Development and Testing of the Mueller Assessment of Transition (MAT): A Tool for Measuring Older Adults' Wellbeing when Transitioning into Assisted Living Facilities

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DEVELOPMENT AND TESTING OF THE MUELLER ASSESSMENT OF TRANSITION (MAT):
A TOOL FOR MEASURING OLDER ADULTS’ WELLBEING WHEN
TRANSITIONING INTO ASSISTED LIVING FACILITIES

A Dissertation
Presented to
the Graduate School of
Clemson University

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy
Parks, Recreation and Tourism Management

by
Kaitlin E. Mueller
May 2022

Accepted by:
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ABSTRACT

Transitions into assisted living facilities (ALFs) may influence older adults’ wellbeing. Positive influences on older adults’ wellbeing are referred to as adjustment strategies, whereas negative influences are called constraints to wellbeing. Theoretical underpinnings for these influences are found in the Hierarchical Leisure Constraints Theory and the Transition Process Framework. Past research indicates a few influences on older adults’ wellbeing, such as family relationships, perceived physical health, and connections to the community. However, no assessment existed to quantify their wellbeing when relocating into an ALF. Therefore, this dissertation details the development and factor structure of the Mueller Assessment of Transition (MAT), a novel assessment to measure older adults’ wellbeing when transitioning into ALFs. Utilizing survey research design, an exploratory factor analysis (EFA) was conducted with 69 older adult participants to analyze the factor structure of the MAT. The findings from the EFA provided a 12-item MAT for a final round of data collection in a nationwide sample of 108 older adult participants in ALFs. Using a confirmatory factor analysis (CFA), the factor structure of the MAT was confirmed for adequate validity and reliability. Lastly, multiple linear regression models were analyzed for relationships between older adults’ wellbeing at time of transition, their past/current health conditions, and their perceived functional abilities. Findings indicated that past/current genitourinary health conditions were predictive of older adults’ wellbeing at time of transition, while wellbeing at time of transition was also predictive of perceived functional abilities. Overall, applications for healthcare practitioners using the MAT with older adults in
ALFs are further detailed, and limitations of the dissertation are presented, including the COVID-19 pandemic as a threat to internal validity. Future research for the MAT includes testing for convergent validity, longitudinal analyses for older adults’ first year living in the ALF, and investigating the MAT with other older adult settings like independent living facilities, adult day programs, and skilled nursing facilities.
DEDICATION

God has created me to do Him some definite service.  
He has committed some work to me which He has not committed to another.  
I have my mission.  

- St. John Henry Newman

To my grandfathers:  
Your words of wisdom about life, writing, and truth inspire me each day.
ACKNOWLEDGEMENTS

At the close of this dissertation, I first need to thank the participants who willingly completed the MAT and other survey questions in this study. Additionally, I am so grateful for the site liaisons across the nation who supported this work despite their own challenges presented by the COVID-19 pandemic.

Next, I want to sincerely thank my committee for their encouragement, support, and mentorship over the past four years of this project. Marieke, your wisdom, optimism, enthusiasm, endless “weeding” of my too-flowery words, and humorous banter during our meetings has made this dissertation so successful. You are indeed the best of the best, and I appreciate your steadfast guidance from my first day at Clemson. You believed in me quite literally when I felt lost: thank you! Brandi, I appreciate your time encouraging me through the data collection process, challenging me to think differently about aspects of the profession, and reminding me everything will work out. I am so blessed to have worked with you on multiple projects over the past years: your wisdom will stay with me. Christy, I cannot thank you enough for your guidance over the past few years on the survey design process, including all the stats. Your willingness to answer my countless questions to help me actually learn (instead of just making it through) has resulted in this finished product. I tell my grad peers you are the “secret sauce” on my committee… and I mean it! Nicole, I am grateful for your wisdom and kind words on this interdisciplinary work, especially your expertise of the older adult population. This project is much stronger thanks to your insights!
In addition to my committee, I want to express my gratitude to my PRTM family who poured into me. I am a stronger teacher, researcher, and mentor because of you all. Shout out to the Hawkins, Brent and Carmen, who influenced me with their tidbits of wisdom, knowledge, and encouragement throughout my program, both in person and over the phone. Also to Kathy, Darby, and Julia at the Rainbow Gang and Ruthie at Clemson Downs: you are some of my biggest cheerleaders.

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Fiat.
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GLOSSARY OF TERMS

Adjustment Strategy: Positive influences used to maintain older adults’ wellbeing when in transition (Mueller et al., 2021a).

Assisted Living Facility (ALF): A residential facility where older adults receive housing and some supportive services (Zimmerman & Sloan, 2007).

Constraint to Wellbeing: Negative influences on older adults’ wellbeing during a transition (Mueller et al., 2021b).

Independent Living Facility (ILF): A residential facility where older adults receive housing and select other services, but not medical services (Zimmerman & Sloan, 2007).

Long-Term Care Facility (LTCF): A residential facility where older adults receive housing and full supportive services, including 24/7 nursing care (Zimmerman & Sloan, 2007).

Transition: The process when older adults are physically, mentally, and emotionally relocating from one housing arrangement to another, either from living in the community into a CCRC or between the various residences of the CCRC (Brandburg et al., 2013).

Wellbeing: The state when older adults have the social, physical, and psychological resources they need (Dodge et al., 2012).
CHAPTER 1: INTRODUCTION

Adults are living longer now than any other time in history due to medical advancements (Colby & Ortman, 2015; J. Lee et al., 2020). The adult population will continue to age so that by 2050 all regions of the world except Africa will have 25% or more of their populations over 60 years of age (Vaupel, 2010). For many years, most adults live in their communities as active contributors to their neighborhoods and spheres of influence. However, living independently in the community often becomes burdensome for older adults who develop chronic illnesses that limits their mobility, cognitive abilities, social supports, and financial resources (Carpentieri et al., 2017). This results in older adults needing more structures, policies, and programs for care and support (Stone & Reinhard, 2007).

Continuum of Care Retirement Communities

Permanent living residencies for older adults often form continuum of care retirement communities (CCRCs) that include independent living facilities (ILFs), assisted living facilities (ALFs), and long term-care facilities (LTCFs) (Fashaw et al., 2020). The buildings of CCRCs are often located on one campus in close proximity to one another, even bridged together through indoor walkways and outdoor gardens (American Association of Retired Persons [AARP], 2019a). Additionally, CCRCs provide numerous services to care for different aspects of older adults’ wellbeing (J. Lee & Severt, 2018). ILFs rely heavily on older adults’ self-care and family support to meet their daily needs since no medical care is provided by staff (Mahoney & Goc, 2009). ALFs provide some medical care but not complete nursing care, unlike LTCFs that do
provide full-time nursing services to their residents (American Association of Retired Persons [AARP], 2019b). LTCFs are intended to care for residents with less functional abilities than those in ALFs (Phillips et al., 2019).

**Assisted Living Facilities**

A common definition of an ALF is “a congregate residential facility that provides or coordinates personal services, 24-hour supervision and assistance (scheduled and unscheduled), activities, and health related services” (Assisted Living Quality Coalition, 1998, p. 2). The primary goals of ALFs are to care for older adults’ changing needs and preferences; maintaining residents’ dignity, autonomy, and independence; and emphasizing family and community involvement (Roberts et al., 2020; Stevenson & Grabowski, 2010). However, transitional care supports and services vary based on the facility because some ALFs accept older adults with more disabling conditions who require more care (Scott & Mayo, 2019; Tracy & DeYoung, 2004).

**Wellbeing during Transition into ALF**

Transitions into ALFs occur when older adults relocate from living in the community or from another building in the CCRC. The transition into ALFs is a major life change for older adults (Bekhet, 2007), and may influence their wellbeing (Saunders & Heliker, 2008; Scott & Mayo, 2019). Wellbeing is defined as the state when older adults have the social, physical, and psychological resources they need (Dodge et al., 2012). Wellbeing is subjective: when older adults have more challenges than resources, their state of wellbeing declines; however, with more resources than challenges, wellbeing increases. Challenges are negative aspects of the move that lessen older adults’
overall wellbeing, while resources are positive aspects of the transition that help older adults cope with their relocation.

**Adjustment Strategies and the Transition Process Framework**

Adjustment strategies may facilitate wellbeing during the transition to ALFs. Adjustment strategies are the positive influences on older adults’ wellbeing that are utilized as resources to cope with the transition (Brandburg, 2007). Adjustment strategies have theoretical foundations within the Transition Process Framework (TPF), which was developed to describe the transition of older adults into LTCFs (Brandburg, 2007). For transitions into ALFs, previous research has broadly explored positive influences on older adults’ wellbeing (Mulry, 2012; Saunders & Heliker, 2008; Tracy & DeYoung, 2004) but only a few studies have explored specific adjustment strategies used to maintain or improve wellbeing for relocating older adults (Saunders & Heliker, 2008; Tompkins et al., 2012; Tracy & DeYoung, 2004). Adjustment strategies used by older adults in transition into ALFs were further applied to older adults relocating into ALFs within the TPF (Mueller et al. 2021a). This qualitative study found both passive and active adjustment strategies improved all aspects of an older adult’s life (Mueller et al., 2021a). Older adults transitioning into ALFs relied on adjustment strategies that aligned with the adjustment component of the TPF (Mueller et al., 2021a).

**Constraints to Wellbeing and Hierarchical Leisure Constraints Theory**

Along with adjustment strategies, transitions into ALFs may negatively influence older adults’ wellbeing (Saunders & Heliker, 2008; Scott & Mayo, 2019). When transitioning into ALFs, these negative influences on older adults’ wellbeing are referred
to as constraints to wellbeing (Mueller et al. 2021b). Constraints to wellbeing have theoretical underpinnings with the Hierarchical Leisure Constraints Theory (HLCT) (Mueller et al. 2021b). This theory is comprised of three categories of constraints to participating in leisure: intrapersonal, interpersonal and structural constraints (Crawford & Godbey, 1987). The HLCT was originally proposed specific to leisure constraints, yet the theory had been proposed to have greater implications to different types of constraints (Godbey et al., 2010).

Prior research about transitions into ALFs described constraints including reduced physical abilities if structures are not in place to maintain older adults’ physical strength (Resnick et al., 2015). Additional constraints on older adults’ wellbeing have been shown as changes in psychological (Barbosa Neves et al., 2019; Smith, 2010; Tracy & DeYoung, 2004) and mental wellbeing (Fields et al., 2012), often occurring from disorientations to the new setting of the ALF. Changing social circles and family roles also add to the constraints on older adults’ wellbeing (Fields et al., 2012; O’Hora & Roberto, 2019a; Saunders & Heliker, 2008). These constraints during transitions also carries risks of older adults developing depression and anxiety (Smith, 2010).

Consequently, there was a need to better understand older adults’ constraints to wellbeing when relocating into ALFs (Jun et al., 2015; McFadden, 2010; Scott & Mayo, 2019; Tracy & DeYoung, 2004). In order to address this need, Mueller et al. (2021b) explored negative influences on older adults’ wellbeing when transitioning into ALFs through a qualitative study. This study found that older adults were experiencing constraints to their wellbeing that included loss of independence from losses in physical and mental health
and/or loss of driving (Mueller et al., 2021b). An additional constraint to older adults’ wellbeing occurred when needing to downsize in space and possessions during the transition into the ALF (Mueller et al., 2021b). Mueller et al. (2021b) showed that these findings applied to the HLCT and all aspects of constraints to wellbeing including physical, mental, emotional, social, and spiritual (Mueller et al., 2021b). This further resulted in the Modified Constraints to Wellbeing model to better understand constraints to wellbeing for older adults transitioning into ALFs (Mueller et al., 2021b).

Summary

Overall, the limited research on older adults’ transition experiences into ALFs, especially in regard to influences on their wellbeing, resulted in Mueller et al. (2021) study. This study found that older adults experienced both adjustment strategies and constraints to wellbeing their transitions into ALFs (Mueller et al., 2021a, Mueller et al., 2021b). Both the TPF and HLCT were applied as theoretical foundations for understanding the constructs of adjustment strategies and constraints to wellbeing (Mueller et al., 2021a, Mueller et al., 2021b). Subsequently, better understanding both the positive and negative aspects of older adults’ transitions will allow for healthcare practitioners to better care for the wellbeing of older adults moving into ALFs (Mueller et al., 2021; Scott & Mayo, 2019). In order to fully understand the impact of transition on older adults’ wellbeing, a standardized assessment tool could be utilized by healthcare professionals to identify specific services and programs to help ease the transitions (Almomani & Bani-Issa, 2017; Mueller et al., 2021). However, currently there is no
standardized assessment that measures older adults’ wellbeing during their transitions into ALFs.

The present study addressed the following specific aims:

Specific Aim 1: To analyze the factor structure of the Mueller Assessment of Transition (MAT).

Specific Aim 2: To establish the psychometric properties of the Mueller Assessment of Transition (MAT).

Specific Aim 3: To use the Mueller Assessment of Transition (MAT) to describe influences on wellbeing in a nationwide sample of older adults who recently transitioned into ALFs.
CHAPTER 2: LITERATURE REVIEW

The population is aging rapidly as the proportion of the world's population over 60 years will nearly double from 12% to 22% between 2015 and 2050 (World Health Organization [WHO], 2018). All countries, including the United States, need to prepare health and social systems for this demographic shift in the aging population (World Health Organization, 2016). Typically as adults age, they find purposeful roles in society while living independently in their communities through engaging in family roles, focused hobbies, and volunteerism (Peila-Shuster, 2011). Unfortunately, some older adults experience the onset of chronic illnesses that undermine their social, physical, and psychological abilities (Carpentieri et al., 2017).

Current statistics show that over half of the United States’ adult population have at least one chronic illness, with one in four adults having two or more (Kang et al., 2020). The average age of onset for chronic illness is 55 years old, resulting in numerous adults living decades with multiple chronic illnesses (Ward et al., 2014). Many older adults with chronic illnesses reside in their communities for years, relying on services and supports to help maintain their independence. Independence often equates to older adults being able to complete their activities of daily living (ADLs) (i.e. bathing, dressing, toileting, and mobility) and instrumental activities of daily living (IADLs) (i.e. transportation, shopping, and yard maintenance) (Phillips et al., 2019). As chronic illnesses progress, however, older adults may find themselves needing more medical and personal support to manage their ADLs and IADLs, causing their transition into a residential facility.
Continuum of Care Retirement Community (CCRC)

Transitions for community-dwelling older adults typically occur when moving into a continuum of care retirement communities (CCRCs) that include independent living facilities (ILFs), assisted living facilities (ALFs) and long term care facilities (LTCFs) (American Association of Retired Persons [AARP], 2019b). Sometimes a hospice facility is also located in the CCRC (Parker, 2020). Older adults usually move through the different facilities of the CCRC, first into ILFs, then progressing into ALFs, then LTCFs and typically ending in hospice care (Green et al., 2020).

CCRCs are relatively newer concepts that developed in the 1970s (Stone & Reinhard, 2007). However, LTCFs (also known as skilled nursing facilities) have been in existence for much longer (Institute of Medicine (US) Committee on Nursing Home Regulation, 1986). Many of the current LTCFs evolved out of institutionalizations for individuals with disabilities and older adults (Stone & Reinhard, 2007). LTCFs are currently held to high, federal and state regulated standards to meet residents’ personal needs and preferences (Fashaw et al., 2020). Over time, LTCFs started to offer varying levels of care, resulting in CCRCs. Services and supports offered to older adults often differ based on the specific facility in the CCRC.

Independent Living Facilities (ILFs)

ILFs are akin to residential apartments located in the CCRC. Older adults in ILFs are more capable of independently caring for themselves, resulting in lower costs to live in ILFs compared to living in ALFs or LTCFs (Mahoney & Goc, 2009). The layout of
ILFs often provide older adults with their own private apartments equipped with full kitchens as well as social, leisure, and spiritual programming (J. Lee & Severt, 2018).

**Long Term Care Facilities (LTCFs)**

For older adults that need assistance with multiple ADLs, living in the LTCF is most appropriate (American Association of Retired Persons [AARP], 2019b). As of 2015, many of the LTCFs are classified as non-profits, with 97% dual certified for Medicare and Medicaid services (Fashaw et al., 2020). Various healthcare and service providers are employed in LTCFs to maintain quality, 24/7 nursing care and additional services like food, housekeeping, and transportation (Loy et al., 2019; Stone & Reinhard, 2007). Services for older adults in LTCFs primarily focus on maintaining functional abilities as well as improving overall wellbeing (Loy et al., 2019; World Health Organization, 2016). As older adults in LTCFs decline in health, hospice will often be consulted for appropriateness of services to plan for end of life (Stone & Reinhard, 2007; World Health Organization, 2016).

**Regulations in LTCFs.** LTCFs are held to high standards by federal and state regulations. For example, federal regulations require all LTCFs to complete the Minimum Data Set (MDS) standardized assessment on all older adults residing in the LTCFs (Center for Medicare and Medicaid Services [CMS], 2019). The items of the MDS give a comprehensive view of older adults’ functional capacities that measure their social, physical, and psychological abilities (Harris-Kojetin, 2014). Overall, LTCFs rely
on federal regulations for monitoring the care needs for their older adults, but ALFs differ widely from LTCFs primarily due to differences in regulations and services provided.

**Assisted Living Facilities (ALFs)**

ALFs are residential facilities for older adults that offer some level of care for older adults’ ADLs, without providing full nursing services (Zimmerman & Sloane, 2007). The United States has approximately 28,900 ALFs with almost 1 million licensed beds, with the average size of an ALF being 33 licensed beds (Schwartz, 2019). Of the four regions in the United States, ALFs are distributed accordingly: 8.6% in the Northeast, 22.6% in the Midwest, 28.0% in the South, and 40.8% in the West (Schwartz, 2019). Older adults who live in ALFs have identified that their primary needs from the ALF included personal care and medication management (Reinhard et al., 2006). However, discrepancies exist in regards to size, hired healthcare staff, services offered, cost and regulations (Zimmerman & Sloane, 2007). Differences in square-footage size and number of beds in ALFs also reflect the number of hired healthcare providers. Healthcare providers like nurses, nursing assistants, healthcare administrators, recreational therapists (RTs), social workers, activities staff, physical therapists (PTs), occupational therapists (OTs), and speech language pathologists (SLPs) provide care in ALFs (American Association of Retired Persons [AARP], 2019a; Stone & Reinhard, 2007). However, smaller ALFs may only hire administrators, nurses, and care assistants (Stone & Reinhard, 2007). Additionally, recreational programming, religious programming, transportation services, and housekeeping services are offered at some ALFs, but not at others (Stone & Reinhard, 2007). The variations in recreation
programming may have positive or negative influences on older adults’ wellbeing based on what is provided by the ALF.

It is also important to acknowledge the variations in cost to live in ALFs. Since ALFs are primarily for-profit organizations, business models drive levels of care and appearances to maintain financial standing (Grabowski et al., 2012). The cost of living in ALFs differs considerably depending on the locality, amenities, and services provided. A 2010 ALF industry survey estimated the average annual cost of ALFs at $37,572 (Grabowski et al., 2012). Although there are ALFs in all states that accept Medicaid Home and Community-Based Services (HCBS) waivers, the waiver only covers a portion of the rent and fees. Since ALFs do not accept Medicare, older adults who can afford to live in ALFs are typically from higher socioeconomic backgrounds (Grabowski et al., 2012; Stone & Reinhard, 2007), creating gaps in services for older adults in lower socioeconomic statuses (Stone & Reinhard, 2007).

**Regulations in ALFs.** Along with variations in services and cost, one of the greatest discrepancies between ALFs is due to the lack of regulations. Since ALFs are a newer concept compared to LTCFs, select states have regulations that vary greatly. New Jersey (1993) and then Maryland (1997) were the first states to give any regulations to ALFs in the 1990s (Stone & Reinhard, 2007). Some states have more specific regulations, like Ohio where older adults in ALFs must transition into LTCFs once they need more than one person to help them transfer positions like from a chair to a bed (The Ohio Assisted Living Association, 2020). Furthermore, in Tennessee older adults who have Foley catheters are not eligible to move into ALFs (Stone & Reinhard, 2007).
Despite these few state regulations, federal regulations are nonexistent for ALFs, including for recreation and health programming, and no standardized assessment is mandated in ALFs to assess older adults’ care, abilities, or wellbeing (Zimmerman & Sloane, 2007). Overall, the lack of regulations, and other variations, have created questions about older adults’ experiences in ALFs, including when transitioning into the facility (Zimmerman & Sloane, 2007).

Transitions for Older Adults

The transition process occurs when older adults relocate from their home into residential facilities, like ALFs. Lee et al. (2013) describes the transition process “occurring as a result of change in an older adult’s life, lasting until adjustment occurs, and resulting in fundamental changes to an individual’s role or identity” (p. 48). Current literature documents older adults’ specific reasons for their transitions into ALFs. First, older adults often transition into ALFs after experiencing dramatic decreases in their physical or mental health (Resnick et al., 2015; Tracy & DeYoung, 2004). Many healthcare professionals refer to this dramatic change in older adults’ physical or mental functioning as a medical crisis (Porter, 2011). Secondly, family members that are not able to provide care, or financially hire assistance, for the advancing needs of their older adults typically result in older adults’ transitions (Phillips et al., 2019; Tompkins et al., 2012). Additionally, research has also shown that older adults who are recently widowed are twice as likely to self-isolate and decrease self-care management after the passing of their spouse, leading to a higher likelihood of transition into ALFs (Callahan et al., 2015;
Lee, Min, & Chi, 2018). All these reasons for transition may influence older adults’ wellbeing when relocating into ALFs.

