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Discrimination, Mental Health, and Preparedness for Aging in Trans(gender)/Gender-Nonconforming Adults

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DISCRIMINATION, MENTAL HEALTH, AND PREPAREDNESS FOR AGING IN
TRANS(GENDER)/GENDER-NONCONFORMING ADULTS

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Science
at Virginia Commonwealth University

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Abstract

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This cross-sectional study examined relationships among discrimination, mental health (i.e., depression and anxiety), preparation for aging (i.e., familiarity and planning), social support, death attitudes, and aging anxiety among TGNC adults ($N = 154$). Neither discrimination nor mental health predicted preparation for aging familiarity or planning. Discrimination did, however, predict both anxiety and depression, although only the non-affirmation subscale was a unique predictor of both. As discrimination and mental health were not a significant predictor of preparedness for aging in the previous regressions, the hypothesized mediation model and subsequent moderated mediation models were not conducted. Additional exploratory multiple regressions were run to identify patterns of connections among social support, death attitudes, aging anxiety (the proposed moderators) in relation to age preparation and planning. Social support predicted preparation for aging planning, but not familiarity. Death attitudes and aging anxiety predicted preparation for aging familiarity and planning. The current findings may inform mental health interventions for TGNC individuals around non-affirmation may positively influence mental health. Additionally, addressing aging concerns and increasing social support may promote age preparatory planning among TGNC individuals.

Discrimination, mental health, and preparedness for aging in trans(gender)/gender-nonconforming adults

This literature review will summarize the research on issues surrounding older trans(gender)/gender-nonconforming (TGNC) adult health starting with physical health and health behaviors. It will then consider the process of aging and death. Next it will look at caregiving and receiving among TGNC older adults. This will be followed by contextualizing the current generations of TGNC older adults and providing some demographics about them. Afterwards, some of the unique concerns of being a TGNC older adult will be examined. The review will then move into a discussion about the minority stress model and how these topics fit into this model. Specific attention will be paid to issues of discrimination, mental health, and their relationship. This will be followed by a look at social support and attitudes towards aging. The literature review will finally lead into the purpose of this study, which is to examine how discrimination, mental health, and preparedness for aging are associated in an age-diverse sample of TGNC individuals. A secondary aim is to examine how social support, death attitudes, and attitudes about aging may moderate these relationships and therefore present malleable targets for increasing healthy aging in TGNC populations.

There are many cultural, spiritual, scientific, and philosophical beliefs about aging and the aging process; there are also many stigmas and stereotypes associated with aging. As a process there are many facets to aging: biological, chronological, social, and psychological (Birren & Schaie, 2001). Common western stereotypes of aging include increasing age (chronological), deteriorating health (biological), retirement (social), and senility (biological/psychological) (Birren & Schaie, 2001). Some groups may experience unique challenges and concerns that are not a universal part of the aging process (Birren & Schaie,

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2001). For TGNC individuals, aging can present a multitude of difficulties that people whose gender identity/expression matches what is socially expected based on the sex they were assigned at birth may not have to face (Witten 2012a; Witten 2012b; Witten, 2013).

There is a diverse group of individuals who may be considered or identify as TGNC. The nomenclature used to identify these individuals, by these individuals, and as self-identifiers is rapidly changing. Historically, "transgender" has been used to refer to a group "who cross or transcend culturally defined categories of gender" (Bockting & Cesaretti, 2001, p. 292). More recently "trans," "gender variant," and "gender nonconforming" have been used along with or in lieu of "transgender" as umbrella terms. These umbrella terms—trans(gender), gender variant, and gender nonconforming—include pre-, post-, and non-operative trans(sexual) individuals, genderqueer, gender fluid, bigender, androgynous, agender, two-spirit, drag queens, drag kings, and cross-dressers. Facebook currently has 71 gender identity options for its users, along with three pronoun choices. Some intersex individuals may be categorized as TGNC, if they also undergo a gender-identity challenge (Witten, 2003). It has been argued that the umbrella terminology of trans or gender variant is in danger of oversimplifying a population of individuals whose identities are denoted by unique combinations of sex assigned at birth, gender identity, sex role, and sexual orientation (Bockting & Cesaretti, 2001; Porter, Ronneberg, & Witten, 2013). Given the range of gender self-identities and perceptions, TGNC will be used as an umbrella term for this paper with the understanding and acknowledgement of its limitations both in terms of its accuracy—in capturing the range of experiences and identities—and temporally.

TGNC Aging Outcomes

Research on TGNC aging is limited, with the majority of what is known about TGNC older adults and the aging process for TGNC adults coming from small convenience samples in

qualitative studies (Carroll, 2017; Kimmel, 2014; Siverskog 2014). The focus has also been relatively narrow. To date, most of the literature about TGNC aging has focused on discrimination (particularly in healthcare) (Finkenauer, Sherratt, Marlow, & Brodey, 2012), violence and abuse (Witten, 2002; Witten & Eyler, 1999), caregiving and family relations (Witten, 2009), and a few studies on resilience factors (e.g., religiosity) (Kidd & Witten, 2008; McFadden, Frankowski, Flick, & Witten, 2013; Porter, Ronneberg, & Witten, 2013). There are a few notable exceptions, including: The AIDS Community Research Initiative of America (ACRIA) study prepared for the Center on Halsted (2011) of which 5% of the sample ($N = 211$) was TGNC or intersex; The Aging and Health Report (2011), a collaborative report of 11 lesbian, gay, bisexual, and transgender (LGBT) aging organizations nationally with 7% of participants identifying as TGNC ($N = 2560$); and The MetLife Study of LGBT Baby Boomers (2010) with <1% identify as TGNC ($N = 2407$). These larger, more representative studies provide a wealth of information about the material conditions of LGBT older adults' lives.

Older TGNC Adult Health. The majority of TGNC aging research takes place within the larger context of LGBT research. Some of the studies (e.g., the MetLife and The Aging and Health Report) present overall LGBT statistics, as well as gay men, lesbian women, bisexual men, bisexual women, and transgender individuals separately. Other studies only report the overall results (e.g., the ACRIA study). One large challenge confronting LGBT research is that gender identity and sexual orientation are two separate constructs, and while these minority identities may share similar challenges, these are not homogeneous groups (Daniel & Butkus, 2015; Park, 2017). Additionally, a large proportion of TGNC adults also identify as a sexual minority; anywhere between 79-85% identified as other than heterosexual (Fredriksen-Goldsen et al., 2011; Grant et al., 2011; James et al, 2016). Despite these limitations, some light can be

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shed on the demographics and conditions of aging LGBT adults, and more specifically TGNC individuals.

   Physical Health and Health Behaviors. Part of the biological process of aging includes the implications for physical health and health behaviors (Birren & Schaie, 2001). The literature specifically focusing on physical health and health behaviors in TGNC older adults is extremely sparse. However, one comprehensive study by Fredriksen-Goldsen and colleagues (2011) compared 174 TGNC older adults to 2,386 sexual minority older adults ($N =$ 2,560) ages 50-95. They found more TGNC older adults reported poor general health (~33%) compared to any other group (next highest 29%, overall average 23%; Fredriksen-Goldsen et al., 2011). Older TGNC adults also reported higher levels of obesity, asthma, diabetes, and cardiovascular disease. TGNC older adults (16%) reported similar rates of having had at least one type of cancer as sexual minority older adults (19%). TGNC older adults (62%) also reported higher rates of disability compared sexual minority older adults (47%). A quarter (25%) of TGNC older adults reported hearing impairments (compared to 19% of sexual minority older adults), 37% of TGNC older adults reported visual impairments (compared to 25% of sexual minority older adults), and 44% of TGNC older adults reported dental impairments (compared to 24% of sexual minority older adults) (Fredriksen-Goldsen et al., 2011).

   Health behaviors are often divided into positive (health-promoting or enhancing) and negative (health risks). In the Fredriksen-Goldsen and colleagues (2011) study, TGNC older adults participated in wellness and moderate activities (85% and 74% respectively) less than sexual minority older adults (91% and 82% respectively). Preventative health screenings can detect or help avoid adverse health conditions and may prevent premature death (Fredriksen-Goldsen et al., 2011). Only 18% of sexual minority older adults indicated not having had a

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routine checkup in the past year compared to 27% of TGNC older. TGNC older adults were also less likely than other sexual minority older adults to get health screenings like osteoporosis tests (19% vs. 33%) or colonoscopies (44% vs. 56%). However, TGNC older adults (40%) were more likely than sexual minority older adults (13%) to be provided with inferior care or outright denied care. TGNC older adults reported higher rates (15%) of current smoking behavior than sexual minority older adults (9%). However, when controlling for socio-demographic factors, these findings did not remain significant. TGNC older adults (20%) were more likely to drink alcohol excessively than sexual minority older adults (10%). Excessive drinking was defined as at least a single occasion in the past 30 days of four or more drinks for women and five or more drinks for men (Fredriksen-Goldsen et al., 2011).

Aging and Death. In the process of aging, older adults, and specifically LGBT older adults, indicated that they were less afraid of death itself or dying early (<1%) and more afraid of dying alone (13% LGBT, 9% general) or dying in pain (21% LGBT, 17% general) (MetLife, 2010). This suggests that it is not death, but how one dies that often elicits the most fear. In addition to fears about death, dying alone, or in pain, what preparations individuals have made for aging and end-of-life may be important. Nearly a third of LGBT Baby Boomers "aren't sure" if they have made any long-term or end-of-life preparations (MetLife, 2010). These long-term and end-of-life preparations include having: wills (37%); long-term care insurance (14%); funeral plans (15%); setting up a trust (8%); living wills (38%); durable power of attorney for health care (DPAH; 34%); informal caregiving arrangements (14%); partner agreement (13%); and executing a rights of visitation document (10%) (MetLife, 2010). In another study, 70% of LGBT older adults had wills and 64% had a durable power of attorney for healthcare (Fredriksen-Goldsen et al., 2011). This is a much higher percentage than in the MetLife (2010).

It is possible that the socio-demographic differences between the two sample populations (e.g., employment status, education) may account for some of the difference. For TGNC older adults, 37% indicated having a DPAH, and 49% reported having a will (Fredriksen-Goldsen et al., 2011). Despite the differences between studies, TGNC older adults are far less likely, even controlling for socio-demographic factors, than other sexual minority older adults to not have a DPAH or will (Fredriksen-Goldsen et al., 2011). In addition to not having long-term or end-of-life legal preparations, most LGBT older adults have uncertain financial futures (MetLife, 2010). Over half (57%) of LGBT older adults plan on relying on Medicare to pay for any long-term care needs, yet Medicare benefits do not support long-term care costs (MetLife, 2010). LGBT older adults (47%) also indicated relying on health insurance, although most plans usually do not cover long-term care (MetLife, 2010). Other financial sources indicated by LGBT older adults include: personal savings (33%); Medicaid (30%); long-term care insurance (20%); family (5%); friends (2%); and other (6%) (MetLife, 2010). A further 18% of LGBT older adults are "not sure" how they will afford long-term care costs (MetLife, 2010).

