (2016). Importance and use of correlational research. *Nurse Researcher* , *23*(6), 20. https://doi.org/10.7748/nr.2016.e1382

Cummings, C. L. (2017). *Cross sectional design*. In The Sage Encyclopedia of Communication Research Methods, (pp. 315-317). (M. Allen Ed.). Sage Publications, Inc. http://dx.doi.org/10.4135/9781483381411.n118

D'Amen, B., Socci, M., & Santini, S. (2021). Intergenerational caring: a systematic literature review on young and young adult caregivers of older people. BMC *Geriatrics, 21*(1), 105. https://doi.org/10.1186/s12877-020-01976-z

Dang, L., Ananthasubramaniam, A, & Mezuk, B. (2022). Spotlight on the challenges of depression following retirement and opportunities for interventions. *Clinical Interventions of Aging, 17*, 1037-1056. https://doi.org/10.2147/CIA.S336301

Disability Support Guide. (2023, January 13). *Sensory disabilities*. https://www.disabilitysupportguide.com.au/information/article/sensory-disabilities

Ding, O. J., & Kennedy, G. J. (2021). Understanding vulnerability to late-life suicide. *Current Psychiatry Reports, 23*(9). https://doi.org/10.1007/s11920-021-01268-2

Eades, A., Segal, D. L., & Coolidge, F. L. (2019). Suicide risk factors among older adults: Exploring thwarted belongingness and perceived burdensomeness in relation to personality and self-esteem. *The International Journal of Aging and Human Development, 88*(2), 150-167. https://doi.org/10.1177/0091415018757214

Edemekong, P. F., Bomgaars, D. L., Sukumaran, S., & School, C. (2023, June 26). *Activities of daily living. In Stat Pearls* [Internet]. National Library of Medicine. https://www.ncbi.nlm.nih.gov/books/NBK470404/

El Ibrahimi, S., Xiao, Y., Bergeron, C.D., Beckford, N. Y., Virgen, E. M., & Smith, M. L. (2021). Suicide distribution and trends among male older adults in the U.S., 1999–2018. *American Journal of Preventive Medicine,60*(6), 802-811. https://doi.org/10.1016/j.amepre.2020.12.021

Erickson, W., & Lee, C. (2008). *2007 disability status report: United States. Ithaca, NY: Cornell University* Rehabilitation Research and Training Center on Disability Demographics and Statistics. http://digitalcommons.ilr.cornell.edu/cgi/viewcontent.cgi?article=1256&context=edicollect

Erickson, W., Lee, C., von Schrader, S. (2022). *Disability statistics from the American Community Survey (ACS). Ithaca, NY: Cornell University Yang-Tan Institute* (YTI). Retrieved from Cornell University Disability Statistics. www.disabilitystatistics.org

Fassberg, M. M., Cheung, G., Canetto, S. S., Erlangsen, A., Lapierre, S., Lindener, R., Draper, B., Gallo, J. J., Wong, C., Wu, J., Duberstein, P., & Waern, M. (2016). A systematic review of physical illness, functional disability, and suicidal behavior among older adults. *Aging & Mental Health,* 20(2), 166-194.

https://doi.org/10.1080/13607863.2015.1083945

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). *Statistical power analyzes using G*Power (3.1.9.7)* [Computer Software] University of Dusseldorf. https://www.psychologie.hhu.de/arbeitsgruppen/allgemeine-psychologie-und-arbeitspsychologie/gpower

Garnett, M. F. & Curtin, S. C. (2023, April). *Suicide mortality in the United States, 2001-2021*. (National Center for Health Statistics Data Brief, No. 464). https://www.cdc.gov/nchs/data/databriefs/db464.pdf

Giné-Garriga, M., Jerez-Roig, J., Coll-Planas, L., Skelton, D. A., Inzitari, M., Booth, J., & Souza, D. L. B. (2021). Is loneliness a predictor of the modern geriatric giants? Analysis from the survey of health, ageing, and retirement in Europe. *Maturitas, 144*, 93-101. https://doi.org/10.1016/j.maturitas.2020.11.0101