**Wellbeing for Older Adults**

Traditionally, wellbeing for older adults has been conceptualized in a variety of ways including feelings of happiness, flourishing, and euphoria (Seligman, 2011). However, these past definitions fail to surmise the physical, mental, social, emotional, and spiritual aspects that contribute to the resources (or lack of resources) that influence older adults’ wellbeing. Wellbeing is better defined as a state when older adults possess the social, physical, and psychological resources that they need (Dodge et al., 2012). When older adults have their needed resources, they often feel empowered to use those resources to overcome challenges. Older adults with more resources than challenges, often experience increases in their wellbeing.

Research has shown that older adults have defined wellbeing as their abilities to continue what they have always done throughout their lifetimes (Bowling, 2011) and in relation to their level of mobility, so that declining mobility was perceived to negatively influence their wellbeing (Nordbakke & Schwanen, 2014). Older adults further identified wellbeing as a lack of mental health diagnoses, especially depression, so to better maintain their wellbeing into later years (Allen, 2008). Expanding from solely conceptualizing wellbeing, older adults have identified positive and negative influences on their wellbeing when transitioning into ALFs.
Adjustment Strategies and the Transition Process Framework

When transitioning into ALFs, older adults utilize positive, adjustment strategies as resources to ease their relocations (Brandburg, 2007). A strategy is defined as a plan of action to achieve an overall aim, in this case maintaining older adults’ wellbeing when in transition (Brandburg et al., 2013). By implementing adjustment strategies as resources in their transition process, older adults may better cope with the move into residential facilities like LTCFs or ALFs.

Adjustment have been previously studied to understand older adults transitioning into LTCFs (cf. Brandburg, Symes, Mastel-Smith, Hersch, & Walsh, 2013; Brownie, Horstmanshof, & Garbutt, 2014; Kokonya & Fitzsimons, 2018; Sorbye, Sverdrup, & Pay, 2018). Prior research showed that older adults who used positive psychology-based strategies such as acceptance, reframing, and positive evaluations experienced more successful transitions into LTCFs (Gill & Morgan, 2011). Using the routines of day-to-day living activities, older adults also used feelings of resilience as a coping strategy to adjust to their transition into LTCFs (Brandburg et al., 2013). Additionally, older adults who “tell their stories” to maintain their personal identity felt more at home in the transition process into the LTCF (Cooney, 2012). Although these strategies were shown to assist older adults transitioning into LTCFs, it was unclear if these same strategies are being implemented by older adults who transition into ALFs.

When transitioning into ALFs, prior literature examined older adults’ broad experiences (Mulry, 2012; Saunders & Heliker, 2008; Tracy & DeYoung, 2004) but little has been studied about specific adjustment strategies to cope with the transition. Fields et
al. (2012) discussed roles for social workers within older adults’ transitions into ALFs on the Medicaid Assisted Living Waiver program. Gaps in the literature were discovered between what ALF administrators believe is important to resident transitions and what is actually occurring in the ALF. This study further identified some positive aspects from older adults’ transitions into ALFs including finding new volunteer opportunities, making new friends, and feeling cared for by staff (Fields et al., 2012). Since this study primarily addressed roles of social workers in assisting older adults in transition, questions still exist if findings can be applied to other healthcare professionals.

Scott and Mayo (2019) studied the roles of nurse practitioners in older adults’ transitions into ALFs using a phenomenological approach to explore how 17 older women experienced their relocations. Three major themes emerged from the interviews: preplanning, executing, and adjusting to the transition. Findings further suggest that older adults with sensory, emotional, physical, or cognitive problems will need more supportive strategies to assist with their adjustment in the ALFs (Scott & Mayo, 2019). Implications are discussed for nurse practitioners on coordinating interdisciplinary approaches to foster successful transitions for older adults into ALFs, including educating staff on recognizing signs of poor adjustment and listening to family concerns about their older adults’ transition experiences.

Increasing communication with family during the transition process also assisted older adults in coping with their transition into ALFs (O’Hora & Roberto, 2019b). This study explored aspects of older adults’ lives before and after transitions into ALFs as informed by an intervention program called the family life review (FLR) (O’Hora &
Roberto, 2019b). The FLR used three techniques (introduction, validation, and consolidation) to encourage open and mutual dialogue between family members and the older adults transitioning into ALFs, and was said to be an adaptable intervention to assist older adults and their family during the transition (O’Hora & Roberto, 2019b). The outcome of the FLR intervention encouraged open dialogue between older adults and family members but did not address further adjustment strategies to help with older adults’ transition into ALFs.

Occupational performance measures for general health during older adults’ transitions also examined older adults’ perspectives during transitions into ALFs (Mulry, 2012). Mulry (2012) utilized the Canadian Occupational Performance Measure (COPM), RAND 36-Item Health Survey (RAND 36), and a semi-structured interview for data collection to measure older adults’ role performance and satisfaction during their transitions into ALFs. The results showed that occupational integrity, choice, satisfaction, and role maintenance may be related to more successful transitions for older adults, suggesting a role for OTs in facilitating residents’ adjustments in ALFs. This study, however, did not include specific adjustment strategies used by older adults in transition into ALFs.

These select studies to identify specific adjustment strategies resulted in the need for the Mueller et al.’s (2021b) research. This pilot study explored older adults’ transitions into ALFs to identify specific adjustment strategies that may have helped them cope when relocating. Eight findings were identified as active or passive adjustment strategies for older adults’ transitions in the pilot study (Mueller et al., 2021b). Active
strategies were intentionally conducted by older adults to cope with living in the ALF, whereas passive strategies were not intentional actions, but aspects that happened to support older adults as a result of living in the ALF (Brandburg et al., 2013). The five active strategies identified were: importance of health promoting activities, encompassing both promoting physical health and promoting mental health; connections to the outside world through both community outings and community visitors; placing possessions; finding a new routine; and engaging in spiritual practices. Three passive strategies were also reported: peer support, staff support, and prior familiarity with the ALF. Prior familiarity indicated that older adults with more awareness of the ALF before transitioning used that as an adjustment strategy during their eventual move into the ALF. Four novel adjustment strategies emerged from this study including the importance of physical health promotion, community outings, engaging in spiritual practice, and prior familiarity with the ALF (Mueller et al., 2021a).

Older adults’ adjustment strategies have theoretical foundations within the Transition Process Framework (TPF) (Mueller et al., 2021a). This framework was created by Brandburg in 2007 to help older adults when transitioning into LTCFs. An integrated literature review of the transition process into LTCFs resulted in variables being synthesized into the TPF (Brandburg, 2007). There are four components to the TPF: initial reaction, transitional influences, adjustment, and acceptance (viewed as either maladaptive or adaptive) (Brandburg, 2007). Although originally proposed for LTCFs, this framework was applied to ALFs and reported that adjustment strategies used by older
adults in a transition into ALFs could apply to all the components of the TPF, especially adjustment. (Mueller et al., 2021a). See Figure 1.

**Figure 1.** Adjustment Strategies for the Transition Process Framework (Mueller et al. 2021a)

**Constraints to Wellbeing and Hierarchical Leisure Constraints Theory**

In addition to adjustment strategies, prior research identified that older adults have negative transition experiences that decrease their wellbeing (Lee et al., 2013). In this dissertation, negative influences on wellbeing are referred to as constraints to wellbeing. The term constraint is defined as a barrier to preferences and participation (Crawford & Godbey, 1987).

Constraints to older adults’ wellbeing have been examined for transitions into LTCFs. Some constraints to older adults’ wellbeing were associated declines in physical functioning (Lee et al., 2013; Rockwood et al., 2014), cognitive abilities (Porter, 2011;
Sands et al., 2008), and the change of physical environment (Porter, 2011; Runte, 2018). Many older adults have spent many years in their homes in the community, and therefore the LTCF may “not feel like home” during their transition processes, further decreasing their overall wellbeing (Gill & Morgan, 2011; Lee et al., 2013; Robison et al., 2012; Sorbye et al., 2018). Older adults transitioning into LTCFs also experienced perceived loss of independence (Gill & Morgan, 2011; Lee et al., 2013; Porter, 2011; Robison et al., 2012; Sorbye et al., 2018) and unwanted changes in social relationships with family and friends (Sorbye et al., 2018). The loss of independence and unwanted changes in relationships were shown to constrain older adults’ wellbeing (Sorbye et al., 2018). Although these constraints to wellbeing associated with transitions into LTCFs have been previously studied, less research is available on constraints to older adults’ wellbeing associated with transitions into ALFs.

Prior research on transitions into ALFs, though fewer than LTCFs, have identified some constraints to older adults’ wellbeing based on their available and utilized resources (Fields et al., 2012; Saunders & Heliker, 2008; Scott & Mayo, 2019; Tracy & DeYoung, 2004). Scott and Mayo (2019) reported that older adults moving into the ALF experienced declines in physical and mental health that further constrained their wellbeing (Scott & Mayo, 2019). Although individuals in ALFs are typically less functionally impaired than those in LTCF, residents in ALFs engage in less physical activity and experience more rapid physical decline after a transition, compared to their peers in LTCFs (Resnick et al., 2015). Scott and Mayo (2019) propose implications for nurse practitioners to lead interdisciplinary interventions to yield more successful older
adult transitions into ALFs such as staff education sessions, stronger family communication, and faster mental health diagnoses for depression and anxiety.

Additional constraints to older adults’ mental wellbeing were reported for older adults transitioning into ALFs (Fields et al., 2012). This research explored key aspects of older adults’ transitions into ALFs, finding that poor mental health was indicative of less successful transitions (Fields et al., 2012). Other negative influences on older adults’ wellbeing were identified as older adults’ poor communication abilities to express their needs, physical functioning limitations, and low self-confidence in ability to adapt to a new situations (Fields et al., 2012). Since social workers provide preadmission education to older adults and family members before transitions into ALFs, Fields et al. (2012) suggest that social workers may contribute to more positive transitions for older adults into ALFs.

Tracy and DeYoung (2004) implemented a qualitative study to understand the effects of relocating to ALFs on a sample of older adults. Findings showed that older adults’ experienced negative influences on their psychosocial wellbeing during their transition, especially based on their perceived independence in the ALF. If older adults alleged that their independence was limited after relocating to the ALF, constraints to their psychosocial wellbeing resulted (Tracy & DeYoung, 2004). Unwanted changes in older adults’ family roles and social relationships were also shown to constrain older adults’ psychosocial wellbeing when relocating into ALFs (O’Hora & Roberto, 2019a; Tracy & DeYoung, 2004).
Lastly, Saunders and Heliker (2008) used a qualitative study to explore the expectation and experiences of five, newly admitted older adults into an ALF. Results indicated that becoming dependent and needing to create a new community led to older adults experiencing physical, mental, and psychosocial constraints to their wellbeing during their relocations into ALFs (Saunders & Heliker, 2008). In particular, needing to create a new community within the ALF placed considerable psychosocial constraints to older adults’ wellbeing when moving into the ALF (Saunders & Heliker, 2008). All of these studies found transitions into ALFs placed constraints on older adults’ wellbeing and indicated that further research was warranted.

The constraints to wellbeing during the transition process in ALFs has strong theoretical backing within the categories in the Hierarchical Leisure Constraints Theory (HLCT) (Crawford & Godbey, 1987). This theory is comprised of three categories of constraints to participating in leisure: intrapersonal, interpersonal and structural constraints (Crawford & Godbey, 1987). Intrapersonal constraints are individual factors that impede on leisure participation (i.e. ability level, personality needs, stress, depression, prior knowledge, and supposed attitudes). Interpersonal constraints are factors that impact social relationships. Structural constraints are factors that intrude between leisure preferences and participation (i.e. life stage, financial resources, scheduling availability, season, and climate) (Crawford & Godbey, 1987). For example, the intrapersonal, interpersonal, and structural constraints may be exemplified through the loss of a spouse, which not only takes away an older adults’ companion (interpersonal constraint), but may also have implications for transportation and financial support for
activities (structural constraints) and for the sudden need to overcome introverted tendencies that were heretofore covered by the spouse’s boldness (intrapersonal constraint) (Kleiber et al., 2008).

Figure 2. Hierarchical Leisure Constraints Theory (Crawford et al., 1991)

In the HLCT, constraints are often regarded as “necessary evils” to be managed as older adults take bad with the good, sometimes using strategies for negotiation to overcome those constraints (MacCosham, 2017). However, the primary function of the HLCT is to provide context for why leisure engagement is not happening, as opposed to focusing on overcoming constraints (Crawford et al., 1991). Focusing on constraints to leisure engagement through the HLCT is helpful when understanding the overall transition process for older adults.

No research has addressed constraints to older adults relocating using the HLCT. Prior research has examined older adults in the context of the HLCT (Adams et al., 2019; Kazeminia et al., 2015; Meisner et al., 2019; Yamada & Heo, 2016; Zhou et al., 2020), but not with those in transition into ALFs. The studies focused on leisure constraints for rural, community-dwelling older adults (Meisner et al., 2019), specifically about their constraints to physical activity leisure like yoga, Tai Chi, weight training, and walking
Leisure constraints were also studied related to older adults’ travel experiences and preferences (Kazeminia et al., 2015). However, there is a dearth of research in addressing constraints in general for older adults relocating into residential facilities like ALFs and LTCFs.

The lack of research on transitions into ALFs resulted in a recent investigation into constraints to older adults’ wellbeing when moving into ALFs (Mueller et al., 2021b). This pilot study was conducted through individual, face-to-face, semi-structured interviews to comprehensively explore older adults’ wellbeing when in transition into an ALF. The results of this study identified constraints to wellbeing with two central findings. These central findings stemmed from loss of physical and mental health which led to loss of independence. Additionally, loss of driving and downsizing in space and possessions were identified as constraints. No previous study had associated loss of driving as a constraint to wellbeing in the transition process into an ALF; therefore, this was a novel finding (Mueller et al., 2021a, b). These findings allowed for more broad applications of constraints to be made to the HLCT that resulted in the Modified Constraints to Wellbeing Model.

**Modified Constraints to Wellbeing Model.** The HLCT has been more broadly applied to cover all aspects of constraints (physical, mental, emotional, social, and spiritual), not just leisure (Godbey et al., 2010). Mueller et al. (2021b) found connections between the HLCT and constraints to wellbeing specific to leisure, but also greater implications for all aspects of older adults’ wellbeing when moving into ALFs.
Therefore, Modified Constraints to Wellbeing Model was created to better understand the constraints to wellbeing influencing older adults while transitioning into ALFs (Mueller et al., 2021b). This model consists of two levels of older adults’ constraints to wellbeing. The first level is when older adults experience intrapersonal and/or structural constraints. Intrapersonal constraints refer to loss of independence and structural constraints refers to downsizing in space and possessions in their ALF during the transition. The second level of this model is interpersonal constraints which refers to changes social relationships that then leads to unwanted changes in leisure pursuits. The model suggests that if older adults experience intrapersonal and/or structural constraints, further changes in relationships (as interpersonal constraints) may occur through unwanted changes in leisure preferences. For example, if an older adult has decreased in their physical and mental ability to knit after having a stroke, their social relationships may change from no longer attending their knitting group, further decreasing their leisure activity of knitting. See Figure 3.

![Modified Constraints to Wellbeing Model](image)

Figure 3. Modified Constraints to Wellbeing Model (Mueller et al. 2021b)
A Contemporary Look at Transitions into ALFs

Both the HLCT and the TPF are theoretical foundations for understanding constraints to wellbeing and adjustment strategies for older adults relocating into ALFs (Mueller et al., 2021a, b). Figure 4 shows how the findings of the Mueller et al (2021 a, b) study positively (adjustment strategies) or negative (constraints) influence older adults’ wellbeing based on their available resources during their transition. Collectively, the above work has provided significant contributions when understanding older adults’ adjustment strategies and constraints to wellbeing during their transitions into ALFs. This leads to the next step of developing an assessment to measure constraints to wellbeing and adjustment strategies experienced by older adults in their transitions into ALFs.

![Figure 4. Constructs of Adjustment Strategies and Constraints to Wellbeing](image)

**Need for Standardized Assessment**

An appropriate method to measure constructs like adjustment strategies and constraints to wellbeing is through a standardized assessment. Just as a salivary test can
determine a positive COVID-19 test result, standardized assessments can assist healthcare professionals determine health indicators for older adults in transition (Almomani & Bani-Issa, 2017; Bowen, Rowe, Ersek, Ibrahim & Shea, 2017). A standardized assessment is defined as an empirically developed evaluation tool with established statistical reliability and validity (Tabachnick & Fidell, 2013). Current research is limited for using standardized assessments to measure older adults’ wellbeing during transition into ALFs. In the past, some studies used older adults’ medical records to assess transition factors, without using a standardized assessment (Bellantonio et al., 2008; Gallo et al., 2020). Assessments were also used to measure physical and mental functional abilities during transition from ALFs to hospitals (Anderson & Tom, 2005) or to measure older adults’ abilities when living in ALFs (Bowen, Rowe, Ersek, Ibrahim & Shea, 2017), but not for older adults transitioning into ALFs. An additional assessment measured older adults’ adjustment to an ALF but only in regard to fluctuations in their depressive symptoms (Rioux, 2003).

However, no standardized assessment quantifies the constructs that influence older adults’ transitions into ALFs. This standardized assessment could be implemented by healthcare professionals to identify the specific services and supports needed during their transition. The focus of this study, therefore, was to test the Mueller Assessment of Transition (MAT), a short, self-administered instrument to measure constraints to wellbeing and adjustment strategies experienced by older adults in their transition processes into ALFs.
CHAPTER 3: METHODS

Design of the Study

This study used a descriptive, survey research design to identify and measure older adults’ wellbeing when transitioning into ALFs. Survey research is a preferred means for social researchers to collect data for describing a population too large to observe directly (Babbie, 2008). Before this dissertation, no standardized assessment existed to identify and measure older adults’ constraints to wellbeing or adjustment strategies when in transition into ALFs (see Figure 5: Research Gap). Therefore, the Mueller Assessment of Transition (MAT) is a standardized assessment that collects quantitative data and encompasses two constructs: constraints to wellbeing and adjustment strategies that influence older adults’ wellbeing. A pilot study was the first step in establishing the MAT, followed by two distinct rounds of data collection.

Figure 5. Research Gap
Pilot Study

In the initial phase of developing the MAT, a pilot study was conducted. This qualitative study explored influences on older adults’ wellbeing when transitioning into an ALF and was conducted in Summer 2019. Fourteen participants at an ALF in the rural, southeastern U.S. participated in individual, face-to-face, semi-structured interviews. The results of this study identified eight active or passive adjustment strategies for the transition process. The five active strategies identified were: importance of health promoting activities (subthemes: promoting physical health and promoting mental health), connections to the outside world (subthemes: community outings and community visitors), placing possessions, finding a new routine, and engaging in spiritual practices. Three passive strategies were identified: peer support, staff support, and prior familiarity with the ALF (Mueller et al., 2021a).

In addition to adjustment strategies, negative constraints to wellbeing were also identified during older adults’ transitions into ALFs. Two central findings for constraints to wellbeing were revealed as the loss of independence (subthemes include: loss of physical and mental health and loss of driving) and downsizing in space and possessions (Mueller et al., 2021a, b).

Following the pilot study, the dissertation was comprised of three aims that are divided into two distinct rounds of data collection. Aim 1 included the initial analyses on the MAT in a smaller sample, and the second and third aims are described together as they utilize a larger, nationwide sample. The aims are detailed individually in the subsequent sections.
Specific Aim 1

To analyze the factor structure of the Mueller Assessment of Transition (MAT).

Site Liaisons

The primary investigator (PI) of this study, a recreational therapist, recruited site liaisons and managed the distribution of the questionnaires to eligible participants. For this round of data collection, the PI used convenience and snowball sampling of site liaisons working in ALFs to participate in questionnaire distribution. Convenience and snowball sampling were deemed appropriate as a representative sample is not needed for pilot data analyses (Fields, 2018). The PI recruited site liaisons through social media platforms, emails, phone calls, flyer handouts, and word of mouth. Criterion for site liaisons included (1) being an employee of an ALF for at least 20 hours a week; (2) residing in the U.S.; (3) holding one of the following roles at the ALF: nurse, recreational therapist, occupational therapy, physical therapist, occupational therapy assistant, physical therapy assistant, social worker/caseworker, healthcare administrator, activities director, or activities assistant; and (4) committed to receiving training about how to implement the assessments with eligible participants.

The site liaisons were trained by the PI on how to administer the questionnaire through a 15-minute phone or video call (i.e., Zoom). The following topics were described in detail during the training: purpose of the questionnaire, inclusion/exclusion requirements of participants, details about each item of the MAT, distributing and collecting questionnaires, sending completed questionnaires to the PI, and proper
elimination of completed questionnaires. See Appendix A for Specific Aim 1 site liaison training information.

Participants

Site liaisons helped recruit participants to complete the questionnaires. The target population to complete the questionnaires were older adult residents of ALFs who meet the study criteria. See Table 1 for inclusion and exclusion criteria.