Caregiving and receiving. Social support comes in several forms: emotional, instrumental, informational, and appraisal (Langford, Bowsher, Maloney, & Lillis, 1997). Caregiving and care-receiving relationships can rely on various combinations of these different forms of social support. Partners/spouses are the most common caregiver, although LGBT older adults are also more likely to expect to receive care from friends and paid in-home caregivers (MetLife, 2010). Significantly, 25% of LGBT older adults are "not sure" who would care for them if they became ill and needed help (MetLife, 2010). As with research on TGNC older adults' health and health behaviors, the vast majority of research findings on caregiving in sexual minority populations come from Fredriksen-Goldsen and colleagues' (2011) study. For LGBT

older adults in this study, 67% reported they have someone who could help them with daily tasks if they became sick and 33% said they did not. TGNC older adults had lower levels of social support compared to sexual minority older adults. LGBT older adults often (27%) participated in caregiving for a partner, friend, or family member, but most of the care was provided to a partner/spouse or friend. Other care was provided to parents, parent-in-laws, other relatives, adult children, and non-relatives (e.g., neighbors). LGBT older adult caregivers provided care, despite the adversity they may encounter when doing so: compared to non-caregivers, caregivers reported higher rates of victimization and abuse. Caregivers were also more likely to report higher levels of mental health issues, more disability, and lower levels of physical health. LGBT older adults (17%) were also the recipients of care, and most of the care was provided by a partner/spouse, a friend, or a neighbor or other non-relative. Those receiving care tended to report higher levels of social support, were more likely to be married or partnered, and less likely to live alone. LGBT older adult caregiving and care-receiving relationships appeared to be more reciprocal; those receiving care were more likely to report providing care than those not receiving care (Fredriksen-Goldsen et al., 2011).

Generations of TGNC. There are many different theories about what denotes the transition from middle adulthood to "old age." Culturally, what is considered old age is shifting as life expectancy is increasing. Most programs that are designed to serve older adults start anywhere between the ages of 55-65 years old (AARP, 2017; County of Hawai'i, 2012; IRS, 2017). That would mean individuals turning 55 this year (2018) were born in 1963. Individuals born in 1963 are part of what is known as the "Baby Boomer" generation (Baby Boomers), which includes anyone born in the period from 1946-1964 (MetLife, 2010). Other LGBT older adults born prior to 1946 would be part of the "Greatest Generation," those born from 1914-

1924, or the "Silent Generation," those born from 1925-1945. Those born in the "Greatest Generation would have come of age during the Great Depression or McCarthy era (Fredriksen-Goldsen et al., 2011). The Baby Boomers would have started to come of age during the civil rights movement and the era of the Stonewall riots, which incited the gay liberation movement (Fredriksen-Goldsen et al., 2011). Irrespective of their generational cohort, most of the TGNC older adults have spent most of their lives hiding their identities (Fredriksen-Goldsen et al., 2011). There are two very different general narrative arcs that TGNC older adults may have followed. The first is that the TGNC individual transitioned and then disappeared back into their lives. The first documented female-to-male surgery was on a patient named Michael Dillon (Collins, 2017). The first documented male-to-female surgery was on a patient named Lili Elbe (Blumberg, 2015). Gender confirmation surgery was popularized in the United States in 1952 with the news of Christine Jorgensen's operation (Jorgensen, 2000). These individuals are thought to live under the radar, perhaps as a means of self-preservation (Erickson-Schroth, 2014). It is sometimes only after their death that their TGNC identity is revealed, as in the case of Billy Tipton. Billy Tipton was an American jazz musician who got his start in the early 1930s and 1940s (Halberstam, 2005). He lived his life as a male, and it was only after his death that people learned Billy Tipton had been assigned female at birth (Halberstam, 2005). It is possible there are early TGNC pioneers that are part of a lost generation (Auldridge, Tamar-Mattis, Kennedy, Ames, & Tobin, 2012). The second narrative is that the TGNC individual may have transitioned later in life. These individuals face very different obstacles because of the gay rights movement (Butler, 2004). As they age, these individuals must also deal with the additional challenges of ageism.

Demographics. The current U.S. population as of 2016 is 323.1 million (U.S. Census Bureau, 2018). In 2014, 73.2% of the population was below the age of 55 (U.S. Census Bureau, 2014). There is expected to be tremendous growth in the proportion of the population over the age of 50, with the number of self-identified LGBT older adults expected to double by 2030 (Fredriksen-Goldsen et al., 2011). Witten (2016) estimated the number of TGNC individuals 65 years and above at between 1.2-2.8 million. Other measures put TGNC older adults at between 0.3%-0.5% of the adult population or at least 700,000 individuals (Flores, Herman, Gates, & Brown, 2016; Fredriksen-Goldsen, 2014; Gates, 2011). Any of these various estimations suggest that the TGNC older adult population is large enough that it cannot easily be trivialized or ignored.

In addition to the growing size of the TGNC older adult population, there are some important demographic features and misconceptions about this population. Despite the contentious relationship with the armed forces, 41% of TGNC older adults have served in the military (Fredriksen-Goldsen et al., 2011). TGNC older adults also experience high levels of poverty, with 31% of TGNC individuals living in households with incomes at or below 200% of the federal poverty level (Fredriksen-Goldsen et al., 2011). Many TGNC older adults (90%) feel good about belonging to their communities, and many attend spiritual or religious services or activities (38%) (Fredriksen-Goldsen et al., 2011). TGNC older adults are a highly heterogeneous group, with many varied experiences accumulated across a lifespan.

Specific Concerns. TGNC individuals experience many of the same concerns about aging as everybody else. For the Baby Boomers, these concerns include: how to finance retirement, a desire to have end-of-life care at home, and caregiving (MetLife, 2010). Among the top concerns about aging identified by the Baby Boomers is: being unable to care for themselves,

becoming dependent on others, becoming sick or disabled, becoming confused/getting dementia, and outliving their income (MetLife, 2010). These concerns superseded even the fear of discrimination (MetLife, 2010). It is posited that this cohort is so accustomed to discrimination, that it is no longer the biggest concern (MetLife, 2010). Among the current cohort of LBGT older adults, 82% have been victimized at least once and 64% have been victimized three times or more due to perceived sexual orientation or gender identity (Fredriksen-Goldsen et al., 2011). There are mixed feelings about whether identifying as LGBT aids or hinders the aging process, with 74% of LGBT older adults saying it prepared them for aging and 54% stating it makes aging more difficult (MetLife, 2010). Those who thought that being LGBT makes aging more challenging cited issues like it being harder to create new relationships, fear of increased discrimination, feeling increased vulnerability with health care providers, and less options for socialization (MetLife, 2010).

Minority Stress Model

The minority stress model (Meyer, 2003) is a theoretical framework used to explain the health risks of sexual minorities. This framework has been adapted and used to model a variety of minority populations (Meyer, Schwartz, & Frost, 2008), including TGNC individuals (Hendricks & Testa, 2012). The premise of the minority stress model is that minority identities and values conflict with the dominant group, and this conflict influences the social environment minority members experience (Meyer, 1995). The minority stress model argues that health disparities are a result of the experience felt due to the negative social environment (Meyer, 2003). The minority stress model includes a variety of stressors and coping mechanisms and their resulting impact on mental health outcomes (Meyer, 2003). Prominent assumptions

underlying the minority stress model are that the stressors are chronic, socially based, and unique to the stigmatized group (Meyer, 2003).

Using the minority stress model, it is important to assess a variety of relationships related
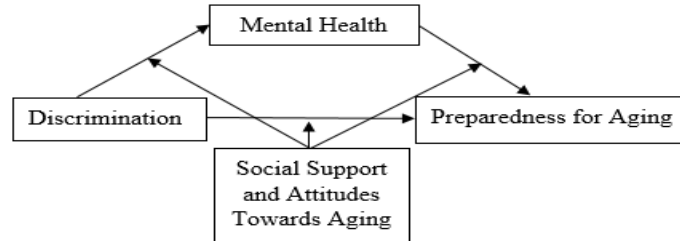
Figure 1. Moderated mediation of discrimination to mental health to preparedness for aging moderated by social support and attitudes towards aging

to the unique experience of TGNC individuals in the aging process (Figure 1). It is well

documented that TGNC individuals experience a high degree of discriminatory experiences

because of their gender identity/self-perception. These experiences of discrimination,

harassment, rejection, and victimization occur across a variety of domains including family of

origin, work, school, and religious/faith-based communities (James et al., 2016). TGNC

individuals are also at increased risk for depression and anxiety (Fredriksen-Goldsen et al., 2014;

McKay, 2011; Mollon, 2012). The experience of discrimination has been shown to be predictive

of the higher levels of mental health issues (Fredriksen-Goldsen et al., 2014; Fredriksen-Goldsen

et al., 2015; Sutter & Perrin, 2016). One study has shown differences in preparedness for aging

by gender identity/self-perception (Fredriksen-Goldsen et al., 2014). The most commonly cited

reasons for not having advance directives (AD) are having not thought about it, preferring to let

family decide, and procrastination (Llovera et al., 1999). Poor physical health has been linked to

having an AD (Oulton et al., 2015); this proposed study seeks to link mental health with

preparedness for aging. It has been demonstrated that attitudes towards aging—such as a desire

to avoid thinking about death or declines in health—are also related to having an AD (Oulton et

al., 2015). There is some evidence that social support can mitigate the link between discrimination and mental health (Fredriksen-Goldsen et al., 2014; Fredriksen-Goldsen et al., 2015).

Discrimination and Mental Health. It is well documented that TGNC individuals experience high rates of stigma, discrimination, and victimization (Bradford, Reisner, Honnold, & Xavier, 2013; Clements-Nolle, Marx, & Katz, 2006; Grant et al., 2011; Hendricks & Testa, 2012; James et al., 2016; Nemoto, Bödeker, & Iwamoto, 2011). In some studies, the prevalence estimates exceeded 60% of participants (Bockting, Robinson, Forberg, & Scheltema, 2005; Lombardi, 2010; Rood et al., 2016). Rates of victimization often exceed 40% among TGNC individuals (Kenagy & Bostwick, 2005; Rood et al., 2016; Xavier, Bobbin, Singer, & Budd, 2005). In a study of 350 TGNC individuals in Virginia, 41% were found to have experienced some form of TGNC-related discrimination (Bradford, Reisner, Honnold, & Xavier, 2013; Scandurra, Amodeo, Valerio, Bochicchio, & Frost, 2017).