Griffin, L., Hosking, W., Gill, P. R., Shearson, K., Ivey, G., & Sharples, J. (2022). The gender paradox: Understanding the role of masculinity in suicidal ideation. *American Journal of Men's Health, 16*(5). https://doi.org/10.1177/15579883221123853

Guo, H. J. & Sapra, A. (2022). *Instrumental activity of daily living*. In: StatPearls [Internet]. StatPearls Publishing. https://www.ncbi.nlm.nih.gov/books/NBK553126/

Hein, P., Chavez-Hernandez, A.M., Padilla, G. M., & Figueroa, I. V. (2023). Suicide in later life in Uruguay: A suicide note analysis. OMEGA *Journal of Death and Dying, 0*(0), 1-16. https://doi.org/10.1177/00302228231196928

Heisel, M. J., & Flett, G. L. (2022). The social hopelessness questionnaire (SHQ): Psychometric properties, distress, and suicide ideation in a heterogeneous sample of older adults. *Journal of Affective Disorders, 299*, 475-482. https://doi.org/10.1016/j.jad.2021.11.021

Heisel, M.J., Moore, S. L., Flett, G.L., Norman, R. M. G., Links, P. S., Eynan, R., O'Rourke, N., Sarma, S., Fairlie, P., Wilson, K., Farrell, B., Grunau, M., Olson, R., & Conn, D. (2020). Meaning-centered men's groups: Initial findings of an intervention to enhance resiliency and reduce suicide risk in men facing retirement. *Clinical Gerontologist, 43*(1), 76-94. https://doi.org/10.1080/07317115.209.1666443

Horvaldt, H., Crowe, K., & Dammeyer. (2021). A cross-sectional study of prevalence and correlates of self-harm and suicidal ideation in older adults with dual sensory loss. *Disability and Health Journal, 15*. https://doi.org/10.1016/j.dhjo.2021.101204

Htway, Z. (2020, April 8). *G*Power: Calculating achieved power in multiple linear regression* [Video]. Walden University Academic Skills Center. https://academicanswers.waldenu.edu/faq/316161

Joiner Jr., T. E., & Silva, C. (2012). Chapter 18: Why people die by suicide: Further development and tests of the interpersonal-psychological theory of suicidal behavior. In Meaning, Mortality, and Choice: The Social Psychology of Existential Concerns, (pp. 325- 336). (P.R. Shaver & M. Mikulincer, Eds.). *American Psychological Association*. https://doi.org/10.1037/13748-018

Ju, Y. J., Kim, W., Lee, S. A. Yoon, H., & Park, E. C. (2017). Lack of retirement preparation is associated with increased depressive symptoms in the elderly: Findings from the Korean retirement and income panel study. *Journal of Korean Medical Science, 32*(8), 1516-1521. https://doi.org/10.3346/jkms.2017.32.9.1516

Kang, H. (2021). Sample size determination and power analysis using the G*Power software. *Journal of Educational Evaluation for Health Professions, 18,* 17. https://doi.org/10.3352/jeehp.2021.18.17

Khanal, B., & Chalise, H. N. (2020) Caregiver burden among informal caregivers of rural elderly in Nepal. *Journal of Health Care and Research, 1*(3), 149-156. https://doi.org/10.36502/2020/hcr.6173

Khazem, L. R. (2018). Physical disability and suicide: Recent advancements in understanding and future directions for considerations. *Current Opinion in Psychology, 22*, 18-22. https://doi.org/10.1016/j.copsyc.2017.07.018

Khazem, L.R., Anestis, M. D., Gratz, K. L., Tull, M. T., & Bryan, C. J. (2021) Examining the role of stigma and disability -related factors in suicide risk through the lens of the interpersonal theory of suicide. *Journal of Psychiatric Research, 137*, 652-656. https://doi.org/10.1016/j.jpsychires.2020.11.007