<table>
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<th>Inclusion criteria:</th>
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<tr>
<td>• Reside in ALF</td>
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<td>• Moved into ALF after March 2018</td>
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<tr>
<td>• Scored a 4 or higher on the cognitive Six Item Screener (Callahan et al., 2001)</td>
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<td>• English reading proficiency</td>
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<th>Exclusion criteria:</th>
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<tr>
<td>• Residents on ventilators that cannot provide written communication</td>
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<tr>
<td>• Residents who transitioned to end-of-life care</td>
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<td>• Diagnosis of moderate to severe dementia</td>
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**Sample Size Justification.** For this round of data collection, convenience and snowball sampling was used in order to establish baseline psychometric properties of the MAT (Artino et al., 2014). The target sample for this data round for Aim 1 was 60 participants to complete the MAT, deemed appropriate by a 3:1 N:p ratio (where N refers to the number of participants and p refers to the number of items) to perform an exploratory factor analysis (EFA) (de Winter et al., 2009; Hair et al., 1979; Williams et al., 2012).
Data Collection

Demographic information were collected, including date of move to ALF, age, sex, educational background, military background and years of service, number of times previously moved, and primary reason of moving into the ALF. See Appendix B for Specific Aim 1 demographic questions. All demographic questions were closed-ended, except for the “primary reason for moving into the ALF” in which participants wrote their response.

MAT Scale Development. The themes that emerged from the pilot study were used to define two main constructs that influence older adults’ wellbeing when transitioning into ALFs: constraints to wellbeing and adjustment strategies. Multiple items were written with focus on indicator homogeneity so that wording was familiar to the older adult population (Little et al., 1999). Next, experts in the older adult and therapy fields (n=4) were provided with definitions of the constructs and reviewed all MAT items (Artino et al., 2014). After the expert review, graduate students (n=5) participated in a Q-sort process to assign the individual items to either of the two constructs (constraints to wellbeing or adjustment strategies) based on the closest conceptual relationship (Nahm et al., 2002). The results of the expert review and Q sort processes allowed the research team to choose the most effective items based on desirable measurement quality and high face validity (Byrne, 2013). Lastly, a group of older adults (n=5) tested the assessment to give feedback on overall clarity of the directions and the wording of the items.

The most effective items were then compiled into a set of closed-ended questions for the MAT that included 10 constraints items and 10 adjustment strategies items for a
total of 20 items. Each item starts with the prompt “As you transitioned into the ALF, you experienced…” and ends with a factor that influences participants’ wellbeing. For each item, the participants were asked to identify how well they agree with the statement on a seven-point Likert scale from 1=strongly disagree to 7=strongly agree. A seven-point Likert scale was selected to align with current recommendations in scale development by attending to issues of scale sensitivity, resulting variance, questionnaire clarity, response efficiency, and respondent burden (DeVellis, 2017; Little et al., 1999; Noar, 2003).

Site liaisons distributed paper copies of the questionnaires to eligible residents along with a writing instrument (i.e., pen or pencil). Participants wrote questionnaire answers on the paper and site liaisons collected them when completed. Site liaisons were discouraged from assisting participants in completing the questionnaire by reading questions aloud (i.e., interview style). However, site liaisons marked a participant’s answers if the participant was unable to write.

**Procedures**

The PI recruited site liaisons and completed training on distributing the questionnaires. The PI either (1) emailed electronic copies, (2) dropped off physical copies, or (3) mailed physical copies of the MAT to site liaisons. If emailed electronic copies, site liaisons then printed copies of the questionnaire that included informed consent forms, demographic questions, and MAT items. Site liaisons assessed the cognitive recall abilities of eligible participants with the Six Item Screener (SIS; described below) less than one week before distributing the MAT. This parameter of less than one week to complete the SIS before completing a questionnaire was chosen to give
site liaisons flexibility, but still ensuring participant’s cognition was recently screened soon before completing a questionnaire. See Appendix C for SIS screener. An informed consent form was given to eligible participants before distributing the questionnaire. See Appendix D for informed consent forms. If a participant consented to be part of the study, the site liaison then distributed the questionnaire for participants to handwrite answers. See Appendix E for Specific Aim 1 MAT items. Site liaisons returned the questionnaires to the PI by (1) scanning and emailing electronic copies, (2) the PI picked up physical copies, or (3) mailing physical copies back to PI. The PI input questionnaire responses into Qualtrics for organization before analysis. Codes were created to deidentify participants.

**Analysis Plan for Aim 1**

Data were analyzed using SPSS version 27 (IBM Corp, 2020). Once data were cleaned, descriptive statistics were computed for means, standard deviations, and histograms. The data was prepared for an exploratory factor analysis (EFA) by examining the correlation matrix of the measured variables using Bartlett’s test and Kaiser-Meier-Olkin Measure of Sampling Adequacy (KMO MSA) (Dziuban & Shirkey, 1974). Variables that had a value of <0.30 with other variables indicate no significant correlation, so those variables were considered for deletion (Dziuban & Shirkey, 1974). Tests of multicollinearity were examined through the determinant of the correlation matrix for a threshold of 0.000001 as a means of showing collinearity (Field, 2018). The correlation matrix held true and was analyzed to identify number of factors that account of the correlations among the variables using both a scree test and a parallel analysis
(Pituch & Stevens, 2016). Lastly, the identified factors were named and described by performing an oblique rotation and interpreting the factor loadings. Factors were named once they hit the minimum threshold of 0.30 (Pituch & Stevens, 2016). Items that did not perform well were consequently deleted from the MAT for final round of data collection in Aims 2 and 3.

To test reliability of the data, internal consistency was examined using inter-item correlations, item-total correlations, Cronbach’s alpha, and the average inter-item correlations on established factors. Cronbach’s alpha coefficients (0.70 or higher for acceptance) were calculated to examine internal consistency to show the extent to which items in the assessment correlate with one another (Tabachnick & Fidell, 2013).

**Specific Aim 2 and Specific Aim 3**

**Aim 2: To establish the psychometric properties of the Mueller Assessment of Transition (MAT).**

**Aim 3: To use the Mueller Assessment of Transition (MAT) to describe influences on wellbeing in a nationwide sample of older adults who recently transitioned into ALFs.**

Based on the results of the EFA for Aim 1, MAT items were eliminated or modified before the start of Aims 2 and 3. The revised and finalized MAT was then distributed across the four regions of the United States (Northeast, Midwest, West, South) to eligible participants through site liaisons. Additional demographic questions were added to this round of data collection to collect further information about participants’
previous living residence, identified race/ethnic background, and military veteran history, and spouse’s military veteran history.

**Site Liaisons**

The PI recruited site liaisons through purposive and snowball sampling to distribute the questionnaires through phone calls, emails, social media platforms, flyer handouts, and word of mouth at conferences. Site liaisons were recruited across the four regions of the U.S. (Northeast, South, Midwest, and West) to ensure nationwide representation. Criterion for site liaisons were consistent with Aim 1 and included (1) being an employee of an ALF for at least 20 hours per week; (2) residing in the U.S.; and (3) having one of the following roles at the ALF: nurse, RT, OT, PT, occupational therapy assistant, physical therapy assistant, social worker/caseworker, healthcare administrator, activities director, or activities assistant, (4) ability to attend training on how to distribute questionnaire.

The site liaisons were trained by the PI on how to administer the questionnaire through a 15-minute phone or video call (i.e., Zoom). This training included the purpose of the questionnaire, participants’ inclusion/exclusion requirements, details about each item, training to use participant invitation protocol and fidelity checklist, distributing and collecting questionnaires, sending completed questionnaires to PI, and the questionnaire elimination process. See Appendix F for Specific Aim 2 & 3 site liaison training information. See Appendix G for site liaison’s participant invitation protocol and fidelity checklist. The PI further collected a profile of the ALF site itself from the site liaison to
ensure that ALF sites were consistent in size, staffing, and programming. See Appendix H for ALF profile questions.

**Participants**

Older adults living in ALFs in the four regions of the U.S. completed the self-administered questionnaires. Participants completing the questionnaires were older adult residents of the ALFs who meet the study criteria, consistent with Aim 1. See Table 1.

**Table 1. Participant Inclusion and Exclusion Criteria**

<table>
<thead>
<tr>
<th>Inclusion criteria:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Reside in ALF</td>
</tr>
<tr>
<td>• Moved into ALF after March 2018</td>
</tr>
<tr>
<td>• Score a 4 or higher on the cognitive Six Item Screener (Callahan et al., 2001)</td>
</tr>
<tr>
<td>• English reading proficiency</td>
</tr>
<tr>
<td>Exclusion criteria:</td>
</tr>
<tr>
<td>• Residents on ventilators that cannot provide written communication</td>
</tr>
<tr>
<td>• Residents who transitioned to end-of-life care</td>
</tr>
<tr>
<td>• Diagnosis of moderate to severe dementia</td>
</tr>
</tbody>
</table>

**Sample Size Justification.** For Aims 2 and 3, older adults living in ALFs were the desired population (Tabachnick & Fidell, 2013). The targeted sample size was 100 participants across the four regions of the United States to complete the questionnaire in order to have sufficient data to perform a confirmatory factor analysis (CFA) (Artino et al., 2014; Harrington, 2009). The rule of thumb is generally at least 100 participants in a sample to conduct a CFA (Artino et al., 2014). In order to ensure representativeness of the population of older adults transitioning into ALFs, the following number of participants were targeted to align with the percentages of ALF residents in the four regions of the United States: 9 in the Northeast, 23 in the Midwest, 28 in the South,
41 in the West (Schwartz, 2019). New ALF sites were used for Specific Aims 2 and 3, so that ALF sites that were used in data collection for Specific aim 1 were not repeated.

**Data Collection**

The MAT for Aims 2 and 3 was shortened to 12-items as a result of the EFA performed in Aim 1. Demographic information was also collected, and included date of move to the ALF, sex, educational background, age, location where moved from, racial identification, military background and years of service, number of times previously moved, and current/past health conditions. All demographic questions were closed-ended. Participants’ perceived functional abilities were assessed using the Stanford Health Assessment Questionnaire Disability Index (HAQ-DI) as a valid and reliable, self-administered tool (Fries et al., 1982). Participants were asked to think back to the last week when answering HAQ-DI questions about their perceived functional abilities. See Appendix I for Specific aims 2 & 3 demographic information, and Appendix J for the HAQ-DI.

**Procedures**

First, the PI recruited site liaisons from across the four regions of the U.S. and site liaisons completed training on distributing the questionnaires and collect ALF site profile. The PI either (1) emailed electronic copies, (2) dropped off physical copies, or (3) mailed physical copies of the questionnaires to site liaisons. If emailed electronic copies, site liaisons printed the questionnaires including the informed consent forms, demographic questions, and MAT items. Site liaisons assessed cognitive recall abilities of eligible participants with the SIS screener less than one week before distributing the
questionnaires. Less than one week was chosen as a parameter to give site liaisons flexibility to complete the SIS, while still ensuring participant’s cognition was screened soon before completing a questionnaire. Site liaisons used invitation protocol and fidelity checklists to invite eligible participants to complete the questionnaires. Participants reviewed informed consent forms before agreeing to participate in the study. If they consented to participate, participants were distributed the questionnaire from site liaisons. Participants then handwrote their answers on the revised and finalized questionnaire. Site liaisons returned the completed questionnaires to PI by (1) scanning and emailing electronic copies, (2) the PI picking up physical copies, or (3) mailing physical copies back to PI. The PI input questionnaire responses into the Qualtrics software system for organization before analysis, and participants were coded to ensure confidentiality.

**Analysis Plan for Aim 2**

*Aim 2: To establish the psychometric properties of the Mueller Assessment of Transition (MAT).*

Using IBM’s Statistical Package for Social Sciences (SPSS) 27.0 (IBM Corp, 2020), data from the MAT was first cleaned by screening for outliers. Missing data was assessed on a case-by-case basis. Next the data were analyzed for normality using descriptive statistics including mean, standard deviation, and histograms.

JMP Pro 16 software packages were used for data analysis (Arbuckle, 2014; SAS Institute Inc., 2019). Statistics for factor loadings and construct validity were then analyzed for this nationwide sample through confirmatory factor analysis (CFA) to examine factor structure of the MAT for individual items (Springer, Abell, & Nugent,
The model fit of the CFA was evaluated using fit indices that included root mean square residual error of estimation (RMSEA) between 0.05-0.08 (Hu & Bentler, 1999), comparative fit index (CFI) close to .95 (Byrne, 2013), Tucker-Lewis index (TLI) close to 0.95 (Brown, 2015), and the standardized root mean square residual (SRMR) of <0.09 (Hooper et al., 2008). The factor loadings of the CFA informed the prevalence of certain constructs (i.e., constraints to wellbeing or adjustment strategies) for this larger sample during their transitions into ALFs. Scoring of the MAT was established through these findings and used in future research.

To test reliability of these data, inter-item correlations, item-total correlations, Cronbach’s alpha, and the average inter-item correlations were conducted on established factors. Cronbach’s alpha coefficient was used to assess internal consistency by looking for values in the region of .7-.9 for good reliability (Field, 2018).

Analysis Plan for Aim 3

Aim 3: To use the Mueller Assessment of Transition (MAT) to describe influences on wellbeing in a nationwide sample of older adults who recently transitioned into ALFs.

For this stage of the research, PI used SPSS version 27 software package to identify outcomes of the MAT (Arbuckle, 2014; IBM Corp, 2020). Statistics for descriptive information were calculated for age, sex, date of move in, where moved from previously, educational background, race, number of times moved, military background, and past/current health conditions. The HAQ-DI assessed participants perceived functional abilities. To test the relationship of the two constructs (i.e., constraints and
adjustment strategies), composite scores were created for each subscale. A composite score creates a mean score of all items within a particular subscale to show the differences between individuals or groups (Artino et al., 2014).

Using SPSS version 27.0, two multiple linear regression models were hypothesized to test the relationship between older adults’ functional abilities, wellbeing at time of transition, and past/current health conditions. The health conditions and MAT items were asked of participants during their relocation into the ALF resulting in Model 1: Older adults’ health conditions predictive of their wellbeing at time of transition. The MAT asked participants to recall back to their transitions, yet the instructions of the HAQ-DI asked about health over the past week. So, Model 2 hypothesized older adults’ wellbeing at the time of transition predicted their functional abilities in the ALF.

Additionally, the Chi Square Test of Association tested the differences in MAT items and overall score (Pituch & Stevens, 2016). The Chi Square Test of Association was deemed appropriate as it determines whether items are independent or related among categorical variables (like the Likert-scale responses of the MAT). Regional differences (Northwest, Midwest, South, and West) were tested from MAT item responses and overall scores. The distribution of responses in independence were further tested based on demographic information including age, sex, educational background, number of times moved, where moved from previously, race, and military background. These Chi Square Tests of Association were analyzed in SPSS version 27.0 (IBM Corp, 2020).
Chapter 4: DEVELOPMENT AND FACTOR STRUCTURE OF THE MUELLER ASSESSMENT OF TRANSITION (MAT): A TOOL FOR MEASURING OLDER ADULTS’ WELLBEING DURING TRANSITION INTO ASSISTED LIVING FACILITIES

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Intended for Senior Housing and Care Journal
Abstract

Background and Objectives: This paper details the development and factor structure of the Mueller Assessment of Transition (MAT), a novel assessment to measure older adults’ wellbeing when transitioning into assisted living facilities (ALF).

Research Design and Methods: Older adult participants (n=69) in nine ALFs in the Midwestern and Southern regions of the United States completed the MAT and provided demographic information.

Results: Exploratory factor analysis identified a 2-factor, 12-item solution of negative and positive influences on older adults’ wellbeing, described as adjustment strategies and constraints to wellbeing. Further results found differences in older adults’ wellbeing when transitioning into ALFs before the COVID-19 pandemic compared to during the COVID-19 pandemic (after March 2020).

Discussion and Implications: This study adds a standardized assessment for measuring older adults’ wellbeing during transitions into ALFs. Additionally, findings shed light on transitions during the COVID-19 pandemic, as older adults who transitioned during the pandemic had lower wellbeing scores than those who transitioned prior to the pandemic. Implications for healthcare practitioners and future research recommendations are discussed.

Keywords: relocation, move, transition experience, adjustment strategies, constraints
Introduction

Older adults are transitioning from the community into continuum of care retirement community facilities, like assisted living facilities (ALFs), at increasing rates (Cornell et al., 2020; Stevenson & Grabowski, 2010). Currently 810,000 older adults reside in ALFs, but the number of ALFs needed in the United States is expected to reach nearly 1 million older adults by 2040 (Parkman, 2021). Long-term care facilities (LTCFs) differ from ALFs in that they provide medical services that are available at all times, while ALFs provide limited nursing care (Roberts et al., 2020; Zimmerman & Sloane, 2007). Furthermore, ALFs provide varying levels of supports and services because some facilities admit individuals who have more disabling conditions (Roberts et al., 2020; Scott & Mayo, 2019).

For transitions into ALFs, research is limited, although some initial work has demonstrated that the transition into an ALF is known to influence older adults’ wellbeing (Saunders & Heliker, 2008; Tracy & DeYoung, 2004). Wellbeing can be defined as the state when older adults have the social, physical, and psychological resources they need (Dodge et al., 2012). The current literature has broadly explored positive influences on older adults’ wellbeing when moving into ALFs (Chatman, 2013; O’Hora & Roberto, 2019; Scott & Mayo, 2019; Tompkins et al., 2012; Tracy & DeYoung, 2004), however these studies have focused primarily on external ways to ease the transition without specifically addressing older adults’ wellbeing. One study that has looked at external ways to ease the transition was by Mueller and colleagues (2021) who found that older adults were using specific adjustment strategies to ease their transitions.
into ALFs. These adjustment strategies had theoretical connections with the stages of Transition Process Framework that predicts older adults’ transition experiences based on various factors (Brandburg, 2007). On the contrary, research about transitions into ALFs has also identified negative influences on wellbeing, including declining physical abilities (Resnick et al., 2015), changes in psychological and mental wellbeing (Fields et al., 2012; O’Hora & Roberto, 2019), and changes in relationships with friends and family members (Fields et al., 2012). In order to further explore this, Mueller and colleagues (in review) found that older adults were experiencing negative influences on their wellbeing during their relocations into ALFs from feeling a loss of independence and downsizing in their space and possessions. These constraint to wellbeing findings aligned with the Hierarchical Leisure Constraints Theory that resulted in a proposed Modified Constraints to Wellbeing Model (Crawford & Godbey, 1987; Mueller et al., 2021).

Currently, health care professionals at ALFs are unable to measure the wellbeing of the individual as they transition, as no assessment tools exist (Mueller et al., 2021; Scott & Mayo, 2019). Thus, to fully recognize the impact of transitions on older adults’ wellbeing the Mueller Assessment of Transition (MAT) was created to address this gap and includes items that hypothesize, based on previous research, the presence of both positive and negative influences on older adults’ wellbeing (Mueller et al., in review; 2021). Therefore, the purpose of this study was to analyze the factor structure and internal consistency of the MAT.

Methods

Study Design
This study used a descriptive, survey research design to identify and measure older adults’ wellbeing when transitioning into ALFs. The MAT was created following Artino et al.’s (2014) seven-step scale survey design research for medical education researchers (See Figure 1). First, a literature review was conducted to create open-ended interview questions about influences on older adults’ wellbeing when transitioning into ALFs. Secondly, 14 residents of an ALF in the Southwest region of the United States participated in individual, face-to-face, semi-structured qualitative interviews to understand and explore influences on older adults’ wellbeing when moving into ALFs (Mueller et al., in review, 2021). Third, the themes that emerged from the interviews were used to define two main constructs (negative influences and positive influences) to better understand older adults’ wellbeing when transitioning into ALFs. Fourth, multiple items were composed to focus on indicator homogeneity so that wording was familiar to the older adult population (Little et al., 1999). Fifth, experts in the older adult and therapy fields (n=4) were provided with definitions of the constructs and reviewed all MAT items (Artino et al., 2014). The expert review was followed by a Q-sort process with graduate students (n=5) to assign the individual items to either of the two constructs, based on the closest conceptual relationship (Nahm et al., 2002). Changes were made to the MAT items to construct three items to be more negative or positively worded through the process of the Q-sort. Sixth, a group of older adults (n=5) gave feedback on the assessment through cognitive interviews, in which older adults were asked to describe their thought process on answering each MAT item based on the directions, the clarity of item wording, and appropriate font size. Through feedback from these older adults,
directions were clarified, and the font size was increased for ease of reading for older adult participants. Lastly, this group of older adult piloted the MAT questions by identifying how well they agree with the statement about influences on their wellbeing on a seven-point Likert scale from 1=strongly disagree to 7=strongly agree. A seven-point Likert scale was selected based on current scale development recommendations in addressing issues of scale sensitivity, resulting variance, respondent burden, response efficiency, and questionnaire clarity (DeVellis, 2017; Little et al., 1999; Noar, 2003). Pilot testing aims to establish the MAT’s construct validity primarily through exploratory factor analysis (EFA).

**Artino et al.’s Seven-Step Survey Scale Design Process**

1. Conduct a literature review
2. Conduct interviews and/or focus groups
3. Synthesize the literature review and interviews/focus groups
4. Develop items
5. Conduct expert validation
6. Conduct cognitive interviews
7. Conduct pilot testing

**Figure 1.** A Seven-Step, Survey Scale Design Process (Artino et al. 2014, p. 464)

**Participants**

Participants were recruited from nine ALFs in the eastern half of the United States. These nine ALFs provided 24/7 staff assistance for activities of daily living (ADLs) but not full nursing care. Inclusion criteria for this study was that the individual
(1) was a resident of an ALF, (2) had transitioned to the ALF after March 2018, (3) was proficient in reading English, and (4) demonstrated mental capacity to recall as evidenced by a score of >4 on the Six-Item Screener. Participants who (1) were on ventilators and could not provide written communication, (2) transitioned to end-of-life care, and (3) were diagnosed with moderate to severe memory impairment were excluded.

**Measures**

The following demographic data were collected from participants: gender, age, date moved into the facility, educational level, marital status, military veteran (or spouse’s military veteran) status, number of times moved in lifetime, and primary reason for the transition into the ALF.

