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**The Predictors of Loneliness in Older Adults Aged 65 and Older Living in Northeastern Pennsylvania**

**A Review of the Physical, Psychological, and Cognitive Perspectives**

**Ann Romanosky**

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**Abstract**

 Loneliness is a pervasive problem that often leads to social isolation. This commonly happens with older adults as their roles change and as loss of social circles becomes more prevalent during the aging process. Loneliness directly impacts the health and well-being of older adults, being a risk factor for a multitude of health problems including physical, psychological, and cognitive issues, all of which impact the productive aging process. Loneliness and social isolation pose an increased risk of mortality and can reduce a person’s lifespan by nearly ten years. An emerging concern is the effects that social distancing brought on by the COVID-19 pandemic has on the overall health and wellness of older adults. This article raises the issue that there are physical, psychological, and cognitive consequences of loneliness and social isolation, especially on the older adult, and it explores the responsibility the health care sector has on addressing these concerns, particularly following the COVID-19 pandemic.

 *Key words:* loneliness, social isolation, older adults, physical implications, psychological implications, cognitive implications, COVID-19, productive aging.

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The Predictors of Loneliness in Older Adults Aged 65 and Older Living

In Northeastern Pennsylvania: A Review of the Physical, Psychological, and Cognitive Perspectives

**Introduction**

Loneliness is a term we often hear and assume we understand. But, in reality we may not truly comprehend its meaning or grasp its implications. Loneliness is the subjective perception of a deficit in social connection (Trad,Wharam, & Druss, 2020). A person’s subjective perspective of loneliness indicates that he or she feels a lack of social connectivity with others, regardless of the size of his or her social circle. It can be described as a subjective perception of a discrepancy between one’s desired relationships and one’s actual relationships (Perissinotto, Cenzer, & Covinsky, 2012). It is important to note that being socially connected does not necessarily indicate that a person feels a sense of belonging and companionship. A person can engage in relationships through traditional social networks and through social media sites and yet still feel lonely. Loneliness itself sets in when our social needs are not met (Hughes, et al 2004). Where it becomes a cause for concern is if the loneliness leads to social isolation, causing someone to become socially withdrawn and disconnected.

Loneliness affects people of all ages and can have negative repercussions across the lifespan. Perhaps some of the most vulnerable people affected by loneliness are older adults. It is noted that 43% of older adults over the age of 60 reported subjective loneliness (Stephenson, 2020). Others at risk include low-income individuals, and those with pre-existing mental illness (Trad, et al, 2020). In addition, older residents in high-crime areas are likely to be socially isolated due to limited meaningful social ties (Victor, Scambler, Bond, & Bowling, 2000).

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The perceptive state of loneliness can lead to social isolation which is the actual objective

measure of a person’s level of social connectivity. In addition, loneliness can have physical and mental health repercussions which in some cases, may lead to significant health complications, and even death. (Perissonotto, Stijacic, & Covinsky, 2012). Longitudinal investigations have shown that loneliness is even a risk factor for dementia (Jeste, Lee, & Cacioppo, 2020). Therefore, it is essential to understand what factors predict loneliness so that measures can be taken to mitigate negative influences which can in turn facilitate holistic wellness. Previous research on loneliness has reported negative physical, psychological, and social correlates of loneliness (Theeke, 2009). Recently, the onset of COVID-19 in early 2020 has challenged our position on loneliness, asserting the need for further research to determine how social distancing and other measures used to moderate exposure to the novel coronavirus have ultimately impacted the holistic health and wellness older adults.

The complex question of this paper is, what are the predictors of loneliness in older adults, primarily those living in Northeastern Pennsylvania? Potential predictors may be age, gender, marital status, ethnicity, perceived health status, community mobility, access to transportation, usage of information technology, participation in community-based socialization, engagement in intergenerational relationships, living arrangements, and perceived social connectivity. Northeastern Pennsylvania is chosen specifically because this region has a high older adult population, many of whom report subjective loneliness. Most geographical areas in this region are rural or suburban which makes access to community venues and community resources challenging. In addition, the climate is such that long, cold winters bring snow and ice that pose mobility hazards shuttering many older adults in their homes.

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**Literature Review**

Humans are social beings and as such, they rely on social relationships for fulfillment in

their daily lives. As adults age, social relationships change, as do many other aspects of a person’s life. These changes, which can occur abruptly or gradually over time, can have a significant impact on whether or not an older adult, which is anyone aged 65 and older, is experiencing loneliness or social isolation. Determining if older adults are remaining socially connected or if they are at risk for social isolation is necessary to help facilitate a healthy aging

process. Loneliness and social isolation are linked with a higher risk for cardiovascular disease, cerebrovascular morbidities, worsening depression and anxiety, accelerated cognitive decline in older adults, and an increased risk for developing dementia (Stephenson, 2020). Some research has suggested that loneliness seems most detrimental to mental health, whereas social isolation impacts physical and cognitive health more negatively (Beller & Wagner, 2018). Other research suggests that loneliness does negatively impact both physical and cognitive functions. The physical, psychological/mental health, and cognitive perspectives support the construct that loneliness and social isolation are a public health concern and are deserving of appropriate research.