Khazem, L. R., Long, C. M., Hay, J. M., Lund, E. M., Anestis, M. D., Gratz, K. L., Tull, M. T., & Bryan, C. J. (2023-b). Examining the roles of disability-related body esteem and perceived burdensomeness in suicidal ideation among adults with vision-and mobility -related disabilities. *Rehabilitation Psychology*. https://doi.org/10.1037/rep0000514

Kim, S., Lee, H.-K., & Lee, K. (2021). Which PHQ-9 items can effectively screen for suicide? Machine learning approaches. *International Journal of Environmental Research and Public Health, 18*(7). https://doi.org/10.3390/ijerph18073339

Kindratt, T. B. (2022). National health and nutrition examination survey. In Big data for epidemiology: Applied data analysis using national health surveys. *Mavs Open Press*. https://uta.pressbooks.pub/bigdataforepidemiology/chapter/chapter10-nhanes/

Knapp, S. J. (2020). Facts, theories, and perspectives on suicide. In Suicide prevention: An ethically and scientifically informed approach. (pp. 7-32). *American Psychological Association*. https://doi.org/10.1037/0000145-002

Kposowa, A. J., Essat, D. A., & Breault, K. D. (2020). Marital status, sex, and suicide: New Longitudinal findings and Durkheim's marital status propositions. *Sociological Spectrum, 40*(2), 81-98. https://doi.org/10.1080/02732173.2020.1758261

Luo, Y., Lai, Q., Huang, H., Luo, J., Miao, J., Liao, R., Yang, Z., & Zhang, L. (2022). Risk factor analysis and nomogram construction for predicting suicidal ideation in patients with cancer. *BMC Psychiatry, 22*(1), 1–12. https://doi.org/10.1186/s12888-022-03987-z

Mackenzie, C. S., Visperas, A., Ogrodniczuk, J. S., Oliffe, J. L., & Nurmi, M. A. (2019). Age and sex difference in self-stigma and public stigma concerning depression and suicide in men. *Stigma and Health, 4*(2), 233-241. https://doi.org/10.1037/sah0000138

Marlow, N. M., Xie, Z.,Tanner, R., Jo, A., & Kirby, A.V. (2021).Association between disability and suicide-related outcomes among U.S. adults, *American Journal of Preventive Medicine 61*(6), 852-862. https://doi.org/10.1016/j.amepre.2021.05.035.

Mezuk, B., Dang, L., Jurgens, D., & Smith, J. (2022). Work expectations, depressive symptoms, and passive suicidal ideation among older adults: Evidence from the health and retirement study. *The Gerontologist, 62* (10), 1454–1465. https://doi.org/10.1093/geront/gnac110

Milner, A., Billier, A.-M., Emerson, E., & Kavanaugh, A. (2019). The relation between disability and suicide: Prospective evidence from the Ten to Men cohort. *Journal of Public Health, 41*(4), 707-713. https://doi.or/10.1093/pubmed/fdy197

Mournet, A.M., Smith, J. T., Bridge, J. A., Boudreaux, E. D., Snyder, D. J., Claassen, C. A., Jobes, D. A., Pao, M., & Horowitz, L. M., (2021). Limitations of screening for depression as a proxy for suicide risk in adult medical inpatients. *Journal of Academic Consult Liaison Psychiatry, 62*(4), 413-420. https://doi.org/10.1016/j.jaclp.2021.02.002

Mumba, M. N., Mugoya, G., Jurczyk, A., & Robb, M. (2020). Associations among balance self- efficacy, physical function, and pain interference among community-dwelling older adults. *Medsurg Nursing, 29*(1), 19-26. https://www.proquest.com/scholarly-journals/associations-among-balance-self-efficacy-physical/docview/2358192271/se-2

Mulholland, H., Whittington R., Lane, S., Haines-Delmont, A., Nathan, R., Saini, P., Kullu, C., Comerford, T., Yameen, F., Corcoran, R. (2023).