The MAT is comprised of 20 closed-ended questions on a 7-point Likert scale from 1= *strongly disagree* to 7= *strongly agree* that includes 10 constraints items and 10 adjustment strategies items for a total of 20 items. Each item started with the prompt “As you transitioned into the ALF, you experienced…” and ends with a descriptor of one aspect of wellbeing. Directions on the MAT ask participants to recall their first month in the ALF when answering each item.

**Procedures**

This study was approved by a university Institutional Review Board in the southern region of the United States. ALF sites were identified through professional listservs, social media, and word-of-mouth referrals. Each ALF site was asked to nominate a site liaison to help identify residents in the ALF to be the participants that completed the questionnaires. Site liaisons were part-time or full-time employees of the
ALF with the following titles: recreational therapist, therapeutic recreation specialist, wellness director, activities director, life enrichment coordinator, resident director, administrator, and community outreach coordinator. Site liaisons were trained by the research team via video call on the proper procedures, including: the purpose of the MAT and demographic questions, inclusions/exclusion requirements of residents, training on the protocol to use the resident invitation script and fidelity checklist, details about each item, distributing and collecting questionnaires, sending completed questionnaires to the principal investigator, and shredding the completed questionnaires.

Eligible participants were screened by site liaisons using the Six Item Screener (Callahan et al., 2001) and then asked to provide informed consent. Site liaisons distributed the paper questionnaires to eligible participants along with a writing instrument. Questionnaires included both the MAT items and demographic questions. The self-administered questionnaire was completed by participants in their rooms for privacy and confidentiality. Site liaisons were discouraged from assisting participants by reading questions aloud (i.e., interview style). However, site liaisons were permitted to mark a participant’s answers if the participant was unable to write. Completed questionnaires were returned to the research team by scanning to email, mailing through the postal service, or being picked up at local ALFs.

**Statistical Analysis**

Descriptive statistics, including the distribution of response categories and the proportion of missing observations, were determined for each item. Higher scores represent higher levels of wellbeing for all items. Constraints to wellbeing items (n=6)
were reverse coded. An EFA was then implemented to examine the factor structure of the MAT. Data was prepared for the EFA by examining the correlation matrix of the measured variables using Bartlett’s test and Kaiser-Meier-Olkin Measure of Sampling Adequacy (i.e., KMO MSA) (Dziuban & Shirkey, 1974). Items with a correlation value of <0.30 with other items indicate no significant correlation, so those were considered for deletion (Dziuban & Shirkey, 1974), as items must be correlated with others to indicate they are measuring the same factor. Methods to examine dimensionality were applied including scree plot and parallel analysis (Pituch & Stevens, 2016). Interpretation of EFA solutions involved assessing meaningfulness of the set of items with high loadings on each factor, with loadings >0.30 considered substantive (Tabachnick & Fidell, 2013). A Promax oblique rotation was performed on the data since the underlying factors were assumed to be related as wellbeing is a complex concept (Washburn, 2005).

Internal consistency reliability of the MAT and each construct identified with the EFA was assessed using Cronbach’s alpha, with values of > 0.70 considered acceptable (Tabachnick & Fidell, 2013). Items with corrected item-total correlations or squared multiple correlations <0.30 were considered internally inconsistent (Tabachnick & Fidell, 2013).

Finally, due to the timing of data collection occurring during the COVID-19 pandemic, post-hoc analyses with independent samples t-tests assessed the scores of the total MAT, constraints to wellbeing construct, adjustment strategies construct, and individual items for differences. Item differences were computed between participants who transitioned before the COVID-19 pandemic and those who transitioned during the

Missing data were treated on an item-by-item basis, with all available data for each item included in analyses. Parallel analysis was conducted using Gonzaga’s Parallel Analysis Engine to Aid in Determining Number of Factors to Retain using R (Vivek et al., 2017). EFA and all other analyses were performed using SPSS, version 27 (IBM Corp, 2020).

Results

Sixty-nine older adults completed the MAT. Less than 3% of responses were missing on any given item. Participant demographics are found in Table 1 and are summarized here. Participants were aged 64-100 (mean= 86.20, standard deviation (SD)= 7.745), and were primarily female (70%). Of the participants in this sample, the majority were widowed (70%), and just over half (54%) were military veterans or spouses of military veterans, ranging in years of service from 2-30. Participants had moved an average of 4.23 times in their lifetimes before transitioning into the ALF. All participants had moved into the ALF after March 2018, although some participated as early as a few days after their transition. Lastly, 25% of participants transitioned during the COVID-19 pandemic (after March 2020).

Table 1.
Participant Demographic Statistics

<table>
<thead>
<tr>
<th>Age</th>
<th>$M = 86.20; SD = 7.75; range= 64-100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant gender</td>
<td></td>
</tr>
<tr>
<td><em>Female</em></td>
<td>48 (70%)</td>
</tr>
<tr>
<td><em>Male</em></td>
<td>21 (30%)</td>
</tr>
</tbody>
</table>
Number of times moved in lifetime
Mdn= 4

Participant marital status

Married 12 (17%)
Widowed 48 (70%)
Single, never married 3 (4%)
Divorced 5 (7%)
Member of unmarried couple 0 (0%)
Missing 1 (1%)

Participant highest level of education

K-11 3 (4%)
High School Graduate 10 (15%)
Some College 20 (29%)
College Graduate Degree 16 (23%)
Some Post Graduate 6 (9%)
Post Graduate Degree 12 (17%)
Missing 2 (3%)

Military veteran (or spouse as veteran) 37 (54%)

Years of service in military M=6; SD= 7.73; range= 2-30

Transitioned during COVID-19 pandemic (after March 2020) 17 (25%)

Construct Validity

The suitability of data for EFA was assessed through a correlation matrix with most correlations about the .30 recommended threshold (Field, 2018). However, several items had correlations <.30 with all other items or measures of sampling adequacy (MSAs) of <.50 when examining the anti-correlation matrix. Therefore, eight items were removed from the initial 20-item questionnaire. See Table 2 for a summary of why items were removed from the MAT. With these items removed, further analyses confirmed data suitable for factoring with a Kaiser-Meyer-Olkin= .674 and a significant Bartlett test of
sphericity [chi-square =157.525, degree of freedom (DF) = 66, p < .001]. An EFA on the remaining 12 eligible items identified 3 factors when examining the more subjective method of a scree plot, however the parallel analysis identified only 2 factors. See Table 3 for the parallel analysis. Thus, the EFA was conducted with both 2 and 3 factors. Further analysis of the 3-factor structure showed a lack of factor meaningfulness and cross-loadings on 2 factors. The 3-factor solution was therefore not considered further.

Table 2.
Summary of Items Removed (n=8) and Reasons for Removal

<table>
<thead>
<tr>
<th>Items</th>
<th>Reason for Removal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1. Feeling less independence.</td>
<td>Correlation coefficient &lt;.30 for 19 items</td>
</tr>
<tr>
<td>Q2. A loss of freedom from no longer driving a car.</td>
<td>Correlation coefficient &lt;.30 for 18 items</td>
</tr>
<tr>
<td>Q11. Feeling a decrease in thinking clearly.</td>
<td>Measure of Sampling Adequacy &lt;.50</td>
</tr>
<tr>
<td>Q14. Feeling better by attending exercise programs.</td>
<td>Correlation coefficient &lt;.30 for 19 items</td>
</tr>
<tr>
<td>Q15. Feeling a loss in your memory.</td>
<td>Measure of Sampling Adequacy &lt;.50</td>
</tr>
<tr>
<td>Q16. A level of comfort from already being familiar with this facility.</td>
<td>Correlation coefficient &lt;.30 for 18 items</td>
</tr>
<tr>
<td>Q17. The freedom to choose where to place items in your new room.</td>
<td>Correlation coefficient &lt;.30 for 19 items</td>
</tr>
<tr>
<td>Q20. Feeling you could think more clearly by engaging in stimulating activities.</td>
<td>Correlation coefficient &lt;.30 for 19 items</td>
</tr>
</tbody>
</table>

Table 3.
Parallel Analysis (adapted from Vivek et al., 2017)

<table>
<thead>
<tr>
<th>Component Number</th>
<th>Actual eigenvalue from PCA</th>
<th>Random order from parallel analysis</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2.955</td>
<td>1.748</td>
<td>Accept</td>
</tr>
<tr>
<td>2</td>
<td>2.041</td>
<td>1.526</td>
<td>Accept</td>
</tr>
<tr>
<td>3</td>
<td>1.228</td>
<td>1.362</td>
<td>Reject</td>
</tr>
<tr>
<td>4</td>
<td>1.034</td>
<td>1.229</td>
<td>Reject</td>
</tr>
<tr>
<td>5</td>
<td>.950</td>
<td>1.111</td>
<td>Reject</td>
</tr>
<tr>
<td>6</td>
<td>.765</td>
<td>1.001</td>
<td>Reject</td>
</tr>
<tr>
<td>7</td>
<td>.693</td>
<td>.912</td>
<td>Reject</td>
</tr>
<tr>
<td>8</td>
<td>.609</td>
<td>.811</td>
<td>Reject</td>
</tr>
<tr>
<td>9</td>
<td>.564</td>
<td>.720</td>
<td>Reject</td>
</tr>
</tbody>
</table>
The 2-factor solution accounted for 42% of variation in the data (factor 1: 25%, factor 2: 17%). With only 42% of the data explained, it is often recommended to add additional factors to increase the percent of variance explained to at least 80% (Tabachnick & Fidell, 2013). Adding a third factor only increased the variance explained to 51%, and seven factors would have been needed to reach the 80% threshold. This would have resulted in a meaningless factor solution. However, the 2-factor solution shows meaningfulness as factor loadings distributed as hypothesized from the previous Mueller et al. (in review, 2021) study, with six negative influence items and six positive influence items loading onto their respective factors, with no cross-loadings. Therefore, the 2-factor structure was retained. See Table 4 for the results of retaining 2 and 3 factor solutions. Finally, an EFA with oblique Promax rotation was performed on the 12 eligible items when extracting 2-factors. The factors were named Adjustment Strategies for the positive influence on wellbeing and Constraints to Wellbeing for the negative influences on wellbeing. See Table 5 for the mean, standard deviations, and median responses for MAT items in both constructs (Adjustment Strategies and Constraints to Wellbeing).

<table>
<thead>
<tr>
<th>Item</th>
<th>2-Factor Solution</th>
<th>3-Factor Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>λ</td>
<td>h²</td>
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<tr>
<td>Item 3</td>
<td>Factor 1</td>
<td>Factor 2</td>
</tr>
<tr>
<td>Item 3</td>
<td>.641</td>
<td>.283</td>
</tr>
<tr>
<td>Item 4R</td>
<td>.323</td>
<td>.164</td>
</tr>
<tr>
<td>Item 5R</td>
<td>.457</td>
<td>.308</td>
</tr>
<tr>
<td>Item</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>----------</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>Item 3:</td>
<td>5.37</td>
<td>1.584</td>
</tr>
<tr>
<td>Item 6:</td>
<td>4.96</td>
<td>1.858</td>
</tr>
<tr>
<td>Item 7:</td>
<td>4.64</td>
<td>1.732</td>
</tr>
<tr>
<td>Item 8:</td>
<td>4.68</td>
<td>1.745</td>
</tr>
<tr>
<td>Item 9:</td>
<td>4.96</td>
<td>1.449</td>
</tr>
<tr>
<td>Item 10:</td>
<td>4.99</td>
<td>1.886</td>
</tr>
<tr>
<td>Item 4R:</td>
<td>3.51</td>
<td>1.951</td>
</tr>
<tr>
<td>Item 5R:</td>
<td>3.60</td>
<td>1.971</td>
</tr>
<tr>
<td>Item 12R:</td>
<td>3.29</td>
<td>1.856</td>
</tr>
<tr>
<td>Item 13R:</td>
<td>3.38</td>
<td>1.955</td>
</tr>
<tr>
<td>Item 18R:</td>
<td>3.01</td>
<td>1.728</td>
</tr>
<tr>
<td>Item Q19R:</td>
<td>2.59</td>
<td>1.666</td>
</tr>
</tbody>
</table>

R indicates reverse-coded item.
Reliability

Internal consistency analyses were performed on the final 12 items for a total Cronbach’s alpha of .705. Factor 1, Constraints to Wellbeing, had an above average Cronbach’s alpha (.711), while factor 2, Adjustment Strategies, had average reliability (.668). Both factors contained items with low squared multiple correlations of <.30, but overall correlations were in acceptable ranges.

Scoring

Total scores were calculated by summing the six items in each construct (possible range 1-7). The highest possible score for the MAT is 84 (for 12 items), and Adjustment Strategies and Constraints to Wellbeing each at 42 (for 6 items). MAT total mean score was 49 (10.38), range 27 to 68, with the total mean Adjustment Strategies 30 (6.18), range 15 to 42 and total mean Constraints to Wellbeing score at 20 (7.21), range 6 to 36. See Table 6 for scores for Total MAT and each construct where higher scores indicate higher levels of wellbeing.

Table 6. Total, Constraints to Wellbeing, and Adjustment Strategies MAT Scores

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total MAT</td>
<td>49</td>
<td>10.38</td>
<td>27</td>
<td>68</td>
</tr>
<tr>
<td>Constraints to Wellbeing</td>
<td>20</td>
<td>7.21</td>
<td>6</td>
<td>36</td>
</tr>
<tr>
<td>Adjustment Strategies</td>
<td>30</td>
<td>6.18</td>
<td>15</td>
<td>42</td>
</tr>
</tbody>
</table>

Highest possible Total MAT score= 84; Highest possible Constraints to Wellbeing and Adjustment Strategies scores= 42

Post-Hoc Analyses

First, the data were analyzed by a multiple linear model using MANOVA as an omnibus test (Pillai test statistic = 0.905, $F(2)=4.904, p = 0.011$) with the constructs of the MAT (Adjustment Strategies and Constraints to Wellbeing) as dependent
variables. A significant MANOVA result allows for multiple testing of the data. Then, an independent samples t-test, assuming unequal variances, identified significant differences in total MAT scores between participants who transitioned into ALFs during the COVID-19 pandemic (M=42, SD=42.01) versus before the pandemic (M=51, SD=10.10); 

\[
t(31)=3.571, p = .001.\]

Significant differences were also found in the Constraints to Wellbeing scores between participants who transitioned into the ALF during the COVID-19 pandemic (M=16, SD=4.08) versus before the pandemic (M=20, SD=7.433);

\[
t(44)=2.937, p = .005.\]

An additional significant difference in Adjustment Strategies scores was present during COVID-19 pandemic (M=27, SD=6.29) versus pre-COVID-19 pandemic (M=31, SD=6.00); \(t(27)=2.138, p = .042\). See Table 7 for MAT results of independent samples t-tests for equality of means for transitions before and during the COVID-19 pandemic.

Along with total scores of the constructs, significant chi square tests compared item response distributions for two individual items about attending community outings outside of the ALF and hosting family and friends for social gatherings before and during the COVID-19 pandemic. Mosaic plots were created to help depict the relationship between Pre-COVID and During COVID transitions for individual items where the width of the columns is proportional to the frequency of Likert scale responses (1-7). Mosaic plots are stacked bar charts that show percentage of responses in groups (SAS Institute Inc., 2021). See Figure 2 for the mosaic plot for item 8 (feeling a sense of freedom when leaving the facility on outings) where each color shading shows the MAT item response proportions for pre-COVID-19 compared to during COVID-19 transitions. See Figure 3
for the mosaic plot for item 19 (feeling less freedom to host social gatherings with family and friends) where each color shading shows the MAT item response proportions for pre COVID-19 compared to during COVID-19 transitions.

Table 7.
MAT Score Results Using Independent Samples T-tests for Equality of Means for Transitions Before and During the COVID-19 Pandemic

<table>
<thead>
<tr>
<th></th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
<th>Mean Difference</th>
<th>Std. Error Difference</th>
<th>95% Confidence Interval of the Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT Total Scores</td>
<td>3.571</td>
<td>31</td>
<td>.001</td>
<td>8.936</td>
<td>2.502</td>
<td>3.830 - 14.042</td>
</tr>
<tr>
<td>Constraints to Wellbeing Scores</td>
<td>2.937</td>
<td>44</td>
<td>.005</td>
<td>4.44</td>
<td>1.51</td>
<td>1.394 - 7.491</td>
</tr>
<tr>
<td>Adjustment Strategies Scores</td>
<td>2.138</td>
<td>27</td>
<td>.042</td>
<td>3.768</td>
<td>1.761</td>
<td>.155 - 7.380</td>
</tr>
</tbody>
</table>

*Significance level at p < .05.
Discussion

The challenges of transitioning into ALFs have been explored previously (Fields et al., 2012; Mueller et al., 2021b; Scott & Mayo, 2019). Many qualitative studies, including prior research by this team (Mueller et al., in review; 2021), have suggested that older adults experience both positive and negative influences on their wellbeing when relocating (Saunders & Heliker, 2008; Tracy & DeYoung, 2004). Theoretical foundations for these positive influences are grounded in the Transition Process Framework (TPF), which describes the transition for older adults into LTCFs (Brandburg, 2007). Findings from the Mueller et al. (2021) study were applied to the TPF as both active and passive influences that improved all aspects of an older adult’s
wellbeing during transition. Consequently, these positive influences were named adjustment strategies (Mueller et al., 2021). However, older adults also experienced negative influences on their wellbeing when transitioning into ALFs (Mueller et al., in review). Mueller and colleagues coined these negative influences on older adults’ wellbeing as constraints to wellbeing. Figure 4 shows the findings of the Mueller et al. (in review; 2021) study as older adults’ wellbeing is often balanced between constraints to wellbeing and adjustment strategies. If older adults experience more adjustment strategies or constraints, there can be positive or negative influences on their wellbeing during their transition into an ALF.

Prior to this study, the literature lacked a standardized assessment to quantitatively assess the constructs of positive adjustment strategies and negative constraints to wellbeing experienced by older adults moving into ALFs. This current study, using an EFA, confirmed the hypothesized constructs (adjustment strategies and constraints to wellbeing) by establishing an assessment with acceptable internal reliability.
The MAT provides an opportunity for older adults’ wellbeing to be quantified during the transition process, a novel concept for better understanding their transition experiences. Healthcare professionals can use the MAT responses to address older adults’ areas of need when assessing, maintaining, or improving wellbeing during transitions into ALFs. Areas of need that could be identified using the MAT are perceived physical health, community engagement, social supports, and the importance of maintaining family relationships, spiritual practices, and leisure hobbies.

The EFA supported a 2-factor structure for the MAT, each with six items. The total MAT scores during older adults’ transitions were an average of 49 out of a possible 84, indicating older adults had substantial room to improve their wellbeing during their transition. Previous research on older adults’ wellbeing has been primarily intervention based but not conducted during the transition process (Almomani & Bani-Issa, 2017;
Resnick et al., 2015; Tompkins et al., 2012). The findings of this study are promising as future research could use the MAT to examine pre/post changes in older adults’ wellbeing around an intervention conducted in the first month of an older adults’ transition into the ALF. Additional research is needed to conduct a confirmatory factor analysis on a representative sample and establish cut-off scores on the MAT to identify older adults who may need more support during the transition, as indicated by low MAT scores (showing low wellbeing). Research also is required to examine the relationship between MAT scores and other transition outcomes like family caregiver relationships, perceived physical/mental health, and feelings of independence in the ALF.

This study adds to the literature about transitions into ALFs during the COVID-19 pandemic as older adults in this study who transitioned during the COVID-19 pandemic had lower wellbeing scores than older adults who transitioned prior to the COVID-19 pandemic. Additionally, the residents who moved in during the COVID-19 pandemic scored lower for utilizing adjustment strategies compared to those who relocated before the pandemic, demonstrating that older adults were using fewer adjustment strategies to cope with their transitions during the pandemic. Residents utilizing less adjustment strategies during the pandemic could be related to COVID-19 safety protocols that restricted family visits, community outings, and health- and social- group programs in an effort to curb the spread of the virus.

An interesting finding is that older adults who transitioned during the COVID-19 pandemic experienced fewer constraints to wellbeing than those moving in before the pandemic. This finding may result from a change in their perceptions of items in the
MAT based on the current situation. For example, older adults who answered Q4 *(feeling worse physical health)* during the COVID-19 pandemic may have compared their health to those infected with the virus in critical care, and therefore answered higher than they would have before the COVID-19 pandemic. Lastly, significant differences about item 8 *(leaving the facility on outings)* and item 19 *(feeling less freedom to host social gatherings with family and friends)* for older adults transitioning into ALFs during the COVID-19 pandemic, compared to before, were noted. This is likely due to the ALFs in this sample prohibiting or limiting residents from leaving the facility or hosting family and friends during the pandemic, contributing to older adults’ lower wellbeing.

This study provides substantiation for the MAT structure; however, some limitations exist. Recall bias is possible, as the MAT was tested for older adults in ALFs who were thinking back to their transition experiences that ranged from days up to two years after moving into the ALF. The difference in participants’ recall time is an additional limitation to this study. Internal reliability, although acceptable, could have been stronger with higher squared multiple correlations and Cronbach’s alpha of each construct. Furthermore, the COVID-19 pandemic presented many challenges during this study including that older adults were possibly changing their views of wellbeing, a concept that warrants further investigation. There could also be implication for generalizability of the COVID-19 difference results based on the composition of this sample being limited to eastern U.S. with a very high representation of military veterans or spouses of military veterans. The MAT was only tested with residents in ALFs during this study, leading to the need for additional research using the MAT for older adults in
other settings like LTCFs, independent living facilities, residential treatment centers, and adult day programs. Lastly, older adults diagnosed with moderate to severe cognitive impairments were excluded from this study, and as a result, their views may have been overlooked when considering transitions into ALFs. Future studies should consider modifying the MAT for older adults with cognitive impairments like major neurocognitive impairment.