**Physical Perspective**

Research suggests that a strong social network has a reduced mortality risk of as many as

nine years, supporting the importance that socialization has on the well-being of older adults

 (Northcott, Marshall, & Hilari, 2016). In one study, it was revealed that the odds ratio for increased mortality for loneliness is 1.45. For reference, this is nearly double the odds ratio for

increased mortality for obesity and quadruple the odds ratio for mortality for air pollution (Holt-

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Lunstad, Smith, & Layton, 2010). Hypertension, malnutrition, and substance abuse correlate with increased loneliness and social isolation (Theeke, 2009). Higher loneliness in mid- to late life has been associated with elevated cardiovascular and neuroendocrine markers of stress, impaired sleep, and proinflammatory physiological effects, which may accelerate neurodegeneration in the hippocampus and in other brain regions important for emotional regulation and cognition (Blazer, 2020). Increased risk from coronary artery disease and stroke, increased falls, cognitive decline, rehospitalization, and death by suicide all increase with social isolation (Aoki, et al, 2018). Inflammatory responses can affect the immune system, compromising the immuno-response process, thereby impacting a person’s overall ability to fight illnesses and diseases. And individuals who did not have supportive relationships were four times more likely to die within six months following open heart surgery (National Council for Behavioral Health, 2016).

The aging process itself can lead to a breakdown of various systems within the body. Research suggests that the role of social networks and loneliness are associated with a global decline in function (Buchman, et al, 2010). Research has also suggested that those older adults who feel lonely have a functional decline over six years in the areas of activities of daily living (ADL’s), which include eating, dressing, bathing, transferring from one seating surface to another, and toileting. Functional decline is also noted in the person’s ability to perform upper extremity tasks, walk, and climb stairs (Perissinotto, Cenzer, & Covinsky, 2012). Decline of

function in these areas can reduce an older adult’s social connectivity. They may choose to avoid

social participation due to their reliance on others, as they may perceive that they are imposing

a burden upon those who are caring for them. They may feel self-conscious about their physical

appearance due to their functional decline and determine that they should withdraw from social

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connections. Or they may feel lonely because they are unable to physically meet the demands required of them when engaging within their social circles.

**Psychological/Mental Health Perspective**

Loneliness is a known risk factor for mental illnesses. Most commonly noted mental illnesses associated with loneliness include depression, anxiety, panic attacks, and suicidality (Beutial, Klein, Brahler, Reiner, Junger, Michal, & Tibubos, 2017). It is noted that depression is among the most common disabilities in older adults (Skoog, 2008). And suicide rates are often highest in the elderly (Hawton & van Heerington, 2009). Anxiety among community-dwelling seniors is as high as 27% (Bryant, Jackson, & James, 2008). All of these mental health factors are impacted by loneliness and social isolation. Loneliness and social isolation have been found to make people less resilient to stress, to weaken the immune system, and to decrease the likelihood of participation in healthy behaviors, including exercise (Cacioppa, Cacioppa, Capitanio, & Cole, 2015). Additional studies have found that those persons who are lonely sleep poorly and have poor health behaviors, including poor compliance with taking medication appropriately and consistently (Perissinotto, Cenzer, & Covinsky, 2012). These noted health-risk behaviors promote engagement in damaging activities such as unhealthy eating, smoking, and increased alcohol intake (Lillyman & Lillyman, 2007).

**Cognitive Perspective**

The effects loneliness has on cognition has been researched previously in studies such as

the Helsinki Ageing study and the Dublin Healthy Ageing study. In long-term studies, it is noted

that feelings of loneliness can increase the risk of developing Alzheimer’s disease. There is a notable decline in global cognitive function with reduced category fluency, slower psychomotor processing speed, reduced visual memory savings score, short delayed verbal recall, retroactive

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interference (a component of verbal memory), and pre-morbid IQ (Luanaigh, O’Connell, Chin, Hamilton, Coen, Walsh, Walsh, Caokley, Cunningham, & Lawlor, 2001). And most notably, loneliness has been associated with a 40% increased risk of dementia (Sutin, Lechetti, & Terracciano, 2018).

Social isolation affects the rate and fate of new cell proliferation in the adult brain (Gheusi, Ortega-Perez, Murray, & Lledo, 2009). Enriching social environments and social interactions enhance cell proliferation and neurogenesis in the brain regions responsible for social interaction, memory and communication (Dunlap & Chung, 2013). In contrast, brain cell proliferation decreases with social isolation (Barnea, Mishal, & Nottebohm, 2006). The brain is the principal organ for forming, monitoring, maintaining, repairing, and replacing salutary connections with others and categorizes, abstracts, and evaluates incoming stimuli needed for appropriate social interactions (Cacioppo, Capitanio, & Cacioppo, 2014). So, as social

interactions and social connectivity decrease and social disconnection increases, changes in the brain take place, impacting overall cognitive health and cognitive function, all as a direct result of social isolation.

Encouraging active participation in social and leisure activities that require cognitive and social stimulation can ultimately facilitate physical health. It is reasonable to suggest that as individuals advance through the aging process, measures need to be taken to ensure that social

networks are promoted and preserved in order to ensure cognitive and physical vitality in support of a productive aging process. Because health and wellness risks are associated with social isolation and loneliness in older adults, mitigating these health risks may improve not only mental health but also physical health and quality of life in the older adult population (Smallfield & Molitor, 2019).