In addition to experiencing high rates of discrimination and victimization, TGNC individuals also experience high rates of mental health issues. This includes high rates of depression (Asscheman, Gooren, & Eklund, 1989; Boza & Nicholson Perry, 2014; Clements-Nolle, Marx, Gumzan, & Katz, 2001; Clements-Nolle, Marx, & Katz, 2006; Nuttbrock et al., 2010; Operario & Nemoto, 2005; Rotondi et al., 2011a; Rotondi et al., 2011b), anxiety (Bockting, Miner, Swinburne Romine, Hamilton, & Coleman, 2013; Bouman et al., 2017; Budge, Adelson, & Howard, 2013; Derogatis, Meyer, & Boland, 1981; Millet, Longworth, & Arcelus, 2017; Pflum, Testa, Balsam, Goldblum, & Bongar, 2015), and suicidality (Clements-Nolle, Marx, & Katz, 2006; Fredriksen-Goldsen et al., 2011; Grant et al., 2011; James et al., 2016). As part of Fredriksen-Goldsen and colleagues' (2011) comprehensive study of LGBT

older adults, they also asked questions about mental health. Among these questions, LGBT older

adults were asked to rate their overall perceived mental health and how it impacted their life on a

scale from 0 (very poor) to 100 (excellent). Overall, LGBT older adults rated their general

mental health as good (70.8), but even when controlling for socio-demographic factors TGNC

older adults (62.7) reported lower levels of general mental health (Fredriksen-Goldsen et al.,

2011). Using the Center for Epidemiologic Studies Depression Scale, this same study found 31%

of LGBT older adults had clinically significant depressive symptoms and 53% had been formally

diagnosed. Among the same sample, 24% of LGBT older adults had been formally diagnosed

with anxiety. TGNC older adults reported higher rates of depression (48% vs. 31%) and anxiety

(39% vs. 24%) than other sexual minority older adults. In addition to depression and anxiety,

many LGBT older adults (39%) admitted to having contemplated taking their own life, and of

those 39% reported that their suicidal thoughts were related to their sexual or gender minority

identity. Rates of suicidality reported in any given study of TGNC individuals range drastically

from between 26-71% (e.g., Clements-Nolle, Marx, & Katz, 2006; Fredriksen-Goldsen et al.,

2011; Grant et al., 2011; James et al., 2016). Even at the low end of these reported lifetime

prevalence, rates of suicide attempts in the TGNC community are high compared to the general

population (2-9%) (Nock et al., 2008; Tebbe & Moradi, 2016).

Researchers are exploring the relationship between experiences of discrimination,

minority stressors, and aspects of mental health. This is a central component of Meyer's (2003)

minority stress model, which posits that minority stress processes lead to mental health

problems. Studies suggest that there may be a positive link between discrimination and negative

affect (Conlin, Douglass, & Ouch, 2017; Mohr & Sarno, 2016; Rostosky, Riggle, Horne, &

Miller, 2009; Swim, Johnston, & Pearson, 2009), and a negative association with positive affect,

satisfaction with life, and life purpose or meaning (Conlin, Douglass, & Ouch, 2017; Mohr & Sarno, 2016; Riggle, Rostosky, & Danner, 2009; van der Star & Branstrom, 2015). Experiences of discrimination have also been directly linked to suicidality (Johnson, Faulkner, Jones, & Welsh, 2007; Kelleher, 2009). Collectively this research is helping to demonstrate the link between discrimination and stressors, and indications of negative mental health (Rood et al., 2016). While most previous research has not focused on TGNC individuals, there have been more recent studies examining the effects of stigma on TGNC individuals' mental health (Bockting, Miner, Swinburne Romine, Hamilton, & Coleman, 2013; Bradford, Reisner, Honnold, & Xavier, 2013; Scandurra, Amodeo, Valerio, Bochicchio, & Frost, 2017).

There is growing evidence that high rates of discrimination and victimization are associated with negative mental health outcomes and suicidality for TGNC individuals (e.g., Bockting, Miner, Swinburne Romine, Hamilton, & Coleman, 2013; Clements-Nolle et al., 2006; Goldblum et al., 2012; Grant et al., 2011; Nemoto, Bödeker, & Iwamoto, 2011; Nuttbrock et al., 2010; Testa et al., 2012; Xavier, Bobbin, Singer, & Budd, 2005). For example, among a sample of 90 TGNC participants from California, Lombardi (2009) found depression and anxiety to be related to having had transphobic experiences. Also in California, a study by Clements-Nolle and colleagues (2006) found a range of discrimination and victimization experiences: 83% reported verbal discrimination, 59% reported experiencing rape, 36% reported physical victimization, and 62% reported other types of discrimination (e.g., work, housing, or health care). Of this same sample, 60% met the criteria for clinical depression and 26% reported having attempted suicide at least once in the past (Clements-Nolle et al., 2006). High rates of discrimination also emerged in both national surveys of TGNC adults: the 2011 Transgender Discrimination Survey and the updated 2015 U.S. Trans Survey. In the 2011 survey of 6,450 TGNC individuals, across

education, housing, employment, and health care settings 19-61% reported some form of harassment (Grant et al., 2011). Additionally, 41% of this sample reported at least one suicide attempt in the past (Grant et al., 2011). The 2015 survey of 27,715 TGNC individuals, across education, housing, employment, and health care settings 12-77% reported some form of harassment (James et al., 2016). Additionally, 40% of the sample reported at least one suicide attempt in the past, with 7% reporting an attempt in the past year (James et al., 2016). While these last two studies did not test the relationship directly, together these studies suggest a strong pairing of discrimination and negative mental health (Tebbe & Moradi, 2016).

      Preparedness for Aging. As evidenced in part by the fact that less than half of older adults have living wills—despite increasing familiarity of them—there is a general lack of planning for aging and end-of-life care (Bravo, Dubois, & Pâquet, 2003; Carr & Khodyakov, 2007; Kahana, Dan, Kahana, & Kercher, 2004). Nearly three-quarters of older adults have had some form of informal conversation about their wishes, whereas close to one-fifth of older adults have done no planning, formal or informal, for their aging and end-of-life care (Carr & Khodyakov, 2007). This formal and informal planning allows—among other things—for an individual to dictate their future interactions with the healthcare system and the care they wish to receive. There are several personal beliefs, attributes, and end-of-life experiences that predispose an individual toward engaging in or avoiding formal and informal planning for aging. These includes having been hospitalized in the past year, having an external health locus of control, having survived the death of a loved one, death anxiety, socioeconomic status, race/ethnicity (i.e., being white), marital status, education level, knowledge about advance planning, health literacy, sex (i.e., being female), and self-perceptions of health (Campbell, Edwards, Ward, &

Weatherby, 2007; Carr, 2012a; Carr, 2012b; Carr & Khodyakov, 2007; Douglas & Brown, 2002; Kahana, Dan, Kahana, & Kercher, 2004; Kelly, Masters, & DeViney, 2013).

Social Support. Despite the evidence linking discrimination and negative mental health, there are some indications that TGNC individuals may be able to use adaptive strategies, such as social support, to mitigate minority stressors (Pflum, Testa, Balsam, Goldblum, & Bongar, 2015; Singh, Hays, and Watson, 2011; Singh, Meng, & Hansen, 2014). While discrimination is positively associated with negative mental health, studies suggest for TGNC individuals social support may be linked with positive mental health (e.g., Bockting et al., 2013; Moody, Fuks, Peláez, & Smith, 2015; Nemoto, Bödeker, & Iwamoto, 2011). For example, in a study of TGNC adults, family support was related to lower suicide risk; however, friend support was not (Moody & Smith 2013). This suggests the relationship to the individual giving the support may be an important factor. Support from romantic partners/significant others in conjunction with support from other relationships has yet to be examined (Tebbe & Moradi, 2016). It has been suggested that social support serves an important function in coping with the lifelong stigma and discrimination of being LGB, however the evidence regarding TGNC individuals is less clear (Choi & Meyer, 2016). Social support is generally associated with better health outcomes, particularly among older adults (White, Philogene, Fine & Sinha, 2009), as a safeguard against stigma and discrimination (D'Augelli, Grossman, Hershberger, & O'Connell, 2001; Silliman, 1986), to decrease depression and internalized stigma (Masini & Barrett, 2008), and to improve general health and overall quality of life (Fredriksen-Goldsen et al., 2015).

Attitudes toward Aging. Aging anxiety is thought to manifest in two parts. The first is that anxiety about aging influences one's behaviors and attitudes towards older adults, and the second is that this anxiety influences one's own orientation and adjustment process to aging

(Lasher & Faulkender, 1993). Aging anxiety is thought to be the product of anticipation and concern about losses that are associated with the process of aging (Lasher & Faulkender, 1993). Attitudes towards aging have been looked at across several contexts: internationally and cross-culturally (Bergman, Bodner, & Cohen-Fridel, 2012; McConatha, Hayta, Rieser-Danner, McConatha, & Polat, 2010; McConatha, Schnell, Volkwein, Riley, & Leach, 2003; Watkins, Coates, & Ferroni, 1998; Yun & Lachman, 2006), the gendered effects of aging with women (Barrett & Robbins, 2008; McKinley & Lyon, 2008; Muise & Desmarais, 2010; Slevec & Tiggemann, 2011), and with LGBT participants (Sharp, 1997). In a study by Moor and colleagues (2006), attitudes towards aging were found to moderate the relationship between an individual's personality and subjective well-being. The results from the Moor and colleagues (2006) study suggest that people with a specific personality type are more likely to have negative attitudes toward aging, and those negative attitudes seem to have an effect on how participants perceive their overall health. In the LGBT community, a study of older lesbian women and gay men in the Midwest who reported high levels of engagement with the LGBT community, reported higher levels of acceptance of the aging process and greater satisfaction with life, despite expected problems due to aging and discrimination (Quam & Whitford, 1992).

Aim 1

Hypothesis 1.1. It is well documented that TGNC individuals experience high rates of discrimination and victimization (e.g., Clements-Nolle, Marx, & Katz, 2006; Grant et al., 2011; Hendricks & Testa, 2012; James et al., 2016). It has also been demonstrated that TGNC individuals experience high rates of mental health issues, such as depression (e.g., Boza & Nicholson Perry, 2014; Clements-Nolle, Marx, & Katz, 2006; Nuttbrock et al., 2010) and anxiety (e.g., Bouman et al., 2017; Millet, Longworth, & Arcelus, 2017; Pflum, Testa, Balsam,

Goldblum, & Bongar, 2015). Research has positively linked discrimination experiences to negative affect (Conlin, Douglass, & Ouch, 2017; Mohr & Sarno, 2016; Rostosky, Riggle, Horne, & Miller, 2009; Swim, Johnston, & Pearson, 2009) and negatively with positive affect (Conlin, Douglass, & Ouch, 2017; Mohr & Sarno, 2016; Riggle, Rostosky, & Danner, 2009; van der Star & Branstrom, 2015). Accordingly, it is hypothesized that greater discrimination experiences will be associated with higher levels of anxiety and depression.

Hypothesis 1.2. Research with non-TGNC populations has found that anxiety and depression are associated with age preparatory behaviors (Fowler & Fisher, 2009). Thus, it is hypothesized that higher levels of anxiety and depression will also be associated with lower levels of age preparatory behaviors in a population of TGNC individuals.

Hypothesis 1.3. Research by Fredriksen-Goldsen and colleagues (2011) suggests TGNC older adults are less likely to have a DPAH or will. Using the minority stress model (Meyer, 2003), it is hypothesized that discrimination will be associated with lower levels of age preparatory behaviors.