Conclusions and Implications

The MAT is a self-administered and brief assessment to measure older adults’ wellbeing when relocating into ALFs. It can be used by all healthcare professionals, especially recreational therapists, social workers, and activities professionals, to identify residents with low wellbeing when moving into their facility. For older adults with lower wellbeing, person-centered services and programs should be provided to increase those residents’ wellbeing. Looking forward, the MAT may be used by researchers to implement empirical studies about older adults’ wellbeing during transitions into ALFs and other senior facilities.

Funding
None reported.

Conflict of Interest
We have no conflict of interest to declare.
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Chapter 5: MEASURING OLDER ADULTS’ WELLBEING WHEN TRANSITIONING INTO ASSISTED LIVING FACILITIES: A CONFIRMATORY FACTORY ANALYSIS OF THE MUELLER ASSESSMENT OF TRANSITION (MAT)

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Dr. Christy Brown, Ph.D.
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Department of Parks, Recreation, and Tourism Management: Recreational Therapy
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Intended for The Gerontologist
Abstract

Older adults’ wellbeing during the transition into an assisted living facility (ALF) is not well understood and may influence their perceived health. The Mueller Assessment of Transition (MAT) was created to measure the impact of transition on older adults’ wellbeing when relocating into ALFs. Early developmental testing of the MAT revealed a hypothesized model with two constructs (adjustment strategies and constraints to wellbeing). Therefore, the purpose of this study was to confirm the factor validity of the MAT with a sample of older adults transitioning into ALFs. A nationwide sample of 108 older adult participants completed the MAT. Results indicated strong fit indices to confirm the hypothesized model of the MAT. Implications for healthcare professionals using the MAT as a standardized tool to measure older adults’ wellbeing when relocating into ALFs and future research are discussed.

Keywords: wellbeing, transitions, adjustment strategies, constraints to wellbeing, assisted living facilities, older adults, confirmatory factor analysis
Introduction

Older adults are moving into senior communities, like assisted living facilities (ALFs), at increasing rates due to needing more care and services (Canizares et al., 2016). It is estimated that the number of older adults moving into ALFs by 2040 will reach nearly 1 million older adults (Parkman, 2021). ALFs offer more nursing and daily care than is provided in independent living facilities (ILFs) but less than long-term care facilities (LTCFs) (Zimmerman & Sloane, 2007).

Older adults’ transition experiences may begin as early as when an older adult starts to consider relocating into ALFs (Tracy & DeYoung, 2004), however, the transition experience has been reported to be most influential during the first month of moving into the ALF (Scott & Mayo, 2019). Understanding older adults’ wellbeing during the transition is important because it may influence older adults’ physical and mental health, along with their overall experience living in the ALF (Plys & Smith, 2021; Resnick et al., 2015). Wellbeing can be defined as the state when older adults have the physical, social, and psychological resources they need (Dodge et al., 2012). Research has indicated that older adults’ wellbeing is often both positively and negatively influenced during a move into an ALF (cf. Fields et al., 2012; O’Hora & Roberto, 2019; Scott & Mayo, 2019; Tompkins et al., 2012; Tracy & DeYoung, 2004); and recent work has described these adjustment strategies and constraints to wellbeing (Mueller et al., 2021).

Prior to Mueller and colleagues’ study (2021), a few studies found that older adults utilize positive adjustment strategies to ease their transitions when moving into ALFs. For example, adjustment strategies included relying on family for support (O’Hora
& Roberto, 2019a), finding new routines (Tracy & DeYoung, 2004), and engaging in physical health exercises (Mulry, 2012) to positively influence wellbeing. Mueller and colleagues (2021) expanded these findings by identifying eight active and passive adjustment strategies used to maintain or improve older adults’ wellbeing when moving into ALFs. The active adjustment strategies included engaging in health promoting activities, connecting to the outside world, intentionally placing possessions in their rooms, engaging in spiritual practices, and finding new daily routines in the ALF. Passive adjustment strategies included relying on staff and other residents for support and having a prior familiarity with the ALF before relocation (Mueller et al., 2021).

Older adults also may experience negative constraints to their wellbeing when transitioning into ALFs (Chatman, 2013; Collier, 2019; Mueller et al., in review.; O’Hora & Roberto, 2019b; Tompkins et al., 2012; Tracy & DeYoung, 2004). The literature describes constraints to older adults’ wellbeing that may occur from unwanted changes in social relationships (Tompkins et al., 2012), declining physical and mental abilities (Resnick et al., 2015), and fluctuations in feelings (Fields et al., 2012; Scott & Mayo, 2019). Mueller and colleagues (in review) also identified four constraints to wellbeing that negatively influence older adults when moving into ALFs. These constraints include losses in physical independence, loss in mental independence, loss in driving, and needing to downsize in space and possessions.

The findings from Mueller and colleagues’ study (in review; 2021), along with other recent literature (O’Hora & Roberto, 2019b; Scott & Mayo, 2019) demonstrate the need to intentionally understand the impact of transitions into ALFs on older adults’
wellbeing so that healthcare providers may offer more person-centered services and supports to new residents during the time of transition. To address this need, the Mueller Assessment of Transition (MAT) was created to measure the impact of transition on older adults’ wellbeing when relocating into ALFs. Development testing of the MAT revealed two constructs (adjustment strategies and constraints to wellbeing; Mueller et al., 2021), but the validation of the MAT and its constructs on the hypothesized model needs further investigation. Therefore, the purpose of this study was to confirm the factor validity of the MAT with a sample of older adults transitioning into ALFs.

**Methods**

A study was undertaken with a nationwide sample of older adults to confirm the factor structure of the MAT. The target sample size was 100 participants in order to have sufficient data for structural equation modeling (Artino et al., 2014). In order to represent a nationwide sample, the principal investigator (PI) reached out to ALF sites based on the percentage of ALFs in the four regions of the United States (41% in the West, 28% in the Midwest, 23% in the South, and 9% in the Northeast) (Schwartz, 2019).

**Participants**

In order to participate in the study, older adults had to meet the following inclusion criteria: resident of an ALF, English reading proficiency, transitioned to the ALF after March 2018, and scored a 4 or higher on the Six Item Screener (SIS; Callahan et al., 2001). Exclusion criteria included individuals with moderate to severe memory
impairment, those on ventilators who could not provide oral or written communication, and those who had transitioned to end-of-life care.

**Procedure**

Ethical approval was obtained from an institutional review board in the Southern region of the United States. ALF sites from across the four regions of the U.S. were recruited through purposive and snowball sampling to help distribute questionnaires through emails, social media platforms, phone calls, flyer handouts, and word of mouth at conferences. At each ALF site, a site liaison was identified to help distribute the questionnaires to eligible participants. The criterion to be a site liaison included (1) residing in the U.S., (2) having one of the following roles at the ALF: nurse, recreational therapy, occupational therapy, physical therapy, occupational therapy assistant, physical therapy assistant, social worker/caseworker, healthcare administrator, activities director, or activities assistant, (3) being employed at the ALF for at least 20 hours per week, and (4) willingness to commit to training for distributing questionnaires. The PI trained the site liaisons how to administer the questionnaire through a 15-minute phone or video call that described the purpose of the questionnaire, participant inclusions/exclusion requirements, use of the participant invitation protocol and fidelity checklist, details about each question, distributing and collecting questionnaires, sending completed questionnaires to PI, and proper elimination of completed questionnaires. The PI also collected information about the profile of the ALF sites, including questions about the number of beds, services offered, and restrictions during the COVID-19 pandemic.
Once site liaisons identified eligible participants based on inclusion criteria, site liaisons then assessed the recall abilities of eligible participants with the SIS less than one week before distributing the questionnaires (Callahan et al., 2001). For two Southern region sites, the PI distributed questionnaires to eligible participants after the site liaison had completed the SIS with eligible participants. Site liaisons or the PI then used an invitation protocol and fidelity checklists to invite eligible participants to complete the questionnaires. If an eligible participant consented to participate, they received the questionnaire and a writing instrument from the site liaisons. Participants completed the questionnaires in their rooms for privacy and confidentiality. Site liaisons did not aid participants by reading questions aloud (i.e., interview style), but site liaisons did record a participant’s answers if the participant was unable to write. Completed questionnaires were returned to research team by the site liaison.

**Data Collection**

The SIS was employed by site liaisons at the ALFs as part of eligibility criteria (Callahan et al., 2001), and to assess cognitive abilities of participants, with higher scores indicating higher levels of cognitive functioning. Other data collected were demographic questions and the MAT.

**Demographic Data**

Demographic questions were collected from participants including age, gender, date moved into the facility, educational level, military veteran (or spouse’s military veteran) status, marital status, and number of times moved in lifetime.

**Mueller Assessment of Transition (MAT)**
The MAT is comprised of closed-ended questions and includes two constructs (six adjustment strategies and six constraints to wellbeing items), for a total of 12 items (Mueller et al., 2021). MAT items identify how well participants agree with statements about influences on their wellbeing on a seven-point Likert scale from 1=strongly disagree to 7=strongly agree. The MAT directions ask participants to respond while thinking back to their first month in the ALF. Each item starts with the prompt “As you transitioned into the ALF, you experienced…” and ends with a statement that influences participants’ wellbeing. When items are summed, these create total scale and construct scores; higher scores represent higher perceived wellbeing. The highest total score for the MAT is 84, with each constructs’ highest total being 42. In pilot testing, The MAT showed reasonable construct validity and demonstrated adequate internal validity (Cronbach’s alpha from .67 to .71) (Mueller et al., 2021).

**Statistical Analysis**

Questionnaire responses were first entered into IBM SPSS version 27 for analysis (IBM Corp, 2020). The accuracy of manually entered data from the hard copy questionnaires was rechecked against raw data twice for accuracy. Missing data were controlled on an item-by-item basis by including all available data for each item. Constraints to wellbeing items (n=6) were reverse coded for scoring purposes as higher scores represent higher levels of wellbeing for all items. Descriptive statistics for each item included distribution of response categories and proportion of missing observations. Kurtosis and skewness were computed to meet the recommended criteria, signifying the absence of outliers in the data (Garson, 2012). A power analysis of the data was first
analyzed to determine if sample size was sufficient. According to the MacCallum Approach, the power analysis should be based on the root mean square error of estimations (RMSE) of fit index close to 0.06 or below, rather than the goodness of fit (GFI) indices “because of undesirable influences of degrees of freedom from GFI-based power analyses” (Harrington, 2009, p. 46). MAT total and construct scores were calculated, and bivariate correlations were also computed to assess within each item the level of association between MAT total and constructs. In interpreting bivariate correlation, a standard criterion (r<.3=small, .3≤ r ≤.5=medium, and r ≥.5=large) was applied (Garson, 2012). Chi square tests of association (p < .05) were then conducted for regional differences in MAT total and on the individual MAT items in order to justify a nationwide sample in this study. Internal consistency estimates (Cronbach’s alpha >.7) were also analyzed for MAT total and constructs (Field, 2018). Items with corrected item-total correlations or squared multiple correlations >0.30 were considered internally inconsistent (Tabachnick & Fidell, 2013).

To confirm the factor validity of the MAT, a confirmatory factor analysis (CFA) was performed on a hypothesized model using JMP Pro 16 (SAS Institute Inc., 2021). The CFA assesses how well the hypothesized model fit the sample data, as CFA is used to confirm or reject hypothesized factor structures of multi-item, multi-construct instruments (Flora & Flake, 2017). Therefore, a CFA tested the proposed factor structure of the constructs set by Mueller and colleagues in the original MAT development study where six MAT items loaded evenly on each of the two constructs (Mueller et al., 2021). See Figure 1 for the hypothesized model. In the CFA, model fit was evaluated using fit
indices that included comparative fit index (CFI) close to .95 (Byrne, 2013), root mean square residual error of estimation (RMSEA) between 0.05-0.08 (Hu & Bentler, 1999), Tucker-Lewis index (TLI) close to 0.95 (Brown, 2015), and the standardized root mean square residual (SRMR) of <0.09 (Hooper et al., 2008).

![Hypothesized 2-Factor Model for MAT](image)

**Figure 1. Hypothesized 2-Factor Model for MAT**

**Results**

A sample of 108 older adults completed the MAT, with 100% of participants completing all 12 MAT items. Only 9% of demographic data were missing for any participant. The demographic data are shown in Table 1 and summarized here.

Participants were from all four regions of the United States, with the majority from the Southern (62%) and Midwestern (24%) regions. Participants were primarily female (75%) and ranged in age from aged 57-97 (mean= 84.22, standard deviation (SD)= 8.09).

Participants primarily moved into the ALF from a residence in the community (69%), with 10% also transitioning from another ALF. In this sample, all participants identified as White, the majority were widowed (67%), and just under half (43%) were spouses of military veterans. Participants had a median of five or more moves in their lifetimes.
before transitioning into the ALF. Lastly, all participants moved in after March 2018, with the majority (60%) relocating after the start of the COVID-19 pandemic (March 2020).

**Table 1.**

<table>
<thead>
<tr>
<th>Participant Demographics</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td>$M = 84.22; SD = 8.09; range= 57-97</td>
</tr>
<tr>
<td><strong>Participant gender</strong></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>81 (75%)</td>
</tr>
<tr>
<td>Male</td>
<td>22 (20%)</td>
</tr>
<tr>
<td>Missing</td>
<td>5 (5%)</td>
</tr>
<tr>
<td><strong>Region of the United States</strong></td>
<td></td>
</tr>
<tr>
<td>South</td>
<td>67 (62%)</td>
</tr>
<tr>
<td>Midwest</td>
<td>26 (24%)</td>
</tr>
<tr>
<td>West</td>
<td>8 (7%)</td>
</tr>
<tr>
<td>Northeast</td>
<td>7 (7%)</td>
</tr>
<tr>
<td><strong>Previous residence before ALF</strong></td>
<td></td>
</tr>
<tr>
<td>Living in a residence in the community</td>
<td>75 (69%)</td>
</tr>
<tr>
<td>Living in another assisted living facility</td>
<td>11 (10%)</td>
</tr>
<tr>
<td>Living in the independent living area of this facility</td>
<td>8 (7%)</td>
</tr>
<tr>
<td>Living in another independent living facility</td>
<td>4 (4%)</td>
</tr>
<tr>
<td>Living in a family member’s home</td>
<td>4 (4%)</td>
</tr>
<tr>
<td><strong>Number of times moved in lifetime</strong></td>
<td>Mdn= 5</td>
</tr>
<tr>
<td><strong>Participant marital status</strong></td>
<td></td>
</tr>
<tr>
<td>Widowed</td>
<td>72 (67%)</td>
</tr>
<tr>
<td>Married</td>
<td>13 (12%)</td>
</tr>
<tr>
<td>Divorced</td>
<td>11 (10%)</td>
</tr>
<tr>
<td>Single, never married</td>
<td>6 (6%)</td>
</tr>
<tr>
<td>Member of unmarried couple</td>
<td>1 (1%)</td>
</tr>
<tr>
<td>Missing</td>
<td>5 (5%)</td>
</tr>
<tr>
<td><strong>Participant highest level of education</strong></td>
<td></td>
</tr>
<tr>
<td>K-11</td>
<td>5 (5%)</td>
</tr>
<tr>
<td>High School Graduate</td>
<td>21 (19%)</td>
</tr>
<tr>
<td>Some College</td>
<td>32 (30%)</td>
</tr>
<tr>
<td>College Graduate Degree</td>
<td>19 (18%)</td>
</tr>
<tr>
<td>-------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>Some Post Graduate</td>
<td>6 (6%)</td>
</tr>
<tr>
<td>Post Graduate Degree</td>
<td>15 (14%)</td>
</tr>
<tr>
<td>Missing</td>
<td>10 (10%)</td>
</tr>
</tbody>
</table>

Military veteran 13 (12%)
Spouse as military veteran 47 (43%)
Race/Ethnicity (White) 103 (95%)
Missing 5 (5%)

Transitioned during COVID-19 pandemic (after March 2020) 65 (60%)

**Table 2.**
Mueller Assessment of Transition (MAT) Constructs for Hypothesized 2-Factor Model

<table>
<thead>
<tr>
<th>Adjustment Strategies</th>
<th>M</th>
<th>SD</th>
<th>Mdn</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT_1: Feeling strong support from the staff.</td>
<td>5.97</td>
<td>1.089</td>
<td>6</td>
</tr>
<tr>
<td>MAT_4: Feeling supported by visits with people who don't live in the ALF.</td>
<td>5.81</td>
<td>1.607</td>
<td>6</td>
</tr>
<tr>
<td>MAT_5: Comfort in a new daily routine.</td>
<td>4.94</td>
<td>1.797</td>
<td>6</td>
</tr>
<tr>
<td>MAT_6: A sense of freedom from leaving the facility on outings.</td>
<td>4.69</td>
<td>1.907</td>
<td>5</td>
</tr>
<tr>
<td>MAT_7: Feeling strong support from other residents.</td>
<td>5.06</td>
<td>1.651</td>
<td>5</td>
</tr>
<tr>
<td>MAT_8: Feeling comforted by engaging in your preferred spiritual practices.</td>
<td>5.38</td>
<td>1.755</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Constraints to Wellbeing</th>
<th>M</th>
<th>SD</th>
<th>Mdn</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT_2R: Feeling worse physical health.</td>
<td>4.71</td>
<td>1.798</td>
<td>5</td>
</tr>
<tr>
<td>MAT_3R: Feeling a loss in your important possessions.</td>
<td>3.82</td>
<td>2.174</td>
<td>3</td>
</tr>
<tr>
<td>MAT_9R: Feeling a loss of enjoyable activities.</td>
<td>3.89</td>
<td>1.997</td>
<td>4</td>
</tr>
<tr>
<td>MAT_10R: Less freedom to move around as you pleased.</td>
<td>3.89</td>
<td>2.128</td>
<td>3</td>
</tr>
<tr>
<td>MAT_11R: Feeling less engaged in your favorite hobbies.</td>
<td>3.77</td>
<td>1.932</td>
<td>3</td>
</tr>
<tr>
<td>MAT_12R: Feeling less freedom to host social gatherings with family and friends.</td>
<td>3.25</td>
<td>1.870</td>
<td>3</td>
</tr>
</tbody>
</table>

R indicates reverse-coded item.

The mean, standard deviations, and median responses for MAT items in both hypothesized constructs (Adjustment Strategies and Constraints to Wellbeing) were
calculated. See Table 2. The scores of the MAT were determined by summing the 12 items in the MAT for a total of 84, with Adjustment Strategies and Constraints to Wellbeing each at 42 (totaling 6 items). Results showed the MAT total mean score was 55 (11.94), with total mean score for Adjustment Strategies at 32 (6.85) and the total mean Constraints to Wellbeing at 23 (8.07). Higher scores demonstrate higher levels of wellbeing. See Table 3 for scores of the total MAT and for each construct.

In this study, the following number of participants were targeted from each region of the United States to align with a nationwide representation for older adults transitioning into ALFs: 9 in the Northeast, 23 in the Midwest, 28 in the South, and 41 in the West (Schwartz, 2019). The final sample included strong representation of participants in the Southern and Midwest regions, however, the Northeastern region was short 2 participants (n=7) and the Southern region needed an additional 33 participants (n=8). In order to address these gaps in regional participants, Chi square tests of association were conducted on regional differences in MAT scores for total MAT and individual items. The only significant difference was for item MAT_3 (feeling a loss in your important possessions) where participants’ responses in the Midwestern region differed from the other three regions. Despite the Western and Northeastern regions having lower samples than desired, no significant differences were found in either regions’ responses for MAT total and individual items compared to other regions.
Table 3. MAT Total and Construct Scores

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total MAT</td>
<td>55</td>
<td>11.94</td>
<td>21</td>
<td>84</td>
</tr>
<tr>
<td>Adjustment Strategies</td>
<td>32</td>
<td>6.85</td>
<td>10</td>
<td>42</td>
</tr>
<tr>
<td>Constraints to Wellbeing</td>
<td>23</td>
<td>8.07</td>
<td>7</td>
<td>42</td>
</tr>
</tbody>
</table>

*Highest possible Total MAT score= 84; Highest possible score on each construct= 42*

Reliability

Internal consistency was computed on the total MAT, resulting in a Cronbach’s alpha (α) of .784. For the Adjustment Strategies construct, the internal consistency was .780 and Constraints to Wellbeing construct at .763.

Confirmatory Factory Analysis (CFA)

In order to confirm the preliminary factor validity of the MAT (K. Mueller et al., 2021), a CFA was performed to examine whether the hypothesized model fit the baseline data. Figure 2 contains the 2-factor model with the standardized coefficients obtained through the CFA. All coefficients achieved high loadings (> .30) with statistically significant results (p < .05). The fit indices from the CFA strongly fit to the data (CFI = .950, RMSEA = 0.056 (95%CI: 0.004 to 0.088), TLI= 0.933, and SRMR = 0.074).
Figure 2. Confirmed Model of the CFA for the MAT in this study (n=108). CFI, Bentler’s comparative fix index (> .95); RMSEA, Root mean square error of approximation (0.06 or below); TLI, Tucker-Lewis index (> .95); SRMR, Standard root mean square residual (< 0.09).