Longitudinal investigation of the presence of different trajectories and associated health and socio-economic determinants, for participants who report suicidal ideation within a community-based public health survey *BMJ Open*;**13**. https://doi.org/10.1136/bmjopen-2022-063699

Næss, E. O., Mehlum, L., & Qin, P. (2021). Marital status and suicide risk: Temporal effect of marital breakdown and contextual difference by socioeconomic status. SSM *Population Health, 15*. https://doi.org/10.1016/j.ssmph.2021.100853

National Institute of Mental Health. (n.d.). *Mental health information*. https://www.nimh.nih.gov/health/topics/depression

Netter, L. (2022, June 9). *Getting social security disability after age 65 (before full retirement age*). https://www.disabilitysecrets.com/topics/social-security-disability-basics.htm

Nikolopoulou, K. (2023, March 16). What Is Recall Bias? | Definition & Examples. *Scribbr*. Retrieved April 24, 2023, from https://www.scribbr.com/research-bias/recall-bias/

Nguyen, M.-H., Le, T.-T., Nguyen, H.-K. T., Ho, M.-T., Nguyen, H. T.T., & Vuong, Q.-H. (2021). Alice in suicideland: Exploring the suicidal ideation mechanism through the sense of connectedness and help-seeking behaviors. International *Journal of Environmental Research and Public Health, 18*(7). https://doi.org/10.3390/ijerph18073681

Obuobi-Donkor, G., Nkire, N., & Agyapong, V. I. O. (2021). Prevalence of major depressive disorder and correlates of thoughts of death, suicidal behavior, and death by suicide in the geriatric population: A general review of literature. *Behavioral Sciences 11*(11), 142. https://doi.org/10.3390/bs11110142

Omary, A. (2020). Predictors and confounders of suicidal ideation and suicide attempts among adults with and without depression. *Psychiatric Quarterly, 92*, 331-345. https://doi.org/10.1007/s11126-020-09800-y

Pietilä, I., Calasanti, T., Ojala, H., & King, N. (2020). Is retirement a crisis for men? Class and adjustment to retirement. *Men and Masculinities, 23*(2), 306-325. https://doi.org/10.1177/1097184X17724189

Pirkis, J., Currier, D., Carlin, J., Degenhardt, L., Dharmage, S. C., Giles-Corti, B., Gordon, I. R., Gurrin, L. C., Hocking, J. S., Kavanagh, A., Keogh, L., Koelmeyer, R., LaMontagne, A. D., Patton, G., Sanci, L., Spittal, M. J., Schlichthorst, M., Studdert, D., Williams, J., & English, D. R. (2017). Cohort profile: Ten to men (the Australian longitudinal study on male health. *International Journal of Epidemiology*, 793-794. https://doi.org/10.1093/ije/dyw055

Sagar-Ouriaghli, I., Godfrey, E., Bridge, L., Meade, L., & Brown, J. S. L. (2019). Improving mental health service utilization among men: A systematic review and synthesis of behavior change techniques within interventions targeting help-seeking. *American Journal of Men's Health, 13*(3). https://doi.org/10.1177/1557988319857009

Salazar, L. F., Crosby, R. A., & Di Clemente, R. J. (2015). Observational research designs. In Salazar, L. F. (Ed.) Research methods in health promotion (pp. 81-113). John Wiley & Sons, Incorporated. ProQuest Ebook Central, https://ebookcentral.proquest.com/lib/waldenu/detail.action?docID=7103666

Sher, L &Oquendo. (2023). Suicide: An overview for clinicians. *Medical Clinics of North America, 107*(1), 119-130. https://doi.org/10.1016/j.mcna.2022.03.008

Silvestrini, E. (2023, September 6). *Retirement risks. Annuity.Org. Retirement Risks: What to Expect and How to Prepare* (annuity.org)