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**Inevitable changes**

The aging process brings with it many changes both physically and socially. Arteries harden, blood thickens, reactions slow, bone density reduces, and the senses dull (Bedine, 2019). Hearing loss is not an uncommon occurrence for older adults and can lead to a reduction in socialization. Research suggests that social isolation is a mediating factor for those who have untreated hearing loss (Ray, Popli, & Fell, 2018). Older adults often withdraw from social situations due to hearing loss for a variety of reasons. They may find it difficult to keep up with conversations, especially where background noise is prevalent. Discriminating background noise from conversational noise can be confusing and exasperating. Older adults find themselves asking their company to repeat themselves which can be frustrating and embarrassing. Rather than continuing with the repeated experiences, those older adults with hearing loss oftentimes slowly withdraw from social situations. Phone conversations can be difficult as well, so telephone communication may also diminish. All of these factors can lead to loneliness and social isolation. The simple intervention of using hearing aids can be a reasonable solution to this problem.

The roles we serve evolve and change over time. As children become adults, the role of active parenting changes to a less active one, and in many cases, evolves into a grandparenting

 role. Retirement leads to role changes from employees to retirees. As spouses and family members age, health-related changes may prompt the assumption of new roles of caregiving.

And with the deaths of spouses, siblings, other family, and friends, relationship roles change as

well. Role changes ultimately lead to changes in socialization, especially for an elderly person (Boz, 2018). How an older adult adapts to these socialization changes can determine whether or not he or she is at risk for social isolation. Changes in socialization at any age can have a

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negative impact on a person. If the change is in fact negative, it can lead to social isolation.

Families frequently become an older adult’s primary social contacts over time. It seems reasonable to ascertain that human beings begin and end the traditional life cycle with family being the center of their social circles and their primary support systems.

 People may need to become more reliant on others to assist with aspects of daily life, including mobility and transportation as they age. Older adults face a significant transport disadvantage (Broome, McKenna, Fleming, & Worral, 2009). Limited access to private and public transportation may have a negative impact on a person’s ability to engage in socialization activities. Families and communities working together to provide means of access to socialization activities, as well as providing meaningful activities in which they can participate, can facilitate a productive aging process for older adults and help to reduce the incidences of social isolation. And for those who are unable to actively participate in community-based activities, a more modern approach to socialization can be obtained through participation in social media sites and other technology-based media. Interactive technology such as Zoom and Google Meet has gained popularity in recent times, partly due to the quarantine brought on by COVID-19. For those seniors who have access to this media, interactive connections can be

made for such things as videoconference bingo and sing-a-longs, as well as other interactional games and activities.

**An emerging concern: COVID-19**

When the COVID-19 pandemic became prevalent in the United States in March 2020,

many nursing homes shuttered their doors to families and other visitors in an effort to keep their residents safe and healthy. Nursing homes restricted all visitors and all non-essential staff were banned. Families were physically cut off from their loved ones (Yeh, Huang, Yeh, Huang,

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Huang, Chang, Chen, 2020). Clergy, spiritual advisors, and community volunteers were included in those who were refused entry. There was a national movement to protect seniors and older adults who were considered to be the most vulnerable to the novel coronavirus. Families and friends were discouraged from visiting parents, grandparents, friends, and neighbors who were over the age of 65 and those who had underlying medical conditions. This applied not only to nursing home and assisted living residents, but to community-dwelling seniors as well. What was initially thought to be a short-term refrain ultimately drew on for many months throughout the year. The impact of this forced isolation is truly unknown. However, the pandemic of 2020 did shed some light on the concepts of social isolation and loneliness, perhaps bringing it to the forefront where in the past it had not been widely considered.

Portions of the Northeastern Pennsylvania region were greatly impacted by COVID-19, including many nursing homes where death tolls climbed as staff became overwhelmed with infected residents. To further protect the physical health of their residents, nursing home staff were directed by the state department of health and the Centers for Disease Control and Prevention to further restrict residents, calling for them to remain in their rooms for therapies and for many, mealtime, unless eating safety was a concern. (Trad, Wharam, Druss, 2020). For

socialization, some residents were permitted to sit in the doorways of their rooms for hallway activities. Others were unable for various reasons. Those residents with hearing loss found this to be challenging and frustrating as long hallways with a staff member participating at one end or the other is not necessarily conducive to constructive or meaningful engagement and activity participation.

Social distancing became a way of life that brought with it the unintended result of disconnection from others. Disconnection seems to be a contributor of loneliness and a

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catalyst for social isolation. To some extent, protection from a virus became more important than

preserving all other aspects of health. The ending results of cardiovascular, cerebrovascular, cognitive, and psychological incidents and diseases could also be as catastrophic as the very virus itself, however these effects are truly unknown at the present time. Another emerging concern is that going forward, visitor and activity restriction in hospitals and nursing homes may become commonplace during peak times of illnesses, such as flu season and with other contagious viruses. If loneliness and social isolation lead to a decreased immune response to illnesses, a concern is that the forced isolation and social distancing brought on with the pandemic may ultimately reduce the immune systems of older adults thereby making them less able to fight and/or survive the virus itself, or other illnesses for that matter. Despite the obvious threat to mortality, social distancing puts older adults at an acute risk of loneliness and social isolation, which is a compounding factor for decline in physical and mental health (Tyrell

and Williams, 2020).