Discussion

This study aimed to confirm the factor validity of the MAT in a nationwide sample of older adults transitioning into ALFs. Findings from a CFA model demonstrated excellent fit to the data, which further affirms the hypothesized 2-factor MAT with the two constructs of adjustment strategies and constraints to wellbeing. Further results confirm the scale’s reliability with acceptable results for the total MAT and both constructs of adjustment strategies and constraints to wellbeing. These results provide evidence of the 2-factor MAT as nationally representative of older adults’ wellbeing when relocating into ALFs. Prior to the MAT, no assessment existed to quantify older adults’ wellbeing when transitioning into ALFs.

Although all items loaded acceptably onto the two constructs, two of the Constraints to Wellbeing items (MAT_2: feeling worse physically and MAT_3: feeling a
loss in your important possessions) had lower loadings in this study compared to the pilot study (Mueller et al., 2021). It is unclear why this occurred, but it may be due to the nationwide representation differing from the pilot sample of where data was primarily from older adults in the Southern region of the United States. Additionally, the total MAT scores during older adults’ transitions were an average of 55 out of a possible 84. This may indicate that older adults experience threats to their wellbeing during their transition into ALFs. Previous research on older adults’ wellbeing has been intervention-based for older adults living in ALF and did not focus on the transition process (Almomani & Bani-Issa, 2017; Resnick et al., 2015).

**Implications for Practice**

Implications for these results are numerous for understanding older adults’ wellbeing during a relocation into an ALF. First, healthcare practitioners can use the MAT as a standardized assessment for older adults moving into ALFs. The MAT responses be used to intentionally address older adults’ areas of need during a relocation into an ALF. Areas of need that could be identified from the MAT include influences on older adults’ wellbeing such as community engagement, social supports, perceived physical health, and the importance of maintaining family relationships, leisure hobbies, and spiritual practices. Addressing specific areas of need for older adults moving into the ALF aligns well with the practice of person-centered care, a best practice in older adult care (Van Haitsma et al., 2020; World Health Organization, 2018).

**Implications for Future Research**
Future research is needed to further explore implications for the MAT when understanding older adults’ wellbeing in transition. First, the MAT could be used as a pre/post assessment to examine pre/post changes in older adults’ wellbeing around an intervention intended to improve older adults’ wellbeing in their first month living in the ALF. Example of such interventions intended to improve older adults’ wellbeing include stress management like yoga (Bonura & Tenenbaum, 2014; Tulloch et al., 2018) and guided imagery (Zaki et al., 2018), along with community building exercises to establish stronger relationships with other people in the ALF (O’Rourke et al., 2018; Street & Burge, 2012; Wu, 2020). Secondly, additional research is also needed to examine the relationship between MAT scores and other factors like older adults’ perceived functional abilities, past medical history, family caregiver relationships, and feelings of independence in the ALF. Lastly, future studies should establish cut-off scores on the MAT to identify older adults who many need additional support during their transition into the ALF, as indicated by low MAT scores showing low wellbeing.

**Limitations**

Although this study standardizes the MAT as a tool for measuring older adults’ wellbeing when in transition, some limitations persist. As the MAT was tested for older adults in ALFs who were thinking back to their transition experiences, recall bias is possible. An additional limitation is that participants’ recall times varied from several days up to two years post transition. This study also used cross-sectional data that did not study the temporal reliability of the MAT, such as test-retest analysis. Convergent validity by comparing MAT results to other validated assessment tools would be valuable.
for future research to strengthen the MAT. Additionally, the COVID-19 pandemic added many challenges during this study including that older adults were possibly changing their views of wellbeing during the pandemic, a concept that needs further investigation. The sample of this study all identified as White, limiting the voices of diverse and minority populations in the findings. Further, the MAT was only tested on older adults transitioning into ALFs, leading to the need for more research using the MAT for other older adult settings like ILFs, LTCFs, and adult day programs. Additionally, older adults with moderate to severe cognitive impairments were excluded from this study, and thus these data may not be representative of their transition experiences into ALFs. Future studies should consider modifying the MAT to include older adults with cognitive impairments. Lastly, the influence of the COVID-19 pandemic on MAT items that addressed community outings, family/friend visitors, and social interactions with staff and residents is unknown, and thus a replication study post-pandemic may be beneficial.

**Conclusions**

The main strengths of this study are the standardization of the MAT as shown by the strong fit indices of the hypothesized model as the first assessment to measure older adults’ wellbeing when moving into ALF. The MAT total and construct scores allow for comparison between positive (adjustment strategies) and negative (constraints to wellbeing) influences on wellbeing. Lastly, the results of the MAT can be used to better inform healthcare professionals of specific areas of need for older adults in transition into ALFs. Future studies will be needed to increase the convergent and divergent validity of the MAT with other measures related to older adults’ wellbeing.
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CHAPTER 6: IS THERE A RELATIONSHIP BETWEEN HEALTH AND WELLBEING DURING OLDER ADULTS’ TRANSITIONS INTO ASSISTED LIVING FACILITIES?

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Dr. Christy Brown, Ph.D.
Dr. Brandi M. Crowe Ph.D., LRT/CTRS
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Intended for Therapeutic Recreation Journal
Abstract

Older adults’ wellbeing during a transition into an assisted living facility (ALF) may be associated with their functional abilities and their health conditions, but these associations are relatively unknown. The Mueller Assessment of Transition (MAT) measures the impact of transition on older adults’ wellbeing when relocating into ALFs. In comparison, the Health Assessment Questionnaire Disability Index (HAQ-DI) assesses older adults’ functional abilities. Using these two assessments, the purpose of this study was to understand the bidirectional relationships between older adults’ health and their wellbeing at time of transition. A secondary analysis was conducted for a cross-sectional study with older adult participants transitioning into ALFs. Findings indicated significant relationships between older adults’ health conditions, functional abilities, and wellbeing at time of transition. Implications for recreational therapists and other older adult practitioners in ALFs are described along with future research recommendations.

Keywords: transitions, wellbeing, functional abilities, genitourinary health conditions, assisted living facilities, older adults, multiple linear regression
Introduction

Older adults move into assisted living facilities (ALFs) to receive additional services and support. By 2040, the number of older adults moving into ALFs will reach nearly 1 million across the United States (Parkman, 2021). ALFs vary from long-term care facilities (LTCFs) in that ALFs provide some staff assistance for activities of daily living (ADLs), but not 24/7 skilled nursing care (Zimmerman & Sloane, 2007).

Older adults may have varying health conditions that negatively influence their transitions into ALFs (Brown, 2018). Cardiovascular conditions are associated with older adults’ reduction in mobility and shortness of breath (Naylor et al., 2004). Other respiratory conditions can add to shortness of breath symptoms, such as chronic obstructive pulmonary disease or asthma, which have been shown to limit older adults’ physical stamina for activities (Falvey et al., 2016). Current literature also reported that older adults with musculoskeletal conditions are at higher risk for falls and isolation due to lack of mobility and muscular strength (Lang et al., 2009). Genitourinary conditions like incontinence and catheter use can burden family caregivers who support older adults’ functional needs (Davis et al., 2021). Based on the prevalence and severity of these health conditions, older adults may also experience negative impacts on their perceived functional abilities.

Functional abilities are described as the physical and mental tasks necessary for older adults to perform activities of daily living such as rising, eating, dressing, walking, hygiene, grip, reach, and engaging in the community (Wolfe, 1989). For example, older adults relocating into ALFs may find their perceived functional abilities changing based
on newfound routines where some older adults need to ambulate longer distances within the ALF. Older adults may also experience changes in their perceived functional abilities in ALFs from the prevalence/severity of health conditions and participation (or lack of) in daily and leisure activities (Mulry, 2012). Although older adults living in ALFs are generally healthier than those in LTCFs, older adults in ALFs have demonstrated reductions in functional abilities over time (Mulry, 2012; Resnick et al., 2015; Stevenson & Grabowski, 2010). Overall, these changes in functional abilities may ultimately influence older adults’ wellbeing at time of transition (Mueller et al., in progress; Mulry, 2012).

Wellbeing is defined as the state when older adults have their needed social, physical, and psychological resources met (Dodge et al., 2012), and in this study is applied to the challenges associated with transition into an ALF. The transition process into ALFs may positively or negatively impact the wellbeing of older adults because of various factors and circumstances surrounding their relocation (Mueller et al., in progress; Scott & Mayo, 2019). Understanding older adults’ wellbeing during their move into ALFs is essential because it may contribute to changes in their health and functional abilities (Holmes et al., 2017; Mueller et al., in review; Mulry, 2012; Resnick et al., 2015).

Past research has shown a connection between older adults’ functional abilities and wellbeing as older adults with more physical abilities are associated with having higher levels of perceived wellbeing (c.f. Davis et al., 2015; Ehlers et al., 2018; Leyland et al., 2019; Spirduso & Cronin, 2001). Additionally, older adults who experience stress
during a transition into ALFs are at higher risk of experiencing a reduction in their physical and mental health (Mulry, 2012; Scott & Mayo, 2019). Some older adults may even develop additional challenges, such as depression and anxiety, from experiencing declines in physical functional abilities as residents in ALFs (Almomani & Bani-Issa, 2017; Jun et al., 2015). Alternatively, older adults in transition who engage in positive adjustment strategies, such as making connections with other residents, finding new routines, and actively participating in health-promoting programs have been shown to maintain or increase their wellbeing and functional abilities (Fields et al., 2012; Mueller et al., 2021; Tompkins et al., 2012).

Many times, recreational therapists and other older adult healthcare professionals in ALFs are responsible for implementing these health-promoting programs to maintain or improve older adults’ functional abilities and wellbeing (American Therapeutic Recreation Association, 2016; Fields et al., 2012; Leitner & Leitner, 2011; Richeson & Sardina, 2016), with engagement in these programs yielding positive outcomes (Adams et al., 2019; Mueller et al., 2021; Resnick et al., 2015). However, it is still unclear if there are bidirectional associations between older adults’ wellbeing, their health conditions, and their functional abilities when relocating into ALFs. Therefore, this study aims to better understand the relationships between older adults’ health and their wellbeing at time of transition.

Methods

This research is a secondary analysis of a cross-sectional study that occurred in ALFs across the United States. Methods are summarized here and can be found in full
detail elsewhere (Mueller et al., *in progress*). Participants in this study were older adults who had transitioned into ALFs and met the following criteria: became a resident of an ALF after March 2018, had English reading proficiency, and scored a four or higher on the Six Item Screener (SIS) (Callahan et al., 2001). Participants were excluded from the study if they had moderate to severe memory impairment, were on a ventilator so could not provide verbal communication, or were receiving end-of-life care. A local university institutional review board approved this study in the Southern United States. Each ALF site had an identified site liaison to help distribute the questionnaires to eligible participants. After site liaisons identified eligible participants, site liaisons then assessed the cognitive abilities of eligible participants using the SIS less than one week before distributing the questionnaire. Once an eligible participant gave consent to participate, they received a questionnaire and writing instrument from the site liaison. Participants completed questionnaires in a private area of the ALF to ensure confidentiality. Lastly, the site liaison returned completed questionnaires to the research team.

**Data Collection**

Data were collected in two separate phases: screening and primary data collection. In the primary stage, data were collected using a self-reported questionnaire composed of four components: demographic questions, past/current health conditions, functional abilities, and wellbeing at time of transition. Health conditions were perceived by participants and were not physician documented.

**Screening**
The SIS was used by staff liaisons at the ALFs as a cognitive screener to ensure participants met the study inclusion requirements. Higher scores on the SIS indicate higher levels of cognitive functioning (Callahan et al., 2001).

**Demographic Questions**

Demographic questions included age, gender, marital status, and the number of times moved in a lifetime. Additional questions included the participants’ move-in date into the ALF, race/ethnic identification, educational level, and military veteran (or spouse’s military veteran) status.

**Past/Current Health Conditions**

Additional questions asked about participants’ past/current health conditions included the following categories: head, eye, ear, nose, throat; respiratory; cardiovascular; gastrointestinal; genitourinary; endocrine; musculoskeletal; dermatologic; and psychiatric. Subcategories were listed for specific health diagnoses related to the larger category.

**Health Assessment Questionnaire Disability Index (HAQ-DI)**

The HAQ-DI was used to measure participants’ perceived functional abilities as residents of the ALF. The HAQ-DI is a valid and reliable, self-administered assessment that includes 20 questions on upper and lower body movements separated into eight categories of functional activities: rising, eating, dressing, walking, hygiene, grip, reach, and usual activities (Fries et al., 1982). The HAQ-DI was created as a self-report functional abilities assessment to evaluate disability related to rheumatoid arthritis but has since been validated for the general population of older adults (Cuperus et al., 2015;
This is the first known study that uses the HAQ-DI to measure older adults’ functional abilities as residents in ALFs. The directions of the HAQ-DI ask participants to answer each question while reflecting on their perceived functional abilities over the past week. Each question starts with the prompt “Are you able to” perform a particular task, and participants respond on a scale from 0 (no difficulty) to 3 (unable to do). The highest component score in each category determines the score for that category unless aids or devices are needed (Wolfe, 1989). If a participant depends on equipment or physical assistance, the score of that category increases to 2 to represent the underlying disability more accurately. The eight category scores are then averaged into an overall HAQ-DI score on a scale from 0 to 3. A participant must have category scores for at least six of the eight categories for an overall score to be computed (Wolfe, 1989). Scores of the HAQ-DI are interpreted as 0 to 1 for mild to moderate difficulty, 1 to 2 for moderate to severe disability, and 2 to 3 for severe to very severe disability (Bruce & Fries, 2003).

**Mueller Assessment of Transition (MAT)**

The MAT was used to evaluate participants’ wellbeing during their transition into the ALF. The MAT includes 12, closed-ended items with two subscales (six adjustment strategies and six constraints to wellbeing items) (Mueller et al., in progress). Each MAT item identifies how well participants agree with statements about influences on their wellbeing on a seven-point Likert scale from 1 = strongly disagree to 7 = strongly agree. The MAT directions ask participants to answer each question while reflecting on their first month in the ALF. The sum of the MAT items creates a total scale score where
higher scores represent higher perceived wellbeing at time of transition. The MAT also includes two subscales that measure positive and negative influences on older adults’ wellbeing named adjustment strategies and constraints to wellbeing (Mueller et al., in progress). The highest total score for the MAT is 84, and each subscale’s highest total is 42. When tested with older adults transitioning into ALFs, the MAT demonstrated reasonable construct validity and adequate internal validity (Cronbach’s alpha from .784) (Mueller et al., in progress).

Statistical Analysis

Data were entered into IBM SPSS version 28 for analysis (IBM Corp, 2021). The PI compared the inputted data to the raw data to ensure accuracy. Normality was assessed on all descriptive statistics. The proportion of missing variables was considered on all individual items, total MAT, total HAQ-DI, and demographic questions, including past/current health conditions. Composite scores were created for each subscale to test the relationship of the two constructs of the MAT (i.e., adjustment strategies and constraints to wellbeing).

This study hypothesized two multiple linear regression models to test the relationship between older adults’ wellbeing at time of transition, functional abilities, and past/current health conditions. The health conditions and MAT items were asked of participants during their relocation into the ALF resulting in Model 1: Older adults’ health conditions predictive of their wellbeing at time of transition. However, the MAT asked participants to recall back to their transitions, yet the instructions of the HAQ-DI
asked about health over the past week. Therefore, Model 2 hypothesized older adults’ wellbeing at the time of transition predicting their functional abilities in the ALF.

Results

A total of 108 older adults completed questionnaires. See Table 1 for demographic information that is also summarized here. Participants were located in all four regions of the United States, with the majority from the South (62%) and Midwest (24%). This sample was primarily females (75%), aged 57-97 (mean= 84.22, standard deviation (SD)= 8.09). Of the participants, 67% were widowed, just under half were spouses of military veterans (43%), and participants had primarily moved into the ALF from a residence in the community (69%). Participants had a median of five or more moves in their lifetimes before relocating into the ALF. All participants identified as White and had moved into the ALF after March 2018, with the majority (60%) transitioning during the COVID-19 pandemic.

Table 1.
Participant Demographics

| Age | M = 84.22; SD = 8.09; range= 57-97 |
| Participant gender |  |
| Female | 81 (75%) |
| Male | 22 (20%) |
| Missing | 5 (5%) |
| Region of the United States |  |
| South | 67 (62%) |
| Midwest | 26 (24%) |
| West | 8 (7%) |
| Northeast | 7 (7%) |
| Previous residence before ALF |  |
| Living in a residence in the community | 75 (69%) |
| Living in another assisted living facility | 11 (10%) |
| Living in the independent living area of this facility | 8 (7%) |
| Living in another independent living facility | 4 (4%) |
| Living in a family member’s home | 4 (4%) |
| Number of times moved in lifetime | Mdn= 5 |
| Participant marital status |  |
| Widowed | 72 (67%) |
| Married | 13 (12%) |
| Divorced | 11 (10%) |
| Single, never married | 6 (6%) |
| Member of unmarried couple | 1 (1%) |
| Missing | 5 (5%) |
| Past/current health conditions |  |
| Musculoskeletal | 72 (67%) |
| back or joint pain, arthritis, artificial knee, or hip joints |  |
| Head, Eye, Ear, Nose, Throat | 67 (62%) |
| cataracts, macular degeneration, blindness, hearing loss, difficulty swallowing, migraines, seizures |  |
| Psychiatric | 49 (45%) |
| anxiety, depression, memory loss |  |
| Gastrointestinal | 43 (40%) |
| ulcer disease, heartburn, diarrhea and/or constipation |  |
| Cardiovascular | 39 (36%) |
| chest pain, irregular heart rate, heart murmur, ankle swelling |  |
| Genitourinary | 38 (35%) |
| incontinence, kidney stones, catheter |  |
| Dermatologic | 24 (22%) |
| unhealed sores, skin caner |  |
| Endocrine | 22 (20%) |
| diabetes |  |
| Respiratory | 21 (19%) |
| COPD, asthma, oxygen dependent, tuberculosis |  |
| Military veteran | 13 (12%) |
| Spouse as military veteran | 47 (43%) |
| Race/Ethnicity (White) | 103 (95%) |
Missing Transitioned during COVID-19 pandemic
5 (5%) 65 (60%)
(after March 2020)

Health: Past/Current Health Conditions and HAQ-DI

For this sample, 85% (n=92) of participants completed the questions on past/current health conditions. Many participants reported having musculoskeletal health conditions (67%) or head, eye, ear, nose, throat health conditions (62%), with some participants reporting psychiatric health conditions (45%). Participants also had the following health conditions: gastrointestinal (39%), cardiovascular (36%), genitourinary (35%), dermatologic (22%), endocrine (20%), and respiratory (19%). For the HAQ-DI scores, 93% (n=100) completed all the items. Mean, standard deviations, and range responses were also calculated for the HAQ-DI at 1.81(0.81); range 0 – 2.88.

Findings from multiple linear regression models are found in Table 2 and summarized here. Non-significant results occurred in Model 1 (F(1, 88)= 61.46, p =0.176, R2 = 0.143), yet significance was found for genitourinary health conditions as predictors of older adults’ wellbeing at time of transition (t (88)= 2.03, p = 0.024). Model refinement through backward elimination of health condition items was conducted to address collinearity until only the significant finding of genitourinary health conditions remained (t (88) = 2.62, p= 0.01). All other health conditions as predictors of wellbeing at time of transition were non-significant.
Table 2.
Model 1: Health Conditions as Predictors of Wellbeing at Time of Transition

<table>
<thead>
<tr>
<th>Predictor</th>
<th>B</th>
<th>SE</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Health Conditions</td>
<td>41.66</td>
<td>10.04</td>
<td>4.16</td>
<td>88</td>
<td>.176</td>
</tr>
<tr>
<td>Genitourinary</td>
<td>.244</td>
<td>2.75</td>
<td>2.03</td>
<td>88</td>
<td>.024*</td>
</tr>
<tr>
<td>Endocrine</td>
<td>.208</td>
<td>3.04</td>
<td>1.89</td>
<td>88</td>
<td>.063</td>
</tr>
<tr>
<td>Dermatologic</td>
<td>-.143</td>
<td>3.05</td>
<td>-1.26</td>
<td>88</td>
<td>.212</td>
</tr>
<tr>
<td>Psychiatric</td>
<td>-.134</td>
<td>2.67</td>
<td>-1.19</td>
<td>88</td>
<td>.239</td>
</tr>
<tr>
<td>Cardiovascular</td>
<td>.133</td>
<td>2.82</td>
<td>1.13</td>
<td>88</td>
<td>.264</td>
</tr>
<tr>
<td>Head, Eye, Ear, Nose, Throat</td>
<td>.091</td>
<td>3.03</td>
<td>.814</td>
<td>88</td>
<td>.418</td>
</tr>
<tr>
<td>Gastrointestinal</td>
<td>-.067</td>
<td>2.70</td>
<td>-.593</td>
<td>88</td>
<td>.555</td>
</tr>
<tr>
<td>Respiratory</td>
<td>-.059</td>
<td>3.08</td>
<td>-.537</td>
<td>88</td>
<td>.593</td>
</tr>
<tr>
<td>Musculoskeletal</td>
<td>.059</td>
<td>3.28</td>
<td>.514</td>
<td>88</td>
<td>.608</td>
</tr>
</tbody>
</table>

Note. *p < .05

Wellbeing: MAT

For the MAT, 100% (n=108) of the participants completed all items. Normality was tested, and composite scores were created for the two constructs (adjustment strategies and constraints to wellbeing) to score the MAT. Adding the 12 items in the MAT totaled 84 as the highest score, with adjustment strategies and constraints to wellbeing each at 42 (calculated by totaling the six construct items). MAT total mean scores were 55 (11.94), range 21-84, with the total mean score for adjustment strategies at 32 (6.85), range 10–42, and the total mean constraints to wellbeing at 23 (8.07), range 7-42.