Hypothesis 1.4. There are research links between discrimination experiences and mental health in TGNC individuals (e.g., Clements-Nolle et al., 2006; Grant et al., 2011; Nuttbrock et al., 2010; Testa et al., 2012). There is a hypothesized link between discrimination and age preparatory behaviors. Finally, there are associations between mental health and age preparatory behaviors in non-TGNC adults (Fowler & Fisher, 2009). Given these relationships, it is hypothesized that mental health (i.e., anxiety and depression) will mediate the relationship between discrimination experiences and age preparatory behaviors.

Aim 2

 Hypothesis 2.1. Research has generally examined the role of social support in aging (White, Philogene, Fine & Sinha, 2009). Although, social support has only been examined in a limited fashion among TGNC adults (Choi & Meyer, 2016). Social support, however, has been demonstrated to have strong ties to discrimination (D'Augelli, Grossman, Hershberger, & O'Connell, 2001; Silliman, 1986), mental health (Fredriksen-Goldsen et al., 2015; Masini & Barrett, 2008) and age preparatory behaviors (e.g., Carr & Khodyakov, 2007). Based upon the literature, it is hypothesized that social support will moderate (reduce) the relationships among discrimination experiences, mental health, and age preparatory behaviors for TGNC adults.

 Hypothesis 2.2. Research has generally examined the role of death attitudes in aging (e.g., Gesser, Wong, & Reker). Although, death attitudes have rarely been examined among TGNC adults (e.g. MetLife, 2010). Death attitudes, however, have been demonstrated to have strong ties to age preparatory behaviors (Carr & Khodyakov, 2007). It is hypothesized that negative death attitudes will moderate (increase) the relationships among discrimination experiences, mental health, and age preparatory behaviors for TGNC adults.

 Hypothesis 2.3. Research has generally examined the role of aging anxiety in aging (e.g., Lasher & Faulkender, 1993). Although, aging anxiety has only been examined in a limited fashion among LGBT adults (e.g., Sharp, 1997). Aging anxiety, however, has been demonstrated to have strong ties to age preparatory behaviors (Luth, 2016). It is hypothesized that aging anxiety will moderate (increase) the relationships among discrimination experiences, mental health, and age preparatory behaviors for TGNC adults.

Methods

Participants

An *a priori* power analysis determined a sample size of 101 participants would be required. Using G*Power 3.1 (Faul, Erdfelder, Lang, & Buchner, 2007) a power analysis was performed. With 80% power (1- β) and a hypothesized medium effect size (Cohen's f^2 = .15) it was determined that a sample size of 92 participants was required for the largest power requirement in the Hayes PROCESS Macro (2013) (a moderated mediation, with three possible main effects and two interaction terms, with one dependent variable). The 10% sample size increase is to account for attrition and missing data.

Inclusion criteria for the current study are that participants must (a) be age 18 or older, (b) have access to the internet or mobile device to take the survey, (c) currently or have ever identified as trans(gender), gender-nonconforming, and/or non-binary, and (d) are fluent enough in English to complete the survey. Participants' data will be excluded from analysis if there is compelling indication of inaccurate responding or unfeasible response patterns (e.g., selecting the first response on most or every item). Participants will be ineligible to participate if they are (a) under the age of 18, (b) do not currently or have not ever identified as trans(gender), gender-nonconforming, and/or non-binary, (c) are unable to complete the survey in English. Participants will complete a prescreening measure to assess eligibility to participate in the study (Appendix A).

Participants (initial n = 574) were recruited via Amazon's Mechanical Turk (Mturk; www.mturk.com), and location was restricted to individuals residing in the U.S. Participants were screened (see appendix K for screening items) by a gender-check item and had to respond "yes" at both the beginning and end of the survey to the same question: "Do you now, or have

you ever, identified as transgender, gender-nonconforming, or gender non-binary?" Ninety-three participants were excluded based on not answering "yes" both times to this question. Of the remaining 484 participants, 72 incorrectly responded to more than 2/7 randomly inserted attention-check questions (ACQs; e.g., Please select "Disagree" for this item"), and those participants' responses were also removed, leaving 412 participants for the next phase of screening.

Participants were then screened based on their qualitative responses to several items (i.e., "Please describe any other challenges that you feel current older 65+ members of the trans/gender-nonconforming community are facing," "If you felt that you would have to go back into the closet, please tell us about the reasons why you thought that you would have to do this," and "In your own words, what do you think the purpose of this study is?"). Qualitative responses that were random strings of letters and/or numbers, were illogical in the context of the item (e.g., when asked about "going back in the closet" spoke about spring cleaning) or were copied directly from the internet were coded "0." Qualitative responses to the purpose question that were overly brief (e.g., "transgender"), did not follow study instructions (e.g., "Not sure"), or were hard to interpret were coded as "suspicious but not an automatic rule-out." Answers that followed study instructions were coded "1."

Next, participants were assessed on their response patterns (i.e., did their birth sex, current sex, current gender self-perception, and self-reported hormone replacement therapy align). Participants were assigned a "1" if their patterns of responses were likely, assigned a "0" if the responses were incongruent or improbable, or assigned "to be checked by an outside TGNC consultant." From the remaining 412 participants, 10 were slated to be checked by an outside consultant, those who were coded "1" for qualitative and "1" for response pattern or "?"

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on qualitative and "1" for response pattern were included for analysis, all others (n = 209) were excluded. Based on consultant feedback, nine participants were excluded from analysis due to incongruent responses. Finally, participants were screened for duplicate IP and location. Participants with locations and/or IPs that were repeated four or more times (n=43) were excluded from analysis. Six additional participants were recruited via an online snowball sample collected using a TGNC listserv comprising of individuals who have participated in previous research, community leaders, organizations, and trans-related e-lists listserv. This resulted in a final sample size of 154 participants from 37 U.S. states and territories and two who identified as currently outside the U.S.

Participants (N = 154) were individuals who self-identified as either currently or ever have identified as transgender or gender-nonconforming, who were over the age of 18, and able to read English. In general, participants from the current study tended to be younger (M age = 29.89, SD = 8.2), bisexual (31.8%), college educated (36.4% reported a 4-year degree, 16.9% a 2-year/technical degree, and 24.7% some college with no degree), white/European-American (non-Latino) (67.5%), and atheist or agnostic (53.2%). See Table 1 for more detailed demographic information pertaining to the current sample.

Table 1. *Sample Characteristics*

Characteristics	N = 154
Age, M (SD, Range)	29.89 (8.2, 18-60)
Currently live as self-identified gender, n (%)	113 (73.4)
Gender Self Perception, n (%)	
Masculine	23 (14.9)
Feminine	56 (36.4)
Transmasculine	18 (11.7)
Transfeminine	19 (12.3)
Genderqueer/Gender-nonconforming	36 (23.4)
Other	2 (1.3)
Sexual Orientation, n (%)	
Straight/Heterosexual	18 (11.7)
Bisexual	49 (31.8)
Gay	21 (13.6)

Lesbian	11 (7.1)
Queer	15 (9.7)
Pansexual	22 (14.3)
Asexual	17 (11.0)
Other	1 (0.6)
Education	
Doctorate degree	1 (0.6)
Master's degree	17 (11.0)
4-year college degree	56 (36.4)
2-year/technical degree	26 (16.9)
Some college (no degree)	38 (24.7)
High school/GED	15 (9.7)
Grade school	1 (0.6)
Race/Ethnicity	
White/European-American (non-Latino) = 1	104 (67.5)
Black/African-American (non-Latino) = 2	17 (11.0)
Asian/Asian-American/Pacific Islander = 3	13 (8.4)
Latino/Hispanic = 4	13 (8.4)
American-Indian/Native-American/Alaska-Native	2 (1.3)
Multiracial/Multiethnic = 6	5 (3.2)
Social Class, *n* (%)	
<$10,000 for the year 1	8 (5.2)
Between $10,000 and $24,999 for the year 2	30 (19.5)
Between $25,000 and $39,999 for the year 3	27 (17.5)
Between $40,000 and $54,999 for the year = 4	36 (23.4)
Between $55,000 and $69,999 for the year = 5	24 (15.6)
Between $70,000 and $79,999 for the year = 6	15 (9.7)
Over $80,000 for the year = 7	14 (9.1)
Religion	
Atheist & Agnostic	82 (53.2)
Christian	48 (31.2)
Jewish	5 (3.2)
Buddhist & Confucionist	5 (3.2)
Muslim/Islam	5 (3.2)
Alternative Healing Circles & Goddess Worship & Sun Worship (other pagan)	3 (1.9)
Other (None)	5 (3.2)
Other	1 (0.6)
How important religion is, *M (SD)*	3.7 (2.9)

Measures

   Demographics. A researcher-designed demographic form (Appendix B) is included in

the list of administered measures. Among the demographic information being collected includes

item such as: age, gender self-perception, race/ethnicity, educational status, sexual orientation,

family income level, religious/faith/spiritual preference and practice, country of residence, and whether they live in an urban, suburban, or rural environment.

Discrimination. Experiences of discrimination will be measured using the Gender Minority Stress and Resilience Scale (GMSR; Testa, Habarth, Peta, Balsam, & Bockting, 2015). The scale (Appendix C) consists of 54 items, is comprised of nine subscales, and measures gender-related discrimination, rejection, victimization, non-affirmation of gender identity, internalized transphobia, pride, negative expectations for the future, nondisclosure, and community connectedness. Participants respond to questions about discrimination, rejection, and victimization (17 items) with "never," "yes, before 18," "yes, after 18," or "yes, in the past year" checking all that apply. All other items are responded to using a five-point Likert scale ranging from strongly disagree to strongly agree.

The gender discrimination subscale taps into a range of domains in which one might experience discrimination because of gender identity or expression. The gender-related rejection subscale focuses on experiences of isolation, alienation, or exclusion. Gender-related victimization is a subscale about the violence and harassment individuals may experience because of gender identity or expression. Non-affirmation of gender identity is about instances in which an individual's gender identity or expression is not supported. Internalized transphobia is about the shame and guilt that people experience in relation to gender identity and expression. Pride is about feelings dignity, self-worth, and value that are derived from gender identity and expression. Negative expectations for the future are fears or apprehensions about possible negative outcomes related to one's gender identity or expression. Nondisclosure explores people's willingness or reluctance to share—how open they are about—their gender identity or expression. Finally, community connectedness explores how strongly individuals relate to or

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connect with those who share their gender identity or expression. The GMSR subscales

demonstrate moderate to excellent reliability both in development and in the current sample:

Gender-related discrimination (development $\alpha = .61$; current sample $\alpha = .73$); Gender-related

rejection (development $\alpha = .71$; current sample $\alpha = .78$); Gender-related victimization

(development $\alpha = .77$; current sample $\alpha = .81$); Non-affirmation of gender identity (development

$\alpha = .93$; current sample $\alpha = .88$); Internalized transphobia (development $\alpha = .91$; current sample α

$= .93$); Pride (development $\alpha = .90$; current sample $\alpha = .90$); Negative expectation for the future

(development $\alpha = .89$; current sample $\alpha = .99$); Nondisclosure (development $\alpha = .80$; current

sample $\alpha = .98$); and Community connectedness (development $\alpha = .90$; current sample $\alpha = .72$).