**Remaining Connected**

How people remain socially connected has become more varied in recent decades. As

technology continues to evolve, seemingly impersonal forms of communication through the use

of technology such as texting, social media, and email are becoming more common. While an intention of these forms of technology would be to increase a sense of social connection, it is possible that the lack of personal human interaction may actually have the opposite effect. In some cases, use of this impersonal means of communication can actually increase loneliness (Trad, Wharam, & Druss, 2020). Technology and globalization have upended social mores and disrupted traditional social connection. Information overload, 24-hour connectivity, countless but superficial and sometimes harmful social media relationships have elevated the level of stress in

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modern society (Jeste, Lee, and Cacioppo, 2020).

But for some seniors, use of technology may actually improve their social connectivity. Reduced mobility, especially in the community, may present an obstacle for older adults in their attempt to remain socially involved with their family and friends. Increasing the accessibility of available and relevant everyday technologies among older adults can increase activity engagement (Walsh, 2018). The use of smart technology may promote the social connectivity of seniors with their grandchildren as the grandchildren may be more apt to send a text rather than make a phone call or stop their busy lives for a visit. While in-person socialization is preferred, smart technology may possibly make a connection where one might not otherwise be made. The use of information technology became a vital thread of communication and socialization for seniors during the COVID-19 pandemic starting in early 2020. With the enforcement of social distancing and stay at home orders, seniors became socially disconnected with their families and

friends. Use of information technology helped to pacify the need for social connection as the months of physical separation drew on. This crash course in the use of interactive technology can only be helpful going forward beyond a pandemic or other health crisis. Had this groundwork not been forced into use, many of today’s seniors may have continued to resist its use and remained disconnected with family, friends, and the community. And as the technologically savvy population ages, their creativity into remaining socially connected while physically separated may continue to flourish, further reducing the incidence of loneliness and social isolation in the future.

A person’s intrinsic desire to remain connected with his or her spiritual circle can also be satisfied with creative usage of technology. Some Christian religious services and Masses have been historically available through television broadcasts. These services were typically broader

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in nature, generally Christian services or Catholic Masses broadcasted either regionally or nationally, but not through an individual’s own religious community. During the recent pandemic, churches and synagogues were forced to close. This became a concern because religious individuals of all faiths generally gain a sense of belonging through religion (Gebauer & Maio, 2012). Religious leaders became creative to keep their congregations engaged. Some Jewish communities allowed balcony minyan, video conferencing, and broadcasting of Passover (Frei-Landau, 2020). Other religious services were made available through live-streamed services, often through social media sites. Video-streaming, online prayer meetings and videoconferencing of discussion meetings became effective ways to compensate for in-person meetings (VanderWeele, 2020). The development of these innovative strategies has pioneered the possibility for older adults to remain spiritually connected within their existing religious communities. Going forward, this new development can be seen as a positive link between homebound parishioners and the church communities, helping those who are unable to attend in-person services to remain connected and engaged.

**Measurement of Loneliness**

Measures of social isolation and loneliness can vary. With social isolation being an

objective construct, it’s important to note that it is a relative one as well. We measure social isolation in relationship to a person’s typical social environment. If a person’s social circle has diminished or if a person has removed himself or herself from their social circle, we can

objectively measure the number of social contacts he or she keeps. If there is a dramatic decrease

in social contacts, social isolation is likely a significant concern. Whereas on the other hand,

loneliness is a subjective measure. A common tool used for measuring subjective loneliness is

the UCLA Loneliness Scale. This scale has a long version with 20 questions, a shorter version

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with 8 items, and a 3-item Revised UCLA Loneliness Scale. The 20-question version is very detailed and has four rating categories of *Never, Rarely, Sometimes, and Often.* It is cumbersome and tedious to administer to an individual, as it was originally designed to be self-administered. For surveys relying on telephone communication, this 20-item scale is a poor fit (Hughes, Waite, Hawkley, and Cacioppo 2004). This is especially important to consider when living in the time of a pandemic like COVID-19, but also during other times where any type of virus transmission may be more likely, such as flu season. Telephone surveys may be necessary due to a variety of reasons, including to prevent transmission of infectious diseases and also including a potential lack of transportation or access to community services somewhat common to this geographical area.

The 8-item UCLA Loneliness Scale uses the same four rating categories as the 20-item scale but has reduced the number of survey questions from 20 to eight with its revision. The

changes made in the latest revision, the 3-item Revised Loneliness Scale, marks the most significant changes to the original scale. It is noted that the rating categories have dropped to

three: *Hardly Ever, Some of the Time, Often.* The number of survey questions also drops to three.

Scores range from 3 to 9, with a score of 3-5 deemed “not lonely” and a score of 6-9 indicating loneliness. This scale was found to have an internal reliability of a Cronbach’s alpha = .79 which

is acceptable (Shankar, Hamer, McMunn, Demakaos, and Steptoe, 2017). It is also easier to administer the 3-item scale to an individual who is not capable of self-administering the test for any variety of reasons including but not limited to visual deficits that may be common with older age. Therefore, the 3-Item Revised UCLA Loneliness Scale is a preferred tool for use when measuring loneliness.