Multiple regression results on Model 2 are displayed in Table 3 and summarized here. Model 2 yielded significant results (F(1, 106)= 6.66, p =0.01, R² = 0.059) as
participants’ functional abilities increased .243 SE for every 1 SD unit increase in wellbeing at time of transition. Model 2b also indicated significant findings (F(1, 106)= 6.78, p =0.01, R² = 0.060), as participants’ functional abilities decreased .245 SE for every 1 SD increase of constraints to wellbeing. Non-significant results were found on Model 2a for adjustment strategies predicting functional abilities (F(1, 106)= 1.96, p =0.17, R² = 0.018).

Table 3.
Model 2: Wellbeing at Time of Transition as Predictor of Functional Abilities

<table>
<thead>
<tr>
<th>Predictors</th>
<th>B</th>
<th>SE</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Total MAT</td>
<td>.243</td>
<td>.791</td>
<td>2.58</td>
<td>106</td>
<td>.01*</td>
</tr>
<tr>
<td>2a. Adjustment Strategies</td>
<td>-.135</td>
<td>.808</td>
<td>-1.40</td>
<td>106</td>
<td>.17</td>
</tr>
<tr>
<td>2b. Constraints to Wellbeing</td>
<td>-.245</td>
<td>.791</td>
<td>-0.26</td>
<td>106</td>
<td>.01*</td>
</tr>
</tbody>
</table>

Note. *p < .05

Discussion

Findings in this study indicated significant bidirectional relationships between older adults’ health conditions, functional abilities, and their wellbeing at time of transition into ALFs. Significant results showed genitourinary health conditions such as incontinence, kidney stones, or catheter usage as predictors of wellbeing at time of transition. This aligns with previous literature where older adults with incontinence experienced lower quality of life with a strong level of certainty (Pizzol et al., 2021), yet this systematic review study did not include studies with older adults in transition.

Another finding in this study showed that older adults’ wellbeing during transition predict their functional abilities in the ALF. This finding indicates that older adults with higher MAT scores showed significantly higher functional abilities to complete daily tasks. Past
studies used other constructs such as life outlook, resilience, and coping as predictors of wellbeing or health (Mayordomo et al., 2016; Ramos & Brown, 2020), but few have used wellbeing to predict health (Keister, 2006).

Additionally, this study found that more constraints to older adults’ wellbeing at transition significantly predicted increased difficulty for them to perform their functional abilities. Previous research is similar, as community-dwelling older adults’ wellbeing and physical functioning were related (Parra-Rizo & Sanchis-Soler, 2020), and deficits in older adults’ social, cognitive, and physical functioning were found related to their lower wellbeing (Cramm et al., 2013). Some have studied this relationship for older adults’ in LTClFs (Grönstedt et al., 2011); however, the connection between older adults’ wellbeing at time of transition into ALFs and their functional abilities in this study is novel.

Although adjustment strategies did not significantly predict older adults’ functional abilities in this current sample, average scores for adjustment strategies (32) were higher than average constraints to wellbeing (23). Reasoning for this finding may be the lack of MAT items about functional tasks, but instead more focused on psychosocial aspects of the transition.

Overall, this study yielded important findings about older adults’ genitourinary health conditions as predictive of their wellbeing at time of transition, and older adults’ wellbeing at time of transition predicting their functional abilities in ALFs. This study is also the first to measure older adults’ wellbeing using the MAT compared to the HAQ-DI’s functional abilities.

Limitations and Future Research Recommendations
Some findings of this study are novel, yet limitations exist. One limitation of this study is that older adults’ functional abilities were asked in the present time, yet participants recalled their health conditions and wellbeing during the transition. Future research should consider assessing the wellbeing and health simultaneously during older adults’ transitions into ALFs and health as documented by a physician. Another limitation is the lack of diversity in the sample, and future studies should consider older adult participants from various racial, ethnic, and socioeconomic backgrounds. A third limitation is a threat to internal validity from the event of the COVID-19 pandemic that may have influenced participants’ responses regarding their wellbeing and health. A post-pandemic replication study would be beneficial to confirm these findings. Further research is needed to examine the relationship between specific diagnoses of health conditions (i.e., incontinence) and older adults’ wellbeing during a transition into ALFs that was not conducted in this study. Next, intervention-based research is needed using both the MAT and HAQ-DI as outcome-based measures around health-promoting programs to determine the impact on older adults’ wellbeing and health during a transition into ALFs. The MAT and HAQ-DI could be used as pre/post assessments around interventions within the first month of the transition. Lastly, the last two sections of the HAQ-DI asked participants about functional tasks they completed in the past week. However, some of the tasks (i.e., running errands and shopping, doing chores, shampooing hair) may not have applied to the participants living in the ALF and may have created confusion when answering HAQ-DI. Future research should consider using
additional assessments to measure perceived functional abilities for older adults living in ALFs.

**Implications for Recreational Therapy (RT) Practice**

The use of the MAT to measure older adults’ wellbeing at time of transition and the HAQ-DI to measure older adults’ functional abilities have important implications for RT practice. First, recreational therapists can use the MAT and HAQ-DI as standardized assessments for older adults moving into ALFs. The recreational therapist could create a resident-centered treatment plan to address older adults’ areas of need while relocating into an ALF based on the total MAT and HAQ-DI scores. Areas of need that could be identified from the MAT include influences on older adults’ wellbeing such as community engagement, social supports, perceived physical health, and the importance of maintaining family relationships, leisure hobbies, and spiritual practices. Furthermore, areas of need from the HAQ-DI could include functional tasks that older adults require additional support, including community engagement. Based on the resident's treatment plan, recreational therapists could plan evidence-based, health-promotion programs to address the areas of need. Examples of these health-promoting programs include seated chair exercises (Ageless Grace, 2020), adapted sports (Bedini et al., 2019), yoga (Adams et al., 2019), cognitive restructuring for fear of falling (National Council on Aging, 2019), and reminiscence therapy (Bohlmeijer et al., 2007; O’Hora & Roberto, 2019).

Arguably the most important implication of this study is for recreational therapists to use the MAT and HAQ-DI as pre-post assessments to examine wellbeing and health outcomes. The changes in wellbeing and functional abilities using these assessments
could serve as the evaluation step of the APIED process (National Council for Therapeutic Recreation Certification, 2020). In summary, this study shows a bidirectional relationship between older adults’ wellbeing at time of transition and their health for their health conditions and functional abilities. This information is important to recreational therapists who provide interventions to reach older adults’ goals of increasing wellbeing and health while living in ALFs.
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CONCLUSION

Before addressing the conclusion of this dissertation, the event of the COVID-19 pandemic must be addressed. Many pivots were made in the site recruitment to find 100 eligible participants for data collection needed to perform a confirmatory factor analysis (CFA). For site recruitment, ALF site liaisons were experiencing unprecedented times and struggled to commit to helping distribute questionnaires for this study. Some of these unusual events included the COVID-19 outbreaks in residents and staff that resulted in the ALF moving into lockdown and the three rounds of COVID-19 vaccine rollouts (occurring approximately in December 2020, May 2021, and October 2021).

Additionally, staffing shortages were rampant from staff burnout and staff layoffs from ALFs in financial straits or site liaisons’ refusal to be vaccinated for COVID-19. These unprecedented events led previously committed site liaisons to change their minds about their assisting with questionnaire distribution. Despite follow-up emails and phone calls, the PI often never heard from some committed site liaisons. These cases of “ghosting” could be the result of staff turnover with the site liaison not relaying commitment to the study to a replacement, site liaison contracting COVID-19 with more severe symptoms, or site liaison experiencing burnout with needing to provide duties outside of their typical scope of practice due to staffing shortages or COVID-19 infection outbreaks. In other instances, the site liaison was eager to help distribute questionnaires only to have their supervising administrators requesting they do not commit to helping to prevent staff burnout from already short-staffed sites.
With all these setbacks, the PI and research team made some strategic pivots to ensure participants completed questionnaires. First, questionnaire distribution pivoted from postal mail to emails to the site liaisons to bypass the prolonged postal service during the COVID-19 pandemic. Site liaisons were then encouraged to scan and send completed questionnaires back to PI to reduce slow postage mail time for data processing. Secondly, the PI started to lean heavily on social media outlets like Facebook and LinkedIn where ALF sites posted their monthly calendars of activities. ALF monthly calendars provided insights into which ALF sites may be more able to help with questionnaire distribution as sites with more daily activities were often not experiencing a COVID-19 outbreak or staffing shortages. The PI also used Facebook and LinkedIn to target ALF sites in regions that needed additional participants as the social media platforms stated the location of their ALF on their Facebook page. Thirdly, towards the end of the data collection period (approx. November 2021), the COVID-19 outbreaks occurred less frequently in the Southern region where the PI resided. Therefore, the PI obtained consent from the ethical review board and 2 ALF sites to distribute the questionnaires to eligible participants. This “last push” in November 2021 allowed for 23% of the completed questionnaires to be collected, resulting in the needed sample number of participants. Overall, the COVID-19 pandemic resulted in challenges and setbacks for this dissertation; however, the PI and research team strategically pivoted to overcome difficulties to reach this study’s final sample.

Summary of Major Findings
This study included a final sample of 108 older adult participants from 15 ALFs across the United States. The purpose of this research was to create and analyze the factor structure and psychometric properties of the Mueller Assessment of Transition (MAT). Overall, results indicated an appropriate factor structure for the MAT after employing an exploratory factor analysis (EFA). Further findings from a confirmatory factor analysis (CFA) showed strong fit indices to confirm the hypothesized model of the MAT. Multiple regression analyses resulted in older adults’ wellbeing at time of transition into the ALF predictive of their functional abilities. Results also indicated that older adults’ genitourinary health conditions predict lower wellbeing at time of transition. Additional explanations of each Specific aim are summarized below.

**Specific Aim 1**

The purpose of this study was to analyze the factor structure of the MAT. Data were collected using the 20-item MAT to measure older adults’ wellbeing when transitioning into ALFs. Findings indicated a 2-factor structure that included the constructs of adjustment strategies and constraints to wellbeing, with each construct including six items, resulting in the 12 final MAT items. Another interesting result showed that older adults who moved into ALFs during the COVID-19 pandemic scored lower on the MAT than those who transitioned before the pandemic. Therefore, older adults transitioning into ALFs during the pandemic may have experienced more constraints to their wellbeing or fewer adjustment strategies during their relocation.

**Specific Aim 2**
The purpose of this study was to establish the psychometric properties of the MAT. Participants completed the MAT to measure their wellbeing when relocating into ALFs. The CFA results in strong fit to confirm the hypothesized model using the following indicators: comparative fit index (CFI), Tucker-Lewis index (TLI), root mean square residual error of estimation (RMSEA), and standardized root mean square residual (SRMA). The two hypothesized constructs of adjustment strategies and constraints to wellbeing were also confirmed through the CFA for the final MAT. Additionally, findings showed the MAT total mean score was 55 (11.94), with the total mean score for Adjustment Strategies at 32 (6.85) and the total mean Constraints to Wellbeing at 23 (8.07). Since the total possible score for the MAT is 84, the average score of 55 indicates improvement is needed for this sample to increase these older adults' wellbeing during the transition to ALFs.

**Specific Aim 3**

The purpose of this study was to use a list of health conditions, the HAQ-DI, and the MAT to understand the bidirectional relationships between older adults' health and their wellbeing at time of transition into ALFs. This secondary analysis discovered significant results for older adults' genitourinary health conditions predicting their wellbeing at time of transition. Further findings indicated that older adults' wellbeing at transition predicts their functional abilities when living in the ALF. This paper provided practical implications for recreational therapists and other older adult healthcare practitioners working with older adults in ALFs and presented future research recommendations.
Post Hoc Analyses

Further analyses were conducted as part of Specific Aim 3, but not included in the paper. The purpose of the post-hoc tests were to determine regional differences (Northeast, South, Midwest, or West) for completed MAT (including two constructs of adjustment strategies and constraints to wellbeing) and HAQ-DI assessments. Data were first analyzed by a multiple linear model using MANOVA as an omnibus test (Pillai test statistic = .508, \(F(36)= 1.613, p = 0.018\)) with the MAT items as dependent variables. This significant MANOVA result allowed for multiple testing of the data. Next, one-way ANOVAs were conducted for regional differences in MAT total scores, MAT construct scores (adjustment strategies and constraints to wellbeing), and HAQ-DI total scores. Non-significant results (\(p > 0.05\)) were found for all analyses, indicating no regional differences for the MAT, MAT constructs, and HAQ-DI total scores.

Contributions and Practical Implications

To our knowledge, this research is the first to establish a tool to measure older adults’ wellbeing when transitioning into ALFs. The implications of the MAT are numerous. First, older adult healthcare professionals, like recreational therapists (RTs), can use the MAT results to provide person-centered services, supports, and programs to older adults transitioning into ALFs. For example, if an older adult scored high for constraints to wellbeing (i.e., feeling worse physically and less engaged in their favorite hobbies) when relocating into the ALF, RTs could use the results of the standardized MAT assessment to assess the older adults’ needs. Assessing older adults’ needs and accounting for their strengths and weaknesses leads into writing personalized goals for
treatment planning. Examples of personalized goals include increasing physical health and strength through engaging in preferred physical activities like power walking or bocce ball. Another older adult may score low for using adjustment strategies (i.e., MAT item 5: finding a new routine, and MAT item 7: feeling strong support from other residents) during their transition into the ALF. Using the MAT results on these items, RTs could set goals with this older adult to attend specific recreational therapy programs throughout the week to work towards increasing a sense of community with other residents while also establishing a new routine.

Along with the MAT results, the HAQ-DI quantified older adults’ perceived functional abilities in ALFs. Implications from this research would be to utilize both the MAT and HAQ-DI to identify areas of need for older adults’ wellbeing and functional abilities at time of transition. Limitations to both measures exist and are described below. Furthermore, findings from this study showed genitourinary health conditions may be predictors of lower wellbeing for older adults at the time of their transition into ALFs, including the presence of genitourinary health conditions such as incontinence and catheter use. Older adult healthcare practitioners should be mindful of older adults’ health conditions that may ultimately influence their wellbeing during their transition.

Finally, this study demonstrated that older adults who moved into ALFs during the COVID-19 pandemic scored lower than those who transitioned before the start of the pandemic. Therefore, these results indicate that older adults’ wellbeing may have been more negatively impacted when relocating into ALFs during the pandemic.

**Future Research Recommendations**
Although novel contributions from these studies are noted, future research is warranted when using the MAT to measure older adults’ wellbeing during a transition. First, the MAT could be studied for efficacy as a pre/post measure during the transition process for an older adult relocating into the ALF. For example, the MAT could be completed at admission and then again each month for the first six months the older adult is living in the ALF to score their wellbeing. It would be hypothesized that older adults’ MAT scores may increase each month as they move across the Transition Process Framework (TPF) from maladaptation to adaption to living into the ALF (Brandburg, 2007; Mueller et al., 2021). Secondly, exploring the convergent validity of the MAT could be done by comparing the MAT results to other established and trusted standardized assessments. Future studies should consider utilizing other standardized assessments that measure quality of life (WHO Quality of Life- BREF), wellbeing (The Well-being Index), and life satisfaction (Life Satisfaction Questionnaire 9). These convergent validity studies will help further establish robust cut-off scores for the MAT to indicate the severity of threats to older adults’ wellbeing.

Lastly, further investigation is needed for using the MAT during a pandemic as the COVID-19 pandemic continues. Proposed future studies include exploring the MAT to measure older adults’ wellbeing upon admission during the pandemic, and follow-up at later date to determine the impact of pandemic protocols implemented at ALFs (i.e., lockdown of the facility, quarantine for new residents, etc.) (Center for Disease Control and Prevention [CDC], 2021). In many ALFs, the CDC recommended guidelines when locking down a facility to include terminating all group programming, communal dining,
and family visitors. So, the MAT could be studied to measure older adults’ wellbeing at the beginning and end of the lockdown period. Healthcare practitioners should be aware that older adults who transition during a lockdown may be more prone to negative influences on their wellbeing from the lack of available adjustment strategies like group outings, socializing with other residents and outside visitors, and freedom to do enjoyable activities in the ALF (CDC, 2021). In addition to lockdown, many facilities asked older adults who moved into ALFs during the pandemic to quarantine in their rooms for the first 10-14 days of their transition (CDC, 2021). Quarantine may largely limit older adults’ access to adjustment strategies and negatively influence their wellbeing when transitioning into ALFs. Therefore, this quarantine period would also be ideal for future investigation when using the MAT to score older adults’ wellbeing at the start, end, and even a month post-quarantine.

**Study Limitations**

**Measures**

**MAT.** The MAT is a novel tool that has only been tested in cross-sectional studies with older adults transitioning into ALFs and did not include those relocating into long-term care facilities, independent living facilities, or adult day centers. The MAT was also only studied at one point in time and could have been more robust as a longitudinal design with repeat measures. Additionally, the MAT asks participants to think back to their transition into the ALF, presenting the possibility of recall bias. This study also greatly varied on when older adults completed the MAT, with some recalling up to two years from their transition and others answering days after moving into the ALF. Also,
several site liaisons stated that some participants needed their MAT answers marked because they could not write steadily. This warrants investigation into the MAT being tested as a therapist-implemented interview instead of a self-administered tool.

**Threat to the MAT’s Internal Validity: COVID-19 Pandemic.** The most penetrating threat to internal validity is the ongoing COVID-19 pandemic. The data collection for this dissertation occurred during the pandemic, spanning from August 2020 through December 2021. Data collection needed to be pivoted on several occasions to ensure adequate sampling, including the PI distributing questionnaires in two ALF sites. Additionally, participants may have interpreted some questionnaire items differently due to the COVID-19 pandemic, including questions about community outings, family/friend visitors, engagement in health-promoting programs, and interactions with other residents and staff members. For many of the ALF sites during various times during the pandemic, community outings, outside visitors, health-promoting programs, and even face-to-face interactions with residents and staff were reduced or eliminated to stop the spread of the virus. As this dissertation studies older adults’ well-being, older adults’ interpretation of questionnaire items may have been skewed without these adjustment strategies.

Additionally, the high staff turnover rate resulting from COVID-19 vaccination policies for employees in ALFs and staff burnout may have also influenced participants’ answers to MAT items about feeling strong support from staff.

Further, some questionnaire items ask about participants’ perceived health and functional abilities. Participants’ responses to perceived health and functional ability items may have been altered in the pandemic as they may have changed their perceptions
of health. For some participants, not contracting COVID-19 or being on severe medical intervention due to the virus (like a ventilator) may have influenced their answers to have better health than before the COVID-19 pandemic. Due to these limitations from the COVID-19 pandemic, a replication study would be recommended to compare these findings to post-pandemic conditions.

**HAQ-DI.** The last two sections of the HAQ-DI asked participants to check if any assistive devices or supportive persons were used to complete any of the abilities over the past week. The HAQ-DI instructions (Wolfe, 1989) ask participants not to mark their abilities for tasks they did not complete in the past week. However, this was not stated in the standardized directions of the HAQ-DI, possibly creating confusion as some participants primarily marked “Unable to Do” for tasks they do not do anymore as residents of the ALF (i.e., shampoo hair, run errands and shop, and doing chores like vacuuming, housework, or light gardening). Considering these limitations of the HAQ-DI, future research may be conducted using additional assessments to measure perceived functional abilities of older adults living in ALFs.

**Participants and Sampling**

This study aimed to gather completed MATs from a nationwide representative sample of older adults across the United States. However, results showed no regional differences in the sample since the Western region was short 33 completed MATs (goal: 41), and the Northeast region needed one additional MAT (goal: 9). Many ALFs lack racial and ethnic diversity, and although data were collected from 15 ALFs, all participants in this study were White. This finding aligns with a recent statistic showing
that over 90% of older adults living in ALFs identify as White (Marak, 2021), but still voices of minority groups were missing from this study. Using a critical lens, more investigation is needed for why site liaisons did not include older adults of minority backgrounds in this sample. Future research should also explore why this lack of diversity exists by better understanding both cultural preferences for personal care (i.e., home care vs. facility-based care) and barriers to access for older adults in minority communities. Moreover, this sample included a larger than anticipated number of military veterans or spouses of military veterans, warranting if a sample of fewer military or military spouses would yield different findings. The presence of these military members and their spouses may influence findings as it is hypothesized that this group interprets relocations differently because of the atypical number of transitions over the lifetime. Lastly, older adults diagnosed with moderate cognitive impairments were excluded from this study, and their views may have been overlooked when understanding wellbeing during relocation into ALFs. It is recommended that future research consider using the MAT for older adults with moderate cognitive impairments, primarily if the MAT is implemented as older adults are moving in as opposed to recalling back to a transition experience.

Summary

Despite this dissertation occurring during the COVID-19 pandemic, strategic pivots in site and participant recruitment allowed sufficient data collection to produce novel findings. In summary, this dissertation contributed to the body of knowledge by creating and validating an assessment to measure older adults’ wellbeing when relocating
into ALFs. Using the MAT, further bidirectional relationships were yielded between older adults’ health conditions, functional abilities, and wellbeing at time of transition. Further interesting results were found in significant group differences in participants who transitioned during the COVID-19 pandemic than pre-pandemic. Older adult healthcare practitioners, including recreational therapists, are encouraged to use the MAT as a standardized tool for a new resident transitioning into an ALF to assess the older adults’ needs for future services, supports, and programs.
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APPENDICES
Appendix A: Aim 1 Site Liaison Training Information

DISTRIBUTING THE MAT SURVEY
Kaitlin Mueller, MS, CTRS
kedaly@g.clemson.edu

ABOUT ME
- 3rd year PhD Student in Recreational Therapy at Clemson University.
- My passion for this research comes from my prior experience as the Director of Recreation over a 115-bed assisted living facility.