Depression. To assess depression, the Patient Health Questionnaire-9 (PHQ-9) (Kroenke,

Spitzer, & Williams, 2001) will be used. This scale (Appendix D) contains nine items that

evaluate depressive symptomology over the preceding two weeks. Responses range from 0-3

with a total score calculated in which a higher score indicates higher levels of depression. In two

separate Patient Health Questionnaire (PHQ) studies, the reliability of the PHQ-9 was good ($\alpha =$

.89 & .86; Kroenke, Spitzer, & Williams, 2001) and was excellent in the current sample ($\alpha =$

.90).

Anxiety. To assess anxiety, the Generalized Anxiety Disorder-7 (GAD-7; Spitzer,

Kroenke, Williams, & Lowe, 2006) will be used. This scale (Appendix E) uses seven items to

measure anxiety symptoms over the two weeks prior. Participants respond on a 0-3-point scale.

A total score is calculated in which a higher score indicates higher levels of anxiety. In a

studying using primary care patients, the reliability of the GAD-7 was excellent ($\alpha = .92$) and is

excellent in the current sample ($\alpha = .91$).

Death Attitudes. The Death Attitude Profile-Revised (DAP-R; Gesser, Wong, & Reker, 1988) Fear of Death Subscale (Appendix F) will be used to measure participants' apprehension about dying. There are seven items which use a seven-point Likert scale. A mean score is computed by dividing the total score by the number of items. The higher the score, the greater fear of death of an individual. The reliability of the scale was good (Amor's θ = .82) and good in the current sample (α = .81).

Anxiety about Aging. The Anxiety about Aging Scale (AAS; Lasher & Faulkender, 1993) will be used to examine attitudes about aging and older adults. The scale (Appendix G) uses 20 items with a five-point Likert scale from strongly disagree to strongly agree. A total score is calculated with higher scores indicating less anxiety about aging. Good reliability was found during the development of this scale (α = .82; Lasher & Faulkender, 1993) and acceptable in the current sample (α = .78).

Social Support. Two measures of social support will be used. The Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988) is used to assess the source from which an individual receives support. This scale (Appendix H) uses 12 items with a 7-point Likert scale to create a mean score for each subscale (significant other, friends, and family) and a total mean. Higher scores reflect a greater amount of perceived support. The reliability of each subscale was good to excellent: significant other (α = .91); family (α = .87); and friends (α = .85). The overall reliability of the scale in development was good (α = .88) and in the current sample was excellent (α = .92).

The Medical Outcomes Study Social Support Survey (MOS; Holden, Lee, Hockey, Ware, & Dobson, 2014) will be used to assess the type of support that participants receive. The survey (Appendix I) uses six questions with a five-point Likert scale to create a total score with three

subscales (tangible support, affectionate support and positive social interaction, and emotional/informational support). Higher scores indicate higher levels of support. Among two age cohorts, the scale demonstrated moderate to good reliability (α = .81 & .70) and in the current sample was good (α = .83).

  Preparedness for Aging. There have been a few studies which look at various end-of-life, aging, and death preparatory behaviors (Carr & Khodyakov, 2007; Robbins, 1994). Thirteen questions (Appendix J) will assess familiarity with a number of these behaviors. For example: a will, a living will, and life insurance. Response options will be yes/no. Sixteen questions will assess planning behaviors. For example: if the participant has a will, receives regular medical checkups, and has a pension or other retirement plan. Response options will be on a one to seven Likert-type scale from 1 (will not have), 4 (plan on having), and 7 (currently have). In the current sample, familiarity with behaviors had good reliability (α = .86) and planning had excellent reliability (α = .92).

Procedure

  A dual recruitment method will be used to gather cross-sectional survey data via two online mechanisms. The first mechanism will be Amazon's Mechanical Turk (Mturk). Mturk is gaining popularity as a platform for crowdsourcing data (Huff & Tingley, 2015). It is an online marketplace where individuals can be recruited to complete activities known as human intelligence tasks (HITs), such as online surveys. Participants can preview HITs and the instructions before selecting to complete it. Following the successful completion of a HIT, the administrator of that HIT compensates participants, known as "workers." The funds to purchase Mturk HITS are placed directly into an account. For this study, participants recruited through Mturk will receive $1 (USD) in compensation for completing the study survey HIT, in line with

previous Mturk research (Buhrmester, Kwang, & Gosling, 2011; Eriksson & Simpson, 2010; Sprouse, 2010). Surveys completed via Mturk are anonymous, as the collection of identifying information (e.g., names, email addresses) is prohibited by Mturk.

With the growing popularity of Mturk, there have been increasing concerns about the validity of the results obtained from it. To date, worker demographics have not been publicly released by Amazon. However, there have been several exploratory studies examining demographic data obtained through Mturk samples and have found that Mturk workers are more diverse than other samples recruited through other online and even traditional methods (Casler, Bickel, & Hackett, 2013). It has also been demonstrated that Mturk workers are more representative of the U.S. population than other in-person convenience samples (Berinsky, Huber, & Lenz, 2012). This representativeness extends to employment status. A common concern about Mturk is the representativeness of various occupational industries. However, it has been found that employment status of Mturk workers is like results from the Cooperative Congressional Election Survey, a nationally stratified sample survey that is administered yearly by the U.S. federal government (Huff & Tingley, 2015).

Data from traditional research methods have also been compared to data obtained from Mturk, and it has found to be at least as reliable (Buhrmester, Kwang, & Gosling, 2011). One example is Casler et al.'s (2013) study in which participants recruited via Mturk performed equally well on a behavioral task as those who completed it in person. Framing effects, priming, and prisoner's dilemma tasks have also been demonstrated as equally reliable using an Mturk sample an in-person computer lab sample (Horton et al., 2011). Studies examining risk taking and body satisfaction have also had similar results using both Mturk and traditional recruitment methods (Eriksson & Simpson, 2010; Gardner, Brown, & Boice, 2012).

The other method will be an online snowball sample collected via a TGNC listserv comprised of individuals who have participated in previous research, community leaders, organizations, and trans-related e-lists (Witten, 2014). An initial recruitment email will be sent via the listserv, in which the study will be described and a link to the informed consent, screener, and survey. Within a week to two weeks, a follow-up email will be sent as a reminder about the study, with the same study description and link to the survey with consent and screener. The survey will be administered online through Qualtrics on participants' personal computers or mobile phones and will take approximately an hour to complete.

An online Qualtrics survey will be used to screen potential participants for inclusion criteria (Appendix A). Participants who qualify will automatically be presented with a link to a separate Qualtrics survey with the study informed consent and full survey. If individuals do not qualify, based on their responses, they will receive a message informing them they do not qualify for the study and thanking them for their time. Once participants reach the end of the full survey, they will be presented with a debriefing form. The debriefing form will include information about the study, psychological resources for mental health or discrimination issues that may have been produced by the survey, and information about aging preparatory behaviors. Institutional Review Board (IRB) approval of the study's protocol will be obtained before any participants are recruited.

Data Analytic Plan

Preliminary Analyses. Before conducting the primary statistical analyses, descriptive statistics (i.e., means, standard deviations, percentages, and frequencies) will be computed of participants' discrimination, depression, anxiety, level of social support, death attitudes, and anxiety about aging. Normality tests (i.e., skewness and kurtosis) will be performed to determine

whether subscales and scales are normally distributed. A value of 2.0 will be used as the critical cutoff to identify values that are skewed or kurtotic. Data transformations will be used if necessary to improve abnormal distributions. Multicollinearity will also be checked for using the correlation coefficients (with $r < .70$ as the goal) between all independent variables.

A correlation matrix will be created to examine the bivariate correlations among participant age, discrimination experiences, depression, anxiety, death attitudes, anxiety about aging, social support, and preparedness for aging.

Primary Analyses. To identify the patterns of connections between discrimination, mental health, and preparedness for aging, a series of simultaneous multiple regressions will be performed. The first and second regression will include the gender-related discrimination, rejection, victimization, and non-affirmation of gender identity subscales of the GMSR (Testa, Habarth, Peta, Balsam, & Bockting, 2015) as predictor variables, and anxiety and depression as separate criterion variables. In the third regression, anxiety and depression will regress onto preparedness for aging.

A mediational model will be developed using the strongest unique predictors from the regressions using the PROCESS macro (Hayes, 2013). In this model, the most highly predictive index of gender identity/expression discrimination will be specified to lead to most highly predictive index of symptoms of anxiety/depression, which will then be specified to lead to preparedness for aging (Figure 2).
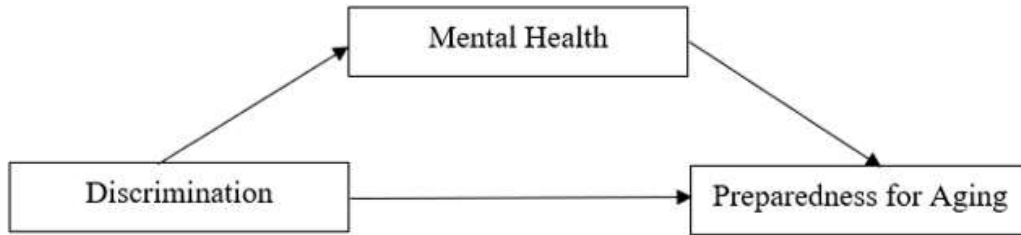
Figure 2. Mental health as mediator of relationship between discrimination and preparedness for aging.