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**Analysis**

Social isolation is a real and present concern for older adults. Socialization is necessary for all humans, especially older adults, as socialization is actually responsible for promoting the overall good health of seniors. Socialization also reduces mortality and helps to prevent physical and cognitive decline. Attention is afforded to the connection that social networks have on a productive aging process. Social networks and social participation are important factors impacting the well-being of the older adult. The impact of the loss of meaningful contact with family and friends cannot be understated, especially for many older adults (Tyrell and Williams, 2020). It is well documented that limited social support is linked with being a major risk factor for poor health, mortality, and dementia (Rodrigues, et al, 2018). Research suggests that loneliness and social isolation have been found to have a synergistic effect on mortality. The higher the social isolation, the greater the effect of loneliness is on mortality. And, the higher the loneliness, the greater is the effect of social isolation (Beller and Wagner, 2018). It is necessary to encourage active participation in social and leisure activities, particularly ones that encourage

cognitive, physical, intellectual, or social skills as these have shown to decrease cognitive decline and promote physical health (Smallfield & Molitor, 2018).

There are several factors to consider as potential contributors to the level of loneliness a person may feel. A person’s advancing age may be a factor as work roles fade, social circles

change, and as friends and family members die. Gender should also be considered, determining if males or females experience loneliness more. Whether or not a person is in a partnership or married may potentially influence loneliness. Use of information technology seems to have played an important role in the older adult’s life particularly during the onset of the COVID-19 pandemic as it became a primary means of social connection during a time where social

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distancing was necessary for survival (Moore & Hancock, 2020). Assessing its role in predicting

loneliness beyond the pandemic may be useful, especially for those who do not have access to information technology such as smart phones, tablets, computers, and internet access.

 Other considerations for predicting loneliness involve a person’s active involvement within their community with regard to community socialization, access to transportation for this socialization, and how mobile a person is within his or her community. Understanding a person’s perception of connection with others, or social connectivity, will be helpful in assessing loneliness. Assessing whether or not an older adult has a meaningful relationship with young persons, such as grandchildren or those who would be of an age comparable to grandchildren, is also worth exploring. A person’s health status may or may not impact loneliness, but it is reasonable to consider if an older adult is in poor health, he or she may experience more loneliness than one who is in excellent health. And finally, does a person’s ethnicity play a role in whether or not he or she experiences loneliness? This is worth exploring as different cultures

approach the aging process differently. Some cultures revere older adults, holding them in a

position of reverence, while others are dismissive of them. In one study, loneliness is a

predictor of disease states among Hispanics, particularly diabetes and hypertension (Tomaka, Thompson, & Palacios, 2006). Also, there is some research that supports that reports of loneliness are increased in older adults with lower income and lower education levels, especially in urban areas (Lopez, Lapena, Sanchez, Continente, Fernandez, 2019). It is important to fill the gaps in urban areas with resources and programs for those living in underprivileged housing areas. The need to study the predictors of loneliness exists so that facilitation of good physical, mental, and cognitive health can be a reality for all seniors, regardless of income level or social status.

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**Application of the PEO Theory**

The Person-Environment-Occupation (PEO) theoretical frame of reference examines how a person interacts with his or her environment and how these interactions intersect with occupations and occupational performance (Kovic, Krohn 2013). Occupations are not necessarily viewed as job duties, but instead as the everyday activities that are meaningful and purposeful to a person. These activities may include personal and self-care tasks, social roles, familial roles, work and leisure tasks, sleep and rest, and spirituality (American Occupational Therapy Association (AOTA), 2014). Harmony is achieved when these components are in balance. Loneliness can disrupt the harmony between the interconnection of a person within his or her environment, which can ultimately impact the performance of occupations. As occupational performance declines, physical, emotional, and cognitive health may suffer. Balance must be restored to improve a person’s overall holistic wellness and function. We consider how this theoretical framework applies to the concept of loneliness when we further explore the aspects of the theory itself. Occupational performance is the act of “doing” something, which could be any

given task at any given time. This enables participation, or “engagement” in everyday life which ultimately contributes to the well-being, health, and quality of life of a person (Christiansen & Baum, 2005). When engagement in everyday life wanes, disengagement contributes to a reduction in social connections which in turn can lead to loneliness and social isolation.

The Person-Environment-Occupation (PEO) theoretical framework suggests that the balance of the person, their environment, and their occupations, or purposeful activities and roles, creates a type of homeostasis (Christiansen & Baum, 2005). The intertwining of these components creates cohesiveness which ultimately identifies a person at a particular moment in time. By examining the implications loneliness has on the physical health of an older adult, it can

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be appreciated that as a person’s health declines, he or she may have limited interaction with his

or her environment. Physical disability can impact a person’s functional mobility and functional performance, thereby limiting their ability to participate in desired activities within their environment, including interactions with social contacts. Impaired physical function directly impacts occupational performance and occupational participation. The same concept applies to psychological function and mental health. An increase in anxiety and depression can reduce a person’s intrinsic motivation to be actively involved in their environment and in occupations. And cognitive health can determine a person’s ability to actively engage in all aspects of purposeful activity, meaningful tasks, and individual roles. When a person is unable to actively engage in socialization activities, be it due to physical, psychological, or cognitive limitations, loneliness and social isolation may be the outcome, thereby resulting in dissonance and discord.