PURPOSE OF THIS STUDY
- Test a tool called the Mueller Assessment of Transition (MAT).
- Measures wellbeing for older adults when they transition into an assisted-living facility (ALF).
- Long term outcomes: geriatric healthcare professionals can be better prepared to support/refer older adults to various services and programs as needed based on their MAT score.

CHOOSING PARTICIPANTS
- Three inclusion requirements:
  1. Current resident in your ALF
  2. Moved into the ALF after March 2018 – present day
  3. Score a 4 or higher on the Six Item Screener
  1. You can do this with the resident up to one week before they complete the MAT survey.

RECEIVING AND DISTRIBUTING SURVEY
- Here is the survey!
  - Any ballpark idea for how many residents may be eligible to complete the survey?
  - Distribute the survey to eligible participants in their rooms for privacy/confidentiality.
  - Do not help them fill out the survey! "Self-administered".
  - Verbally encourage residents to complete the entire survey, including the demographic questions at the end!

RETURNING SURVEYS

3/30/21
Scan surveys and email them back to me, since no identifiable information is included on the surveys
Be sure to shred paper copies once scanned
OR
Put completed surveys in an envelope and drop in the mail!
Will be reimbursed for postage

7 QUESTIONS?
Kaitlin Mueller
kedaly@g.clemson.edu
Appendix B: Aim 1 Demographic Questions

Your Background Information:

1. Sex
   □ Male
   □ Female
   □ Prefer not to say

2. Current Age: ________

3. What date did you move into this facility? ________/_____/__________

4. What is your current marital status?
   □ Married
   □ Member of an unmarried couple
   □ Single and never been married
   □ Widowed
   □ Divorced

5. What is your highest level of education?
   □ K-11
   □ High School Graduate
   □ Some College
   □ College Graduate
   □ Some post-graduate
   □ Post graduate degree

6. Were you or your spouse a military veteran?
   □ YES
      • If so, how many years active duty? __________
   □ NO

7. How many times have you moved your permanent residence in your lifetime?
   □ 1
   □ 2
   □ 3
   □ 4
   □ More than 5

8. Primary reason for moving into this assisted-living facility?
   ________________________________________________________________
Appendix C: Six Item Screener

SIX ITEM SCREENER FOR COGNITIVE IMPAIRMENT

I would like to ask you some questions that ask you to use your memory. I am going to name three objects. Please wait until I say all three words, then repeat them. Remember what they are because I am going to ask you to name them again in a few minutes. Please repeat these words for me: APPLE—TABLE—PENNY.

(Interviewer may repeat names 3 times if necessary but repetition not scored.)

Did patient correctly repeat all three words? Yes _____ No _____

1. What year is this? 0 1
2. What month is this? 0 1
3. What is the day of the week? 0 1

What were the three objects I asked you to remember?

4. Apple 0 1
5. Table 0 1
6. Penny 0 1

TOTAL _______
Appendix D: Informed Consent Form

Information about Being in a Research Study
Clemson University

Survey to Measure Wellbeing for Older Adults in Transition

KEY INFORMATION ABOUT THE RESEARCH STUDY

Voluntary Consent: Kaitlin Mueller is inviting you to volunteer for a research study. Kaitlin Mueller is a PhD Student in Recreational Therapy at Clemson University conducting the study with Dr. Marieke Van Puymbroeck, Dr. Brandi Crowe, and Dr. Nicole Davis in the Clemson’s Parks, Recreation, and Tourism Management and Nursing departments. You may choose not to take part and you may choose to stop taking part at any time. You will not be punished in any way if you decide not to be in the study or to stop taking part in the study. Participation is absolutely voluntary.

Study Purpose: The focus of this study is to test the Mueller Assessment of Transition (MAT), a short instrument that can be used to measure constraints to wellbeing and adjustment strategies experienced by older adults in the transition into an assisted living facility.

Activities and Procedures: Your part in the study will be to complete the questions of the self-administered MAT survey and background information about yourself. You may complete the survey in your room to ensure privacy and confidentiality. You may refuse to answer questions at any time if you become uncomfortable. You also choose to not complete the survey. This is a CONFIDENTIAL survey. Your place of residence and local region will not be identifiable in any future presentations or publications.

Participation Time: It will take you about 10-15 minutes to complete the MAT survey.

Risks and Discomforts: There are certain risks or discomforts that you might experience if you take part in this research. They include feeling discomfort from thinking about some of the aspects of your life that place stress on your wellbeing. Otherwise, we do not know of any risks or discomforts to you in this research study.

Possible Benefits: You may not benefit directly for taking part in this study, however, your insights into your perceived wellbeing will be used to strengthen the literature on helping older adults during transitions to a senior facility. We hope to do this in the future through having older adults in transition to a senior facility engage in various interventions to ease their transition.

EXCLUSION/INCLUSION REQUIREMENTS
In order to participate in this study, you must meet these three criteria. You must be a current resident of the assisted living facility, you must have moved into the facility between March 2018-present time, and you must score a 4 of 6 on the “Six Item Screener”.

PROTECTION OF PRIVACY AND CONFIDENTIALITY
Surveys will be deidentified as soon as possible, however, an original codebook (outlining participant with participant number/pseudonym) will be kept on a password computer for up to two years (while data analysis and results are finalized. The results of this study may be published in scientific journals, professional publications, or educational presentations. Identifiable information collected during the study will be removed and the de-identified information could be used for future research studies or distributed to another investigator for future research studies without additional informed consent from the participants.

CONTACT INFORMATION
If you have any questions or concerns about your rights in this research study, please contact the Clemson University Office of Research Compliance (ORC) at 864-656-0636 or irb@clemson.edu. If you are outside of the Upstate South Carolina area, please use the ORC’s toll-free number, 866-297-3071. The Clemson IRB will not be able to answer some study-specific questions. However, you may contact the Clemson IRB if the research staff cannot be reached or if you wish to speak with someone other than the research staff.
If you have any study related questions or if any problems arise, please contact Kaitlin Mueller at Clemson University at (864) 656-3400 and/or kedaly@g.clemson.edu.

CONSENT
By participating in the study, you indicate that you have read the information written above, been allowed to ask any questions, and you are voluntarily choosing to take part in this research.

A copy of this form is for you to keep.
Appendix E: Specific Aim 1 Pilot MAT Items

**Mueller Assessment of Transition (MAT)**

Instructions:
- For each of the questions, please recall back to the **first month** you moved into the assisted living facility.
- Please fill in the circle for how strongly you experienced the items listed below during your transition, from **strongly disagree** and **strongly agree**.

As you **transitioned** into the ALF, you **experienced**…

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree (1)</th>
<th>Disagree (2)</th>
<th>Somewhat Disagree (3)</th>
<th>Neutral (4)</th>
<th>Somewhat Agree (5)</th>
<th>Agree (6)</th>
<th>Strongly Agree (7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Feeling less independence.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>A loss of freedom from no longer driving a vehicle.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>3.</td>
<td>Feeling strong support from the staff.</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>5.</td>
<td>Feeling a loss in your important possessions.</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Feeling supported by visits with people who don’t live in the ALF.</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Comfort in a new daily routine.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>A sense of freedom from leaving the facility on outings.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Feeling strong support from other residents.</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td></td>
<td>Feeling comforted by engaging in your preferred spiritual practices.</td>
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<td></td>
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<tr>
<td>---</td>
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</tr>
<tr>
<td>11</td>
<td>Feeling a decrease in thinking clearly.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>12</td>
<td>Feeling a loss of enjoyable activities.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Less freedom to move around as you pleased.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Feeling better by attending exercise programs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Feeling a loss in your memory.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>A level of comfort from already being familiar with this facility.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>The freedom to choose where to place items in your new room.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Feeling less engaged in your favorite hobbies.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Feeling less freedom to host social gatherings with family and friends.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Feeling you could think more clearly by engaging in stimulating activities.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix F: Specific Aims 2 & 3 Site Liaison Training Information

The site liaison training includes the PI using a 16-slide PowerPoint presentation via Zoom call or phone call to go over the following information:

1. About the PI.
2. Purpose of this study.
3. Choosing participants (inclusion and exclusion requirements).
4. Instructions on implementing the Six Item Screener (SIS).
5. Invitation protocol for this study.
6. Instructions on using fidelity checklists.
7. Invitation script question 1.
8. Invitation script question 2.
10. Overview of the MAT items.
11. Returning the questionnaire.
12. ALF profile questions.
13. Allow for questions.
Appendix G: Site Liaison’s Participant Invitation Protocol and Fidelity Checklist

Prior to site liaisons inviting participants to complete the questionnaires, the PI will conduct training with the site liaison that will include this invitation protocol. The purpose of this invitation protocol is to create consistency in the data collection process across all ALF sites. Before starting this protocol, site liaisons will determine eligible participants to complete the questionnaires based on inclusion and exclusion criteria (including only approaching eligible participants who have scored at least a 4 of 6 on the Six Item Screener in the last week).

The site liaisons will use the script below to invite eligible participants to complete the questionnaires. Site liaisons will be trained to use the fidelity checklists to ensure participants are consistently being invited to complete questionnaires.

Invitation Script

Question 1:
Site Liaison:
“Hi _____, I am here to invite you to be part of a research study by completing a questionnaire for a PhD student. This questionnaire is hoping to measure your wellbeing when you moved into our assisted living facility. Is this something you’d be interested in helping with by filling out the questionnaire?”

If answer is NO:
Mark fidelity checklist

Site Liaison:
“No problem. Have a great rest of your day.”

If answer is YES:
Mark fidelity checklist

Question 2:
Site Liaison:
“Great! Here is an information sheet about the research for you to look over so you can consent to be part of the study. Do you want me to wait while you read it over or come back later to see if you are still interested in completing a questionnaire?”

If answer is COME BACK:
Mark fidelity checklist.
Site liaison will leave and return later in the day or the next day to proceed to invite eligible participant. Site liaison will only return ONE time to inquire about older adult’s participation in the study to avoid pressuring or social desirability.
If answer is WAIT:

Mark fidelity checklist.

*Site liaison will wait for participant to read over informed consent form.*

**Question 3:**

Site Liaison:

“After reading the information sheet about this research study, do you want to be part of this study by completing a questionnaire?”

If NO:

Mark fidelity checklist

Site Liaison:

“No problem. Have a great rest of your day.”

If YES:

Mark fidelity checklist

**Give Questionnaire:**

Site Liaison:

“Great! Here is a questionnaire for you to complete. Please handwrite your answers on the paper. I have been asked not to help you answer so the questions, so I will come back later today to pick up your completed questionnaire.”

*If participant needs help writing answers, site liaison will wait for them to read each question and then mark their answers. Site liaisons are discouraged from reading questions aloud of participants (i.e., interview style).*

*Site liaisons are also discouraged from providing clarification on questions. If a participant is confused about a particular question, site liaisons are encouraged to tell the participant to complete it to the best of their knowledge or to leave it blank and move onto other questions.*
Form A1: Invitation Fidelity Checklist
Note: This is only for site liaison’s use to ensure confidentiality of participants’ names from the research team.

<table>
<thead>
<tr>
<th>Participant Name</th>
<th>Question 1</th>
<th>Question 2</th>
<th>Question 3</th>
<th>Given Questionnaire</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Yes/No</td>
<td>Come Back/Wait</td>
<td>Yes/No</td>
<td>Yes/No</td>
</tr>
<tr>
<td>2.</td>
<td>Yes/No</td>
<td>Come Back/Wait</td>
<td>Yes/No</td>
<td>Yes/No</td>
</tr>
<tr>
<td>3.</td>
<td>Yes/No</td>
<td>Come Back/Wait</td>
<td>Yes/No</td>
<td>Yes/No</td>
</tr>
<tr>
<td>4.</td>
<td>Yes/No</td>
<td>Come Back/Wait</td>
<td>Yes/No</td>
<td>Yes/No</td>
</tr>
<tr>
<td>5.</td>
<td>Yes/No</td>
<td>Come Back/Wait</td>
<td>Yes/No</td>
<td>Yes/No</td>
</tr>
<tr>
<td>6.</td>
<td>Yes/No</td>
<td>Come Back/Wait</td>
<td>Yes/No</td>
<td>Yes/No</td>
</tr>
<tr>
<td>7.</td>
<td>Yes/No</td>
<td>Come Back/Wait</td>
<td>Yes/No</td>
<td>Yes/No</td>
</tr>
<tr>
<td>8.</td>
<td>Yes/No</td>
<td>Come Back/Wait</td>
<td>Yes/No</td>
<td>Yes/No</td>
</tr>
<tr>
<td>9.</td>
<td>Yes/No</td>
<td>Come Back/Wait</td>
<td>Yes/No</td>
<td>Yes/No</td>
</tr>
<tr>
<td>10.</td>
<td>Yes/No</td>
<td>Come Back/Wait</td>
<td>Yes/No</td>
<td>Yes/No</td>
</tr>
<tr>
<td>11.</td>
<td>Yes/No</td>
<td>Come Back/Wait</td>
<td>Yes/No</td>
<td>Yes/No</td>
</tr>
<tr>
<td>12.</td>
<td>Yes/No</td>
<td>Come Back/Wait</td>
<td>Yes/No</td>
<td>Yes/No</td>
</tr>
<tr>
<td>13.</td>
<td>Yes/No</td>
<td>Come Back/Wait</td>
<td>Yes/No</td>
<td>Yes/No</td>
</tr>
<tr>
<td>14.</td>
<td>Yes/No</td>
<td>Come Back/Wait</td>
<td>Yes/No</td>
<td>Yes/No</td>
</tr>
<tr>
<td>15.</td>
<td>Yes/No</td>
<td>Come Back/Wait</td>
<td>Yes/No</td>
<td>Yes/No</td>
</tr>
</tbody>
</table>
Appendix H: ALF Profile Information

1. How many beds does your ALF have? ____________

2. Please check all of the following services that your ALF offers:
   ____ 24/7 supervision and assistance
   ____ Exercise programs
   ____ Cognitive health programs
   ____ Mindfulness/ stress management programs
   ____ Spiritual programs
   ____ Meals and dining services
   ____ Medication management or assistance
   ____ Personal care services (such as help with activities of daily living (ADLs))
   ____ Transportation

3. Were your ALF residents not allowed to leave the ALF YES NO during the COVID-19 pandemic?
   If yes, what months were residents not permitted to leave the ALF? _________________
   (i.e. March 2020-April 2021)

4. Did your ALF not allow family or friend visitors YES NO during the COVID-19 pandemic?
   If yes, what months were visitors not allowed in the ALF? _________________
   (i.e. March 2020-April 2021)

5. Does your ALF offer staff-supervised community outings? YES NO
   If yes, did your ALF not allow community outings during the COVID-19 pandemic? YES NO
   If yes, what months were community outings not allowed? _________________
   (i.e. March 2020-April 2021)
Appendix I: Specific Aims 2 & 3 Demographic Questions

1. Sex
   - Male
   - Female
   - Prefer not to say

2. Current Age: ________

3. What date did you move into this facility? ________/_____/__________

4. Where did you move from?
   - Living in a residence in the community (i.e., house, apartment, condominium)
   - Living in another part of this facility (i.e., independent living apartment, townhouse)
   - Living in another assisted-living facility
   - Other: ____________________________________________

5. What is your current marital status?
   - Married
   - Member of an unmarried couple
   - Single and never been married
   - Widowed
   - Divorced

6. What is your highest level of education?
   - K-11
   - High School Graduate
   - Some College
   - College Graduate
   - Some post-graduate
   - Post graduate degree

7. Are you a military veteran?
   - YES
     i. If so, how many years active duty? ________
   - NO

8. Was your spouse in the military?
   - YES
     i. If so, how many years active duty? ________
   - NO

9. How many times have you moved your permanent residence in your lifetime?
10. **How would you best describe yourself?**
   - [ ] American Indian or Alaska Native
   - [ ] Asian
   - [ ] Black or African American
   - [ ] Native Hawaiian or Other Pacific Islander
   - [ ] White

11. **Primary reason for moving into this assisted-living facility?**
### Medical History

Do you have a medical or surgical history of any of the following?

<table>
<thead>
<tr>
<th>MEDICAL HISTORY</th>
<th>Yes / No</th>
<th>If Yes, Explain</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Head, Eye, Ear, Nose, Throat (Cataracts, Macular degeneration, Blindness, Hearing loss, Difficulty swallowing, Migraines, Seizures, or Other)</td>
<td>✔ Yes ✔ No</td>
<td></td>
</tr>
<tr>
<td>2. Respiratory (COPD, Asthma, Oxygen Dependent, Tuberculosis, or Other)</td>
<td>✔ Yes ✔ No</td>
<td></td>
</tr>
<tr>
<td>3. Cardiovascular (Chest Pain, Irregular Heart Rate, Heart Murmur, Ankle Swelling, or Other)</td>
<td>✔ Yes ✔ No</td>
<td></td>
</tr>
<tr>
<td>4. Gastrointestinal (Ulcer disease, Heartburn, Diarrhea or Constipation, or Other)</td>
<td>✔ Yes ✔ No</td>
<td></td>
</tr>
<tr>
<td>5. Genitourinary (Incontinence, Kidney Stones, Catheter, or Other)</td>
<td>✔ Yes ✔ No</td>
<td></td>
</tr>
<tr>
<td>6. Endocrine (Diabetes, or Other)</td>
<td>✔ Yes ✔ No</td>
<td></td>
</tr>
<tr>
<td>7. Musculoskeletal (Back or Joint Pain, Arthritis, Artificial Knee or Hip Joint, or Other)</td>
<td>✔ Yes ✔ No</td>
<td></td>
</tr>
<tr>
<td>8. Dermatologic (Unhealed Sores, Skin Cancer, or Other)</td>
<td>✔ Yes ✔ No</td>
<td></td>
</tr>
<tr>
<td>Question</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>9. Psychiatric (Anxiety, Depression, Memory Loss, of Other)</td>
<td></td>
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<tr>
<td>10. Other, specify:</td>
<td></td>
<td></td>
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</tbody>
</table>
### Appendix J: Stanford Health Assessment Questionnaire Disability Index (HAQ-DI)

1. For each category, please check the one response that best describes your abilities over the past week.

<table>
<thead>
<tr>
<th>Category</th>
<th>NO DIFFICULT</th>
<th>SOME DIFFICULT</th>
<th>MUCH DIFFICULT</th>
<th>UNABLE TO DO</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dressing and Grooming</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Dress yourself, including tying shoelaces and doing buttons</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Shampoo your hair</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td><strong>Rising</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stand up from an armless chair</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Get in and out of bed</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td><strong>Eating</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cut your meat</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Lift a full cup or glass to your mouth</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Open a new carton of milk</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td><strong>Walking</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walk outdoors on flat ground</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Climb up five stairs</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td><strong>Hygiene</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wash and dry your entire body</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Take a bath</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Get on and off the toilet</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td><strong>Reach</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Reach and get down a 5 lb object (for example, a bag of sugar from just above your head)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Bend down to pick up clothing from the floor</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td><strong>Grip</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open car doors</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Open jars which have been previously opened</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Turn taps on and off</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td><strong>Activities</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Run errands and shop</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Get in and out of a car</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Do chores such as vacuuming, housework or light gardening</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
2. Do you usually (more than 50% of the time) use the following aids or devices for any of the activities listed on page 1? Check all that apply.
   - Canes
   - Walker
   - Crutches
   - Wheelchair/scooter
   - Raised toilet seat
   - Bath seat
   - Jar opener (for jars previously opened)
   - Special or built-up utensils
   - Special or built-up chair
   - Bath rail
   - Long-handled applicance for reach
   - Other (specify) ________________________________

3. Do you usually (more than 50% of the time) need help from another person for any of the following? Check all that apply.
   - Errands and housework
   - Reaching
   - Dressing and grooming
   - Gripping and opening things
   - Eating
   - Walking
   - Rising
   - Hygiene
## Appendix K: Specific Aims 2 & 3 Final MAT Items

### Mueller Assessment of Transition (MAT)

Instructions:
- For each of the questions, please recall back to the **first month** you moved into the assisted living facility.
- Please fill in the circle for how strongly you experienced the items listed below during your transition, from *strongly disagree* and *strongly agree*.

As you **transitioned** into the ALF, you **experienced**…

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree (1)</th>
<th>Disagree (2)</th>
<th>Somewhat Disagree (3)</th>
<th>Neutral (4)</th>
<th>Somewhat Agree (5)</th>
<th>Agree (6)</th>
<th>Strongly Agree (7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Feeling strong support from the staff.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Feeling a loss in your important possessions.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Feeling supported by visits with people who don’t live in the ALF.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>5. Comfort in a new daily routine.</td>
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<td>6. A sense of freedom from leaving the facility on outings.</td>
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<td>7. Feeling strong support from other residents.</td>
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<td></td>
<td>Strongly Disagree (1)</td>
<td>Disagree (2)</td>
<td>Somewhat Disagree (3)</td>
<td>Neutral (4)</td>
<td>Somewhat Agree (5)</td>
<td>Agree (6)</td>
<td>Strongly Agree (7)</td>
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<td>9. Feeling a loss of enjoyable activities.</td>
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<td>10. Less freedom to move around as you pleased.</td>
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<td>11. Feeling less engaged in your favorite hobbies.</td>
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<td>12. Feeling less freedom to host social gatherings with family and friends.</td>
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