This meditational model will then be expanded to a moderated mediation (creating three moderation mediations) with the PROCESS macro. The mediation will be examined differentially as a function of participants' social support (Figure 3). Finally, two similar moderated mediations will be run with death attitudes and anxiety about aging as the moderators (see Figures 4-5).
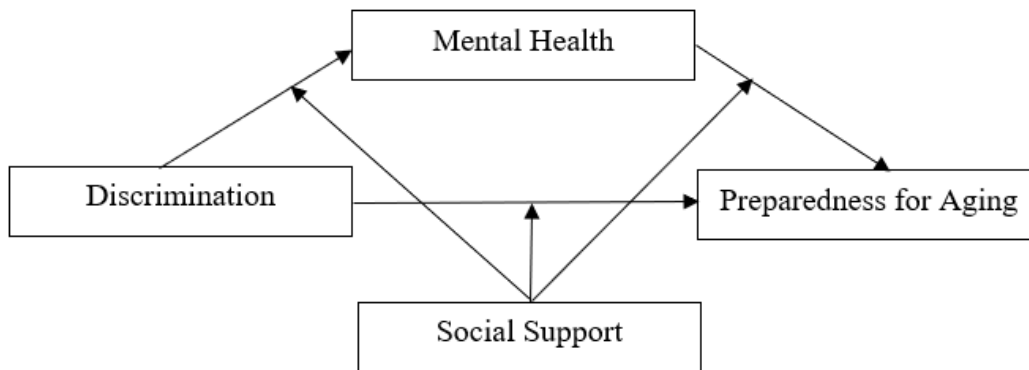
Figure 3. Social support as a moderator of relationships among discrimination, mental health, and preparedness for aging.
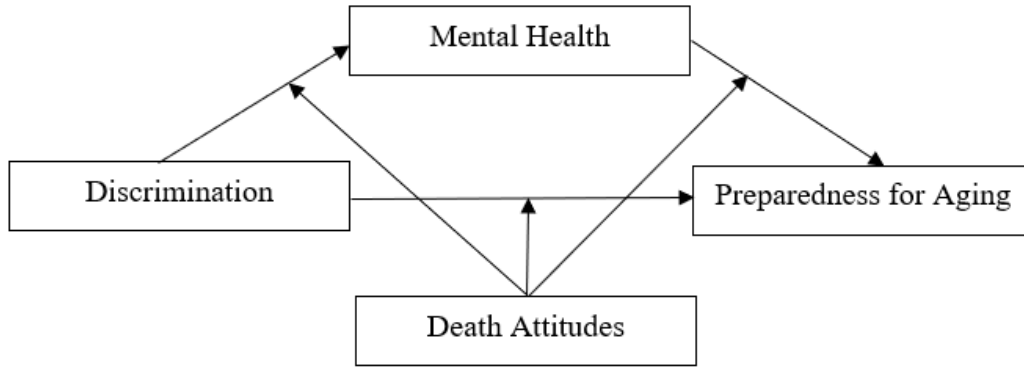
Figure 4. Death attitudes as a moderator of relationships among discrimination, mental health, and preparedness for aging.
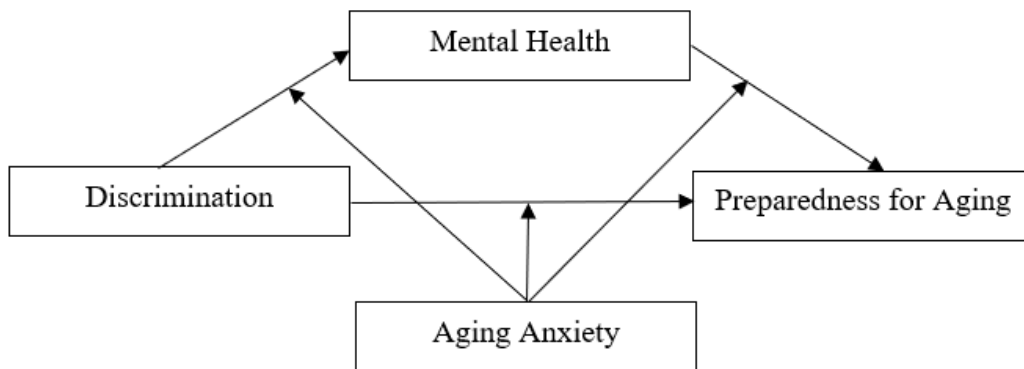
Figure 5. Aging anxiety as a moderator of relationships among discrimination, mental health, and preparedness for aging.

Additional Exploratory Analyses. Two one-way between-subjects ANOVAs will be run to compare preparedness for aging familiarity and planning among the different gender identities in the sample. The three groups that were compared using the one-way between-subjects ANOVAs were transmasculine/masculine (hereafter referred to as the trans masculine group) identified individuals, transfeminine/feminine (hereafter referred to as the trans feminine group) individuals, and genderqueer/gender-nonconforming (hereafter referred to as the GNC group) individuals and those who selected "other."

To identify patterns of connections among social support, death attitudes, aging anxiety (the proposed moderators) in relation to age preparation and planning, four exploratory regressions will be performed. In each multiple regression, age and dummy coded gender self-perception were entered in the first step. For the first two multiple regressions social support (MSPSS and MOS) were entered as the second step as predictors and age preparation familiarity and age preparation planning were entered as the outcome variables. For the second two multiple regressions aging anxiety and death attitudes were entered as the second step as predictors and age preparation familiarity and age preparation planning were entered as the outcome variables.

Results

Preliminary Analyses

Descriptive Statistics. The means and standard deviations for all study variables appear in Table 2. Based on the cutoffs established by the authors of the Patient Health Questionnaire-9 (PHQ-9; Kroenke et al., 2011), just under a quarter of the sample (23.4%) were experiencing clinically significant levels of depression, of whom 27.9% reported mild depression, 21.4% moderate depression, 19.5% moderately severe depression, and 3.9% severe depression. However, 76.6% did not have clinically significant depression symptoms. Using the cutoffs established by the Generalized Anxiety Disorder-7 (GAD-7; Spitzer, Kroenke, Williams, & Lowe, 2006) about a third of the sample (34.4%) reported clinically significant levels of anxiety, with 29.2% reporting mild anxiety, 22.7% reporting moderate anxiety, and 11.7% reporting severe anxiety. The percentage of participants who endorsed specific aging concerns appear in Table 3. The percentages, means, and standard deviations of age preparatory familiarity and planning are in Table 4.

Table 2

Means and Standard Deviations of Study Variables

Variable	M	SD	Rating
Depression	9.08	6.18	Low Moderate
Anxiety	7.36	5.32	Low Moderate
Social Support: MSPSS	4.73	1.11	Moderate
Social Support: MOS	3.78	0.8	Low
Aging Anxiety	41.52	10.18	Low
Death Attitudes	4.23	0.97	High
GMSR:			
Discrimination	2.73	2.68	Moderate
Rejection	4.22	3.52	Moderate
Violence	5.31	5.1	High
Non-affirmation	16.89	6.11	High
Internalized Transphobia	19.4	8.73	High Moderate
Pride	24.12	7.87	High Moderate
Negative Expectations	25.78	8.56	Moderate
Nondisclosure	23.38	18.12	High
Community Connectedness	15.19	3.56	Low Moderate
Aging Preparation Familiarity	6.39	3.67	Low
Aging Preparation Planning	3.23	1.01	Low

Table 3

Participant Endorsement of Aging Concern

	n	%
1. Losing the ability to care for yourself	112	72.7
2. Going into a nursing home or assisted living facility	77	50
3. Knowing who will claim or be given your body after you die	38	24.7
4. Being buried in clothing from the wrong gender	31	20.1
5. Having the wrong name being put on your death certificate or tombstone	28	18.2
6. Having continued access to hormones	24	15.6
7. Having medical complications from age and medical transition	37	24
8. Not being able to get care because of your age and medical transition	36	23.4
9. Not being able to transition socially before you die	30	19.5
10. Not being able to transition medically before you die	21	13.6
11. Not being able to completely transition the way you want before you die	31	20.1

Table 4

Percentage Familiarity with and Planning in Age Preparatory Behavoirs

Age Preparatory Behavior	Familiar n (%)	Planning *M (SD)*
Will	121 (78.6)	4.06 (1.55)
Living Will	90 (58.4)	3.72 (1.66)
DPHC	90 (58.4)	3.72 (1.60)
Life Insurance	128 (83.1)	4.40 (1.82)
Long-term care insurance	60 (39.0)	3.61 (1.76)
Regular Medical checkups	93 (60.4)	4.85 (1.81)
Organ Donor	99 (64.3)	4.38 (2.21)
Pension or Retirement	69 (44.8)	3.77 (1.72)
Pre-arranged Funeral Plans	63 (40.9)	3.32 (1.74)
A Trust	77 (50)	3.05 (1.83)
Partner Agreements	48 (31.2)	3.19 (1.81)
Rights of visitation	25 (16.2)	2.97 (1.68)
Informal caregiving arrangements	31 (20.1)	
With partner/spouse		4.30 (2.10)
With parent		3.97 (2.13)
With children		2.81 (1.98)
With siblings		3.38 (2.05)
With other bio relatives		2.99 (2.00)
With friends/neighbor		2.88 (1.96)
With religious community		2.27 (1.78)
With other		1.61 (1.47)
Discussion about wishes		
With partner/spouse		4.37 (2.10)
With parent		3.98 (2.18)
With children		2.86 (2.05)
With siblings		3.39 (2.09)
With other bio relatives		3.09 (2.10)
With friends/neighbor		3.07 (2.01)
With religious community		2.38 (1.96)
With other		1.62 (1.56)

Normality Assumptions. Normality assumptions were checked prior to running the primary analyses. The depression, anxiety, social support (MSPSS and MOS), aging anxiety, death attitudes, and Gender Minority Stress and Resilience subscales (including gender-related discrimination, gender-related rejection, violence, non-affirmation, internalized transphobia, pride, negative expectations, non-disclosure, and community connectedness) met the criteria for skewness and kurtosis of an absolute value of 2.0. One univariate outlier was found in the MSPSS scale, two in the MOS, two in age prep, one in death attitudes, one in gender-related discrimination, two in gender-related rejection, and one in violence. As these outliers represented such a small proportion of the data for each scale (less than 1%) they were retained (Cohen et al.,

2003). Mahalanobis distance had critical value of $\alpha = 36.123$, and six multivariate outliers were detected. As these outliers were not very extreme and represented such a small percentage (3.9%) of the data they were retained due to concerns about sample size.

Correlation Matrix. A correlation matrix was created to examine the bivariate correlations among discrimination experiences, depression, anxiety, death attitudes, anxiety about aging, social support, and preparedness for aging (Table 5). Aging preparation familiarity was significantly related death attitudes. Aging preparation planning was related to social support, aging anxiety. and death attitudes. Neither aging preparation familiarity or planning were significantly related to depression or anxiety.

Table 5

Bivariate Correlations of Study Variables

	1	2	3	4	5	6	7	8	9	10	11	12
1 Familiarity Aging Prep												
2 Planning Aging Prep	-.04											
3 Depression	-.13	.12										
4 Anxiety	-.12	.09	.78**									
5 MSPSS Social Support	.03	.21**	-.32**	-.27**								
6 MOS Social Support	.11	.11	-.28**	-.21**	.72**							
7 Aging Anxiety	.05	.26**	-.25**	-.34**	.32**	.29**						
8 Death Attitudes	-.19	.29**	.38**	.39**	-.09	-.10	-.08					
9 Discrimination	-.05	.06	.29**	.32**	-.09	-0.11	-.06	.16				
10 Rejection	.02	.06	.29**	.31**	-.04	-.03	-.11	.31**	.61**			
11 Violence	-.002	.002	.20*	.26**	-.08	-.11	-.10	.18*	.59**	.72**		
12 Non-affirmation	-.11	.01	.39**	.41**	-.15	-.05	-.12	.31**	.39**	.49**	.46**	
13 Age	.11	.03	-.05	.02	-.11	-.01	.16	-.04	-.02	.03	.05	-.07

Note. * $p < .05$, ** $p < .01$

Primary Analyses

Regressions. To identify the patterns of connections among discrimination, mental health, and preparedness for aging in TGNC adults, a series of multiple regressions were performed using SPSS Software Package, Version 25. In the first multiple regression, non-affirmation, gender-related discrimination, violence, and gender-related rejection were entered as

predictors and depression entered as an outcome variable; the overall model was significant, and explained 18.7% of the variance in depression [$F(4, 149) = 8.578, p < .001$]. When considering each subscale of the GMSR separately, only the non-affirmation subscale uniquely predicted depression ($\beta = .324, p < .001$), while the gender-related discrimination ($\beta = .167, p = .088$), violence ($\beta = -.152, p = .177$), and gender-related rejection ($\beta = .146, p = .209$) subscales did not.