**Application of the Productive Aging Theory**

As adults age, the productive aging domains of low disease probability, physical and cognitive vitality, and social participation serve as a gauge to the aging process. A particular

focus is placed on the interactive relationships that the domains have relative to each other. When one area is impaired, the entire productive aging process is affected. Onset of a disease or disability, and/or a decline in physical or cognitive capacity can inevitably reduce a person’s

social engagement at any age (Rowe and Kahn, 1997). This is known as the Productive Aging

theory. Older adults are already susceptible to a shrinking social environment due to loss of

social roles, retirement, decline of income, and empty nest syndrome (Boz, 2018). Deaths of spouses, friends, and family contribute to the shrinking social environment. Maintaining social participation and leisure engagement throughout the lifespan is important for enhanced well-being and health (Chang, Wray, & Lin, 2014).

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The theory of productive aging can also be applied when looking at the physical,

psychological, and cognitive components of loneliness and social isolation. The domains of low

disease probability, physical and cognitive vitality, and social participation relate to the distinct components of loneliness and social isolation. The physical complications linked to loneliness can lead to disease and a decline in overall physical health. This in turn can lead to an increase in physical impairments and a decline in physical vitality. Loneliness also a risk factor for various

mental illnesses, which may have an impact on proactive self-maintenance of health. Poor

compliance with use of medication and poor health behaviors may in fact increase social isolation as those behaviors can in turn, contribute to a decline in overall physical and mental health. And it is determined that loneliness increases a person’s risk of dementia, which clearly impairs cognitive vitality. Cognitive impairments make social engagement and social participation difficult. Similar to the PEO theoretical framework, the productive aging components of low disease probability, physical and cognitive vitality, and social participation interrelate with each other. When these components are in balance, harmony is achieved. When

harmony is achieved, loneliness and social isolation dissipate.

**Application of the Activity Theory of Aging**

The Activity Theory of aging asserts that seniors are happiest when they remain active and maintain social interactions and social connections (Hocking and Meltzer, 2016). Activities are most effective when they have meaning and purpose to a person (AOTA, 2014). A person is more likely to value a task or activity if he or she is able to identify with it and apply significance to its intention. It is more likely for an older adult to continue with chosen activities and social interactions if he or she finds value and meaning in them. When the interactions lack meaning, the more likely it is that the older adult will withdraw or disconnect. Similarly, if the activities

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available to an older adult are incompatible with his or her likes and dislikes or abilities and

disabilities, the more likely it is that the senior will opt out of participation. This in turn may cause the older adult to feel lonely and it likely will contribute to their disengagement and isolation. Loneliness and social isolation can be averted if thoughtful consideration is regarded when identifying ways to keep seniors engaged and socially connected.

 The Activity Theory applies the familiar concept of harmony. According to this theory, harmony is achieved when there is a balance between a senior’s activities or occupations and their perceived sense of life satisfaction (Hocking & Meltzer, 2016). Many people glean their life satisfaction from their roles. Older adults face significant role changes, sometimes in a condensed period of time. When the older adult, or any person for that matter, does not assume new roles in their place, the risk of loneliness and social isolation increases. For older adults, some roles cannot be replaced therefore, they engage in activities to fill the void left by the lost role. Again, the importance of meaning, value, and purpose of activities and interactions cannot be understated. But equally important is the senior’s capability to engage in activities and social

interactions. Impairments with physical, psychological, or cognitive functions will not only impact the types of activities the senior can perform but also the roles he or she can assume. Careful consideration of all aspects must be made in order to achieve harmony.

**Ethical Considerations**

 The older adult population is considered a vulnerable one regardless if they are lonely or not. Decreased immune systems, declining senses, thinning skin, onset of chronic of chronic diseases, decreased reflexes, malnutrition, dementia, and functional decline all contribute to the vulnerability of an older person and increase their susceptibility to additional problems (Strausbaugh, 2001). Diminishing social circles and role changes directly impact persons of all

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ages, including older adults (Boz, 2018). These changes affect a senior’s socialization because

opportunities to meet new friends and expand social contacts often diminish with advancing age. Older adults who remain socially connected and engaged will have a better chance of having declining components recognized, affording the senior the opportunity to address any pressing concerns in a timely manner. Those seniors who are isolated are less likely to have concerns recognized which can further perpetuate any existing problems.

While a large majority of seniors will not require care, there are those who will. Those older adults who are in need of the most intimate care may require the services of long-term care facilities. In addition to addressing the physical needs of its residents, long-term care facilities must also address their psychological, cognitive, and even social needs as well. In order to accomplish this, regular assessments are performed by the nurses and other staff on both a formal and an informal basis. How the outcomes of the formal and informal assessments are handled rely heavily on health care regulations, in addition to the leadership and administration of the facility. While there are many styles of leadership, it has been recognized that the situational

leadership style has been effective when administrating long-term care facilities (Hasemann, 2004). The premise of this style of leadership is based on the idea that different situations necessitate different kinds of leadership. The idea of “one size fits all” does not apply, and the leader must adapt his or her leadership style to meet the demands of the situation (Northouse, 2016). The circumstances leading each resident to require the services of a long-term care facility are individualistic. The interactions of staff and residents and the relationships formed as a result are also individualistic. As such, each encounter is unique and needs to be handled accordingly. The encounters must be handled ethically, morally, and with compassion. The situational approach affords the leader the authority to identify the climate and culture of his or

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her facility and address accordingly while still complying with all of the established laws and

regulations.