Smigielski, W., Malek, K., Jurczyk, T., Korczak, K., Gajda, R., Cicha-Mikolajczyk, A., Piworiski, J., Smigielska-Kolanska, J., Smigielski J., Drygas, W., & Galecki, P. (2021). Suicide risk factors among polish adults aged 65 or older in 2000–2018 compared with selected countries worldwide. *International Journal of Environmental Research and Public Health 18*, 9921. https://doi.org/10.3390/ijerph18189921

Statista (2024). *Percentage of people in the US with a disability as of 2021, by age* https://www.statista.com/statistics/793952/disability-in-the-us-by-age/

Stewart, M. S., & Hitchcock, J. H. (2020). Chapter 12: Quality considerations. In Research Design and Methods: An Applied Guide for the Scholarly Practitioner, (pp. 175-198). (J. G. Burkholder, K. A. Cox, L. M. Crawford, J. H. Hitchcock, Eds). Sage Publications.

Stierman, B., Afful, J. Carroll, M. D., Chen, T., Davy, O., Fink, S., Fryar, C.D., Qiuping, G., Hales, C. M., Hughes, J. P., Ostchega, Y., Storandt, R. J., Akinbami, L. J. (2021, June 14). *National health and nutrition examination survey 2017-march 2020 prepandemic data files- Development of files and prevalence estimates for selected health outcomes*. http://dx.doi.org/10.15620/cdc:106273

Stratton, S. J. (2021). Population research: Convenience sampling strategies. *Prehospital and disaster medicine, 36*(4), 373-374. National Health Statistics Report, 158. https://doi.org/10.1017/S1049023X21000649

Van Orden, K. A., Witte, T. K., Curkrowicz, K. C., Braithwaite, S. R., Selby, E. A., & Joiner, T. E., Jr. (2010). *The interpersonal theory of suicide. Psychological Review 117*(2), 575-600. https://doi.org/10.1037/a0018697

Warner, R.M. (2021). Chapter 16: Binary logistic regression. In Applied statistics II: Multivariable and multivariate techniques (3rd ed.). (pp. 583-624) Sage.

Watanabe, K,. Goto, Ryoei, Takaysahiki, A., Tanaka, E., Watanabe, T., Anme, T., & Maeno, T. (2020). The association between social relationships and decline in instrumental activities of daily living among Japanese community-dwelling older people. *International Journal of Gerontology, 14*, 265-270. https://doi.org/10.6890/IJGE.202011_14(4).0003

Walther, A., Grub, J., Tsar, S., Ehlert, U., Heald, A., Perrin, R., Ogrodniczuk, J. S., Seidler, Z. E., Rice, S. M., Kealy, D., Oliffe, J. L., & Eggenberger, L. (2023). Status loss due to COVID-19, traditional masculinity, and their association with recent suicide attempts and suicidal ideation. *Psychology of Men & Masculinities, 24*(1), 47–62. https://doi.org/10.1037/men0000408

Whitney, D. G., Hurvitz, E.A., & Peterson, M. D. (2020). Cardiometabolic disease, depressive symptoms, and sleep disorders in middle-aged adults with functional disabilities: NHANES 2007-2014. *Disability Rehabilitation. 42*, 2186–2191.

https://doi.org/10.1080/09638288.2018.1555720

Yemiscigil, A., Powdthavee, N., & Whillans, A. V. (2021). The effects of retirement on sense of purpose in life: Crisis or opportunity? *Psychological Science, 32*(11), 1856-1864. https://doi.org/10.1177/09567976211024248

Zhou, T., de Havenon, Adam, Sheth, K. N., & Ross, J. S. (2023). Disability status and secondary prevention among survivors of stroke: A cross-sectional analysis of the 2011 to 2018 national health and nutrition examination survey. *Journal of the American Heart Association, 12* (23). https://doi.org/10.1161/JAHA.123.030869