In the second multiple regression the same four subscales of the GMSR as in the first regression were entered as the predictor variables, and anxiety entered as the outcome variable; the overall model was significant accounting for 20.2% of the variance in anxiety [$F(4, 149) = 9.433, p < .001$]. When considering each subscale of the GMSR separately, only the non-affirmation subscale uniquely predicted depression ($\beta = .323, p < .001$), while the gender-related discrimination ($\beta = .173, p = .075$), violence ($\beta = -.051, p = .646$), and gender-related rejection ($\beta = .088, p = .441$) subscales did not.

In the third regression, anxiety and depression were entered as the predictors, and age preparation familiarity as the outcome; the overall model was not significant but accounted for 1.9% of age preparation familiarity [$F(2, 151) = 1.427, p = .243$], and as a result the individual beta-weights will not be interpreted.

In the fourth regression, anxiety and depression were entered as the predictors, and age preparation planning as the outcome; the overall model was not significant but accounted for 1.5% of age preparation planning [$F(2, 151) = 1.113, p = .331$], and as a result the individual beta-weights will not be interpreted.

In the fifth regression, the same four subscales of the GMSR were entered as the predictor variables, and age preparation familiarity entered as the outcome variable; the overall

model was not significant but accounted for 2.3% of the variance in anxiety [$F(4, 149) = .893$, $p = .470$], and as a result the individual beta-weights will not be interpreted.

In the sixth regression with the same four subscales of the GMSR entered as the predictor variables, and age preparation planning entered as the outcome variable, the overall model was not significant but accounted for .9% of the variance in anxiety [$F(4, 149) = .353$, $p = .842$], and as a result the individual beta-weights will not be interpreted.

Mediations and moderated mediations. As discrimination and mental health were not significant predictors of preparedness for aging in the previous regressions, a mediation model was not conducted because there were no significant direct effects to mediate. As the mediation models were not run, they will not be expanded to the hypothesized moderated mediations.

Additional Exploratory Analyses

One-way between-subjects ANOVAs. To compare preparedness for aging familiarity and planning among the different gender identities in the sample, two one-way between-subjects ANOVAs were conducted. The three groups that were compared using the one-way between-subjects ANOVAs were transmasculine/masculine (hereafter referred to as the trans masculine group) identified individuals, transfeminine/feminine (hereafter referred to as the trans feminine group) individuals, and genderqueer/gender-nonconforming (hereafter referred to as the GNC group) individuals and those who selected "other." The first one-way between-subjects ANOVA on the effect of gender identity on age preparation familiarity was significant [$F(2, 151) = 3.343$, $p = .038$]. Post hoc comparisons using Tukey indicated that the mean score for the trans feminine group ($M = 5.69$, $SD = 3.49$) was significantly different than the GNC group ($M = 7.53$, $SD = 3.47$). However, the trans masculine group ($M = 6.61$, $SD = 3.96$) did not significantly differ from the trans feminine and GNC groups. The second one-way between-subjects ANOVA on the

effect of gender identity on age preparation planning was significant [$F(2, 151) = 4.931$, $p = $ 008]. Post hoc comparisons using Tukey indicated that the mean score for the trans feminine group ($M = 3.32$, $SD = 1.02$) and the trans masculine group ($M = 3.45$, $SD = 1.08$) were significantly different than the GNC group ($M = 2.80$, $SD = 0.80$), but not from each other.

      Regressions. To identify patterns of connections among social support, death attitudes, aging anxiety (the proposed moderators) in relation to age preparation and planning, four exploratory regressions were performed. In the first multiple regression, age and dummy coded gender self-perception (GNC=1, trans masculine and trans feminine=0) were entered in the first step and social support (MSPSS and MOS) were entered as the second step as predictors and age preparation familiarity was entered as an outcome variable; the overall model was not significant, but explained 5.2% of the variance in age preparation familiarity [$F(4, 149) = 2.03$, $p = .093$], and as a result the individual beta-weights will not be interpreted.

      In the second multiple regression, age and dummy coded gender self-perception were entered in the first step and social support (MSPSS and MOS) were entered as the second step as predictors and age preparation planning was entered as an outcome variable; the overall model was significant, and explained 10.3% of the variance in age preparation planning [$F(4, 149) = 4.26$, $p = .003$]. When considering each type of social support separately neither the MSPSS ($\beta = .198$, $p = .091$) or the MOS ($\beta = .017$, $p = .886$) uniquely predicted age preparation planning. Gender self-perception was a significant predictor ($\beta = -.241$, $p = .003$), but age ($\beta = .035$, $p = .661$) was not.

      In the third multiple regression, age and dummy coded gender self-perception were entered in the first step and death attitudes and aging anxiety were entered the second step as predictors and age preparation familiarity was entered as an outcome variable; the overall model

was significant, and explained 6.8% of the variance in age preparation familiarity [$F(4, 149) = 2.70$, $p = .033$]. When considering death attitudes ($\beta = -.148$, $p = .072$) and aging anxiety ($\beta = .032$, $p = .696$), neither uniquely predicted age preparation familiarity. Age ($\beta = .103$, $p = .200$) and gender self-perception ($\beta = .152$, $p = .065$) were also not unique significant predictors of age preparation familiarity.

In the fourth multiple regression, age and dummy coded gender self-perception were entered in the first step and death attitudes and aging anxiety were entered as the second step as predictors and age preparation planning was entered as an outcome variable; the overall model was significant, and explained 17.1% of the variance in age preparation planning [$F(4, 149) = 8.910$, $p < .001$]. When considering death anxiety ($\beta = .277$, $p < .001$) and aging anxiety ($\beta = .278$, $p < .001$) separately, both uniquely predicted age preparation familiarity. Gender self-perception ($\beta = -.166$, $p = .031$) was also a significant unique predictor, but age was not ($\beta = -.015$, $p = .840$).

Discussion

The purpose of this study was to explore relationships—significant and non-significant—among discrimination, mental health (i.e., depression and anxiety), preparation for aging (i.e., familiarity and planning), social support, death attitudes, and aging anxiety among TGNC adults. Neither discrimination nor mental health predicted preparation for aging familiarity or planning. Discrimination did, however, predict both anxiety and depression, although only the non-affirmation subscale was a unique predictor of both. As discrimination and mental health were not a significant predictor of preparedness for aging in the previous regressions, the hypothesized mediation model and subsequent moderated mediation models were not conducted. Exploratory one-way between-subjects ANOVAs found that age preparatory familiarity and planning differed

significantly by gender self-perception. Additional exploratory multiple regressions were run to identify patterns of connections among social support, death attitudes, aging anxiety (the proposed moderators) in relation to age preparation and planning. Social support predicted preparation for aging planning, but not familiarity. Death attitudes and aging anxiety also predicted preparation for aging planning and familiarity.

Descriptives

  Discrimination. The current sample showed mixed results for discrimination. Compared to a subsample of the Trans Health Survey of U.S. and Canadian transgender adults, the current sample had similar rates of gender-related discrimination and rejection, but higher levels of victimization and non-affirmation of gender identity (Testa, Habarth, Peta, Balsam, & Bockting, 2015). There are two possible explanations for why there are higher levels of victimization and non-affirmation of gender identity in this sample. First, the current sample is primarily composed of TGNC individuals recruited from Mturk. TGNC individuals may turn to platforms like Mturk as an alternative means of income if they experience high levels of discrimination in a traditional employment setting. Second, there may be a history effect as the original validation sample was collected prior to 2015 and there have been an increasing number of legal (e.g., North Carolina's House Bill 2) and political (e.g., ban on TGNC individuals serving in the military) changes which have brought increasing attention—both positive and negative—to TGNC individuals.

  Depression and anxiety symptoms. In the current study, 23.4% reported clinically significant levels of depression and 34.4% reported clinically significant levels of anxiety. These rates are similar, if not slightly lower, than those found in other U.S. adult LGBT samples (Budge, Adelson, & Howard, 2013; Clements-Nolle et al., 2001; Cochran and Mays, 2000; Cochran et al., 2003; Nuttbrock et al., 2010). These rates, however, still exceed the general

prevalence of these disorders. Major depressive episodes have a prevalence of about 6.7% of U.S. adults (NIMH, 2017b), while any anxiety disorder has a lifetime prevalence of 31.1% or about 19.1% of U.S. adults in the previous year (NIMH, 2017a). The rates of clinically significant depression and anxiety in this sample may be explained by the high rates of violence and non-affirmation that this sample experience and the relationship between discrimination mental health (Meyer, 2003; Rood et al., 2016).

Preparation for Aging. The current sample reported much lower levels of having wills, durable power of attorney for health care (DPAHC), and informal conversations about their wishes than a sample of young older adults (Carr & Khodyakov, 2007). One possible explanation for this is the difference in age among the two samples, as the mean age of the current sample is 29.89 years and the previous study focused on a longitudinal study with a sample of 64-65-year-olds. This is among the first studies to examine preparation for aging among a TGNC population. The current sample was familiar with an average of 6.39 types of aging preparations out of fourteen behaviors. However, on average participants reported low likelihood of planning on or having participated in age preparatory behaviors ($M = 3.23$). For TGNC individuals, these behaviors may be uniquely important for ensuring that their wishes are respected. Currently, only a few states have laws (e.g., California, New Jersey, and Rhode Island) which allow death certificates to reflect individuals' gender identities and twenty-one states and Washington D.C. have non-discrimination laws based on gender identity for housing, which may affect TGNC individuals' ability to find a senior living community or long-term residential care. In the current sample, one factor that promoted aging preparation planning was greater social support. These behaviors also differed by gender self-perception, as demonstrated by the exploratory one-way between-subjects ANOVAs. Part of the reason why the GNC group may not be participating in

age preparatory behaviors at the same rate is they may have greater barriers than the masculine or feminine groups—or binary trans individuals. In a national sample of TGNC individuals, non-binary individuals reported higher rates of physical and sexual assault, unemployment, avoiding healthcare due to fear of being discriminated against, and police harassment than binary trans individuals (Harrison, Grant, & Herman, 2012). Future research may wish to investigate the specific barriers that GNC individuals have for participating in age preparatory behaviors.