Many older adults are community dwellers and therefore rely on the leadership within their communities to provide for them. This includes their elected and appointed officials, personal medical professionals, and spiritual leaders. It is the responsibility of these leaders to be sensitive to the needs of all members of their community and practice in order to best serve them. When a leader evaluates his or her followers and assesses their needs, as well as the competency of those tasked with carrying out established plans, the desired goals can also be achieved using the situational approach (Northouse, 2016). Leaders need to be cognizant of any biases they have towards older adults, including their personal perceptions on aging. They must ensure that any bias they have does not negatively influence the carrying out of services needed by the older adults of their community. Physicians must fulfill their oath to “do no harm” by addressing loneliness with their all of their patients including their senior ones. As discussed, it is known that loneliness and social isolation are risk factors for a variety of physical, psychological,

emotional, and cognitive impairments and disease processes. As such, older adults are owed the investigation in how to abate loneliness and social isolation in order to promote their holistic wellness. Investigation into such should be no different than the efforts made to manage cardiovascular disease, high blood pressure, diabetes, and stroke. Health professionals, including community health workers, have the moral and ethical responsibility to ensure wellness of all persons entrusted to their care across the lifespan.

**Policy Recommendations**

 Policies are put in place to provide order and structure in an effort to help others. There are ways of applying policies in the health and public sectors to facilitate social connections in an

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effort to combat loneliness, especially for older adults. Health policies can be explored by adding

a component to a senior’s Medicare-required wellness visit with their physician, investigating if an older adult is experiencing subjective loneliness or objective social isolation. Thoughtful interview questions and training in skilled observation can be helpful tools to detect typical markers. Public policies can be put into effect to provide community activies and services to

seniors. Ensuring access to public transportation or providing vouchers for other means of

 community transportation can be helpful in allowing seniors access to these community

services, events, and activities.

Institutional settings already have requirements for resident activities. Residents are encouraged to engage in social events and activities within the institution itself, and occasionally outside in the community. Sing-a-longs, bingo, and craft projects are commonplace. These events provide an opportunity for mental stimulation and social participation. Visiting family and friends are often invited to participate as well. Institutional settings have provided services in the past, training their residents on use of technology, such as using computers and iPads for general

purpose use. A more proactive and interactive training could be introduced and carried out to allow seniors to be more proficient with modern interactive technology such as FaceTime, Skype, Zoom, Google Meet, and the like. This education would promote valued interactions with their social circles outside of the institutional setting, and if provided with their own devices, would allow seniors to engage in social interactions on their timetable and not that of the

institution. Videoconferencing software can facilitate communication with friends and relatives 9Trad, Wharam, & Druss, 2020). Also, providing families and loved ones with a calendar of scheduled events might encourage more integrated participation with the resident and his or her family. Posting pertinent social events on the facility’s website would also broaden the

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invitation.

Measures need to be taken to ensure safe conditions for seniors to engage and participate in community-based services and activities. Social prescribing, video visiting, and telecommunication are some measures that can be put into place for seniors, including those who lack community transportation, or who are physically unable to leave their homes (Trad,

Wharam, Druss, 2020). Safe socialization policies can be formulated to enhance the wellbeing of older adults living in high-crime neighborhoods where older adults often long for company and social integration but are limited by social and physical factors. Some of these factors include living in an environment with dense crime, weak norms of reciprocity, physical decay of

buildings and streets, and scare resources of health care and social services (Portacolone, 2018).

The implementation of occupational therapy services can also be used at a community-based level to promote social participation and leisure engagement for community-dwelling

older adults (Smallfield and Molitor, 2018). Optimizing occupational therapy services for community dwelling older adults requires knowledge of the aging services network to enable

appropriate requests for services and help identify areas for collaboration at a regional or local level. These networks include the United States Department of Health and Human Services, the Administration for Community Living, the Administration on Aging, local Area Agencies on Aging, and municipal services operating on a county, parish, or regional area (Elliot, 2019).

There are simple ways of keeping all seniors connected, whether they be living in an institutional residence or community dwelling. Making arrangements for community flyers and religious communications, like a church bulletin, to be mailed or delivered directly to family,

friends, and neighbors can help increase a sense of social connectiveness. Introducing or encouraging engagement in senior-centered activities offered through aging agencies or outreach

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programs is helpful. And promotion of community-based senior friendly activities, functions,

and services would be of great benefit to all older adults.

**COVID-19 policy considerations**

 With the implementation of emergency policies during the COVID-19 pandemic, most activities in nursing homes and assisted living facilities were altered, if not terminated altogether (Trad, Wharam, & Druss, 2020). What was initially thought to be a short-term hiatus morphed into a prolonged separation from all social connections. Visitation from the outside world didn’t exist in most if not all facilities. And the social activities that were held within the institutions themselves were done so at more than arm’s length. Efforts should be made to find ways to allow visitation and social interactions in a safe manner when these situations occur. Assessment of visitor health can be performed to allow entry into hospitals and nursing facilities. Outdoor visitation, especially during mild weather should be encouraged. Barrier shields can be used indoors and masks can also be worn to prevent infectious transmission while still allowing some sort of socialization and visitation, all in an effort to decrease loneliness. Designated visitation areas can be used to contain common areas in an effort to prevent virus spread. During the COVID-19 pandemic, community centers and senior centers closed their doors during the long months of quarantine and social distancing. For many seniors, these centers provide much needed socialization. They also provide meals and other services older adults need in order to remain dwelling in their communities versus in an institutionalized setting. If the pandemic of 2020 taught us anything, it’s how to be creative and think outside of the box. Hopefully, these new skills can help influence the way we formulate policies to help older adults remain active, engaged, and socially connected with their world.

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**Summary**

 There is significant research that supports that loneliness and social isolation can have

detrimental effects on a person’s physical, psychological, and cognitive health. The lasting and damaging results can lead to significant medical conditions resulting in functional decline, cardiac and cerebrovascular disease, loss of cognitive function, dementia, Alzheimer’s disease, depression, and early death, notably reducing the life span by nearly ten years. The effect that loneliness has on mortality is actually greater than that of obesity and air pollution. With these

significant findings, a better understanding is needed to determine what factors predict loneliness.

 There are some obvious determinates of loneliness in older adults. Deaths of spouses, family, and friends, retirement and role changes, decline in income, impaired mobility and physical decline, moving from family homesteads, empty nest syndrome, and a shrinking social

environment due to various forms of loss are some of the many reasons that older adults experience loneliness. Change is inevitable, but how people, especially older adults, respond to change can play a vital role in how they process and respond to alterations in their lives. The application of the PEO theoretical framework, the theory on productive aging, and the activity theory of aging discuss that harmony is achieved when specific domains are in balance with each other. Balance cannot be achieved unless the predictors of any imbalance are identified, in this case loneliness and social isolation.

 In order to address social isolation and to combat potential functional decline and mortality in older adults, it is necessary to understand what factors might contribute to loneliness. Failure to do so may result in a loss of physical, emotional, and cognitive function as well as a

person’s ability to provide basic care for themselves. This is turn can lead to ultimate dependence

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on others, and eventually on the health care system, creating a societal burden. Loneliness and

social isolation can occur at any time across the lifespan, but do seem quite prevalent in the older

adult population. Life circumstances, role changes, retirement, and generalized decline in physical abilities alter the social connectivity of seniors. The onset of COVID-19 exacerbated the existing concerns of loneliness and social isolation, producing further complications in an already vulnerable population.

Understanding the predictors of loneliness can help us to better understand what factors

contribute to a person’s perceived sense of loss of social connectivity and loss of social

belonging. In understanding what factors predict loneliness, measures can be taken to help diminish this sense of loss and to promote social connectivity in an effort to mitigate social isolation. When indicators and predictors are identified, areas of concern can be specifically targeted for correction. This in turn will help to promote holistic wellness in the older adult

population, thereby reducing morbidity and mortality. Formulation of plans to ease the negative

effects that loneliness and social isolation have on the holistic health and wellness of seniors would be of great benefit. Looking specifically at the Northeastern Pennsylvania region, understanding the predictors of loneliness can facilitate the acquisition of resources to provide for the specific needs of older adults in this geographical area. This is especially important in providing means and access in rural and suburban areas, particularly during times of inclement weather typical to this area. This geographical area has a high volume of older adults, many of whom live in remote areas. Outreach programs to rural areas and centrally located community

centers in suburban areas are positive solutions.

Innovative ideas are needed now more than ever to reach the aging population. In order to

best serve the physical, psychological, and cognitive needs of the senior population,

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revolutionary concepts and innovated ideas can be formulated to resolve senior loneliness and prevent social isolation. Policy changes within the health care system can be implemented to

optimize senior health by targeting loneliness and social isolation. Better screening processes during wellness visits and health exams can identify those who are most at risk. Instituting community programs and access to transportation for older adults, especially those living in rural and suburban areas, can promote socialization and engagement in local communities. Establishing improved visitation and physical connections in nursing facilities will reduce

institutional social isolation. Opportunities can be capitalized upon to educate families and communities on how best to serve the lonely and isolated older adult. Raising awareness to their needs can provide reasonable and attainable solutions to this public health problem, thereby benefiting society as a whole. This is especially important during a time when forced social isolation has been imposed upon the older adult population during the COVID-19 pandemic. If

loneliness and social isolation compromised physical, psychological, and cognitive health and well-being previously, it can only be imagined what impact extended forced isolation in mass will have on the holistic wellness of all people, but most especially older adults. Having a better understanding of the loneliness predictors of older adults can help to improve the overall quality of life of older adults living today in Northeastern Pennsylvania.

***About the Author***

Ann Romanosky is an occupational therapist specializing in adult rehabilitation since 1994. She has worked for Allied Services Integrated Health System in Scranton, PA for the past 25 years, serving in various staff and managerial roles in the rehabilitation hospital. She has worked closely with the adult and geriatric populations for most of her career which has inspired her to research various aspects of loneliness and social isolation. Ann also serves as an adjunct professor in the occupational therapy department at the University of Scranton. She earned her BS in occupational therapy from College Misericordia, her MS in Health Administration from Marywood University, and is currently a doctoral candidate seeking her PhD in Strategic Leadership and Administration also from Marywood University. She lives outside of the Scranton area with her husband, Michael, and their son.

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