Social Support. Participants in the current study reported higher levels of social support on the MSPSS compared to a U.S. sample of cisgender sexual minority women (Tabaac et al., 2016), higher levels of social support than U.S. transgender adults (Budge, Adelson, & Howard, 2013), but lower than undergraduate students (Zimet, Dahlem, Zimet, & Farley, 1988) and a sample of cisgender LGB adults (Potoczniak, Aldea, & DeBlaere, 2007). Participants in the current study also reported lower levels of social support on the MOS compared to a U.S. sample of Christian clergy (Lusher, 2016). These comparisons are supported by research documenting lower levels of social support among transgender compared to cisgender individuals (Factor & Rothblum, 2007). One reason for the slightly lower levels of mental health issues in the current TGNC sample could be because of the higher levels of social support also found, as bolstered by the significant relationships between social support and mental health identified in the correlation matrix.

Aging Anxiety and Death Attitudes. Participants in the current study reported lower anxiety about aging than cisgender undergraduate students (Lasher & Faulkender, 1993). Possible explanations for this include the aging concerns for TGNC individuals not only include typical age-related concerns but include specific gender-related concerns as well. Additionally, TGNC individuals may have more immediate concerns which supersede concerns about aging

(Grant et al., 2011; James et al., 2016; Edelman et al., 2015). The current sample also had higher

fear of death and death avoidance, and lower neutral, approach, and escape acceptance to three

age cohorts (Wong, Reker, & Gesser, 1994). There are many reasons death is feared ranging

from pain and suffering, loss of self, the unknown, and worry about surviving family members

(Wong, Reker, & Gesser, 1994). Concerns among the current sample may be found in Table 3.

The high level of endorsement of statements 1 and 2 shows that the sample shares common

concerns such as losing the ability to care for themselves or going into a nursing home or

assisted living facility, however, they also have specific transition age-related concerns. The high

death avoidance may also relate to the low age preparation planning.

Correlations

None of the four discrimination subscales or mental health were related to aging

preparation familiarity or planning. However, aging anxiety, death attitudes, and social support

were all associated to aging preparation planning, and death attitudes was related to aging

preparation familiarity. This suggests that while familiarity with aging preparation behaviors

may be prompted by TGNC individuals' death attitudes, there are further factors associated with

the active planning and participation in those behaviors—namely aging anxiety and social

support. Social support was negatively associated with discrimination; however, it was not

statistically significant. The direction of the association is supported by other studies (Cain et al.,

2017).

Anxiety was, however, negatively associated with social support (Budge, Rossman, &

Howard, 2008) and aging anxiety (Bodner, Shira, Bergman, & Cohen-Fridel, 2015), and

positively associated with death attitudes (Abdel-Khalek, 1997) and discrimination (Clements-

Nolle, Marx, & Katz, 2006; Hendricks & Testa, 2012; James et al., 2016) as supported by the

literature except for aging anxiety. Depression was also negatively associated with social support (Budge, Rossman, & Howard, 2008) and aging anxiety (Bodner, Shira, Bergman, & Cohen-Fridel, 2015), and positively associated with death attitudes (Abdel-Khalek, 1997) and discrimination (Clements-Nolle, Marx, & Katz, 2006; Hendricks & Testa, 2012; James et al., 2016), as supported by the literature apart from aging anxiety. It may be that among the current sample, as anxiety and depression increased there was less time or resources to devote to worrying about aging and age-related concerns.

Aging preparation familiarity and aging preparation planning were not associated with each other. It is possible that because the mean age of the sample is so young ($M = 29.89$) that most individuals are not yet participating in age preparatory behaviors, even if they are aware of them. Additionally, there may be some individual difference based on family and social network structure. Even though age preparatory planning scores are mean scores, if individuals have larger family and social networks, there are more possible opportunities for informal planning than for individuals who may be estranged from their families of origin or who may not have a very large social network. The GNC group also had significantly higher familiarity and lower planning than the masculine and feminine groups. A possible explanation for this is they face higher levels or additional barriers that binary trans individuals do not. There may also be several personalities within the sample that are counterbalancing each other. While there may be some people with high familiarity and high planning and low familiarity and low planning, there may be those with high familiarity but low planning and those who reported low familiarity yet high planning.

Age was also not correlated with any of the study variables. Although the range of ages includes in the sample ranged from 18-60, the mean age was low (29.9 years) with a standard

deviation of only 8.2 years. This suggests the majority of the sample was in their early twenty's to mid-thirty's. There may be a cohort effect from so many individuals being around the same mean age.

Regression Analyses

As hypothesized, discrimination significantly predicted both depression and anxiety. However, contrary to hypothesis, discrimination and mental health were not associated with age preparatory behaviors. This suggests that despite the moderate and high levels of discrimination among this sample, it was not related one's familiarity with age preparatory behaviors or planning. While discrimination has been identified as a barrier (Buckey & Browning, 2013), it is possible that it is the anticipation of discrimination or certain types of medical, legal, and social discrimination that are more related, as opposed to the discrimination, violence, rejection, and non-affirmation measured in the current study. Additionally, depression and anxiety did not influence this sample's familiarity with age preparatory behaviors or planning. A study by Luth (2016) found that people with expansive future time perspective (FTP) were less likely to participate in advance care planning. Sociodemographic factors (e.g., depression, education, race/ethnicity, and marital status) were significant for advance care planning among people with expansive FTP, but not for those with limited FTP (Luth, 2016). It is possible that a more specific form of anxiety (aging anxiety) or FTP may be important in explaining the effects of mental health. It is suggested that for people with expansive FTP, death may seem far off and so planning and participating in aging preparatory behaviors may not be a priority (Luth, 2016).

In additional exploratory analyses, social support predicted preparation for aging planning, but not familiarity, while death attitudes and aging anxiety predicted both preparation for aging familiarity and planning. This suggests that death attitudes and aging anxiety may

expose TGNC individuals to different aging preparatory behaviors, but social support may help to facilitate enacting the behaviors. When controlling for age, it was not a significant predictor in any model, but gender self-perception was a significant predictor for age preparation planning (aging anxiety and death attitudes model) and age preparation planning (social support model). This suggests that social support may not be an avenue through which one learns about age preparatory behaviors but may be significant for planning or participating in them. Having a large support network may allow greater engagement with different types of informal planning, as well as increase options for formal planning. These results also indicate that aging anxiety and death attitudes are associated with age preparatory familiarity and planning. If someone has anxiety about aging that may propel them to find ways of alleviating that anxiety by learning about and engaging in preparatory behaviors. Conversely, if someone has high aging anxiety, they may also engage in avoidant behavior by not participating in age preparatory behaviors. Depending on an individual's death attitudes and cultural beliefs they may be more inclined to engage in certain age preparatory behaviors than others.

Implications

The current study also found higher aging anxiety and death attitudes were related to aging preparatory behaviors, so clinicians may wish to assist TGNC individuals in identifying and addressing their concerns around aging. In previous research, it has been found that a common theme among TGNC individuals was that they planned to detransition in later life to access the care they felt they needed (Witten, 2012b). Detransitioning is a process by which an individual returns to presenting as the gender society expects based on what aligns with the sex the individual was assigned at birth. Additionally, some had plans to commit suicide, rather than having to deal with the challenges they anticipated with growing old (Witten, 2012a). This

suggests a high degree of anticipatory fear of aging among the TGNC community. Along with mental health care providers addressing these concerns on an individual level, this also has implications at the community level, in which stakeholders and allies of the TGNC community can seek to create safe spaces for aging and older TGNC individuals and push for policy changes which would offer TGNC individuals legal protections in senior-living, retirement, and assisted-living communities.

Another finding to consider is the role of social support. Social support was found to be related to aging preparatory behaviors, so it may be important to find ways to increase social support for TGNC individuals and the community. This support may come from a variety of places; however, the reality is that many TGNC individuals still face discrimination and rejection from their families of origin, work/school peers, and places of worship (James et al., 2016). This may require alternative forms of social support to be considered for this population, including: moderated TGNC support groups (both online and in-person), open internet-based forums and groups, LGBT community centers, community-based organizations, and retirement communities.

Non-affirmation of gender identity was the strongest unique predictor of both depression and anxiety. Non-affirmation includes things such as having to repeatedly explain one's gender identity or correct one's pronouns, having difficulty being perceived as one's gender, and not having other people respect one's gender identity because of one's body or physical appearance (Testa, Habarth, Peta, Balsam, & Bockting, 2015). Finding ways to support TGNC individuals handle non-affirmation and educating others about how certain behaviors are non-affirming may help to mitigate these relationships.

Limitations and Future Directions

The current study documented both significant and non-significant relationships between discrimination and mental health, aging anxiety, death attitudes, and social support with aging preparation familiarity, and aging anxiety and death attitudes with aging preparation planning. Many of these findings were exploratory, as only hypothesis 1.1 was supported. As such, many of these findings should be viewed within the context of several limitations.

First, a high number (73%) of participants were screened out. Participants were excluded for not correctly answering a gender check, for incorrectly answering attention check items, for assessments of qualitative answers, response patterns, and duplicate IP and location. This extensive screening process provides high confidence in the participants for those who were included but calls into question the reliability of the recruitment method. Use of the external consultant also helped to increase confidence in the included participants. Additionally, with excluding so many participants, the final sample size ended up being fairly small yet remained adequately powered based on the *a priori* power analysis that was performed. Future research may wish to collect a community sample to increase the heterogeneity of the sample and there may be differences between an in-person community sample to TGNC individuals and those who turn to platforms such as Mturk.

A second limitation is that this study either lumped all TGNC individuals together or created artificial groupings between binary trans and GNC individuals. Study results suggest that age preparation planning differ by gender self-perception. It is possible that there may be differences between binary trans individuals and GNC individuals. Additionally, the TGNC individuals were at all different stages of transition; some were not yet out in their daily lives and others were pursuing various aspects of social and medical transition. Future studies may want to

compare individuals at different stages of their desired transitions, as well as consider the context of their life stage. For example, a TGNC individual who started a career before transitioning may have the benefits of a company pension or retirement fund versus a TGNC individual who transitioned right out of high school. Additionally, a TGNC individual who opts for gender-affirmation surgery may be more likely to be exposed to a DPAHC or living will by the operation as opposed to a TGNC individual who chooses not to medically transition and does not receive regular medical care.

Third, there were some limitations in the measurements used. First, the Gender Minority Stress and Resilience Scale (GMSR) used in the present study had only weak correlations with mental health measures in the original validation study, some of the original subscale alpha levels were low, and the first four subscales were scored using three retrospective response options or never. Further investigation of this measure is recommended. Also, the aging preparation behaviors familiarity and planning items were not a validated scale; however, the obtained alphas are good and excellent, respectively.

Fourth, the study used a cross-sectional design. This limits the ability to make any causal statements. Future studies may wish to take a more developmental and longitudinal approach to examine preparation for aging, aging anxiety, and death attitudes. The mean age of the sample ($M = 29.89$) was also younger, which may also account for some of the null findings, as people in this stage of life may not yet be thinking, planning, or concerned with aging and end-of-life preparations.

Fifth, the study did not examine early life or childhood discrimination or negative life events and how this predicts mental health in later life. There is a growing body of literature that

links early adverse life events to later mental health outcomes. Future studies may wish to include an examination of adverse childhood experiences.

Sixth, age differences were considered in these variables or connections given the potentially vast different experiences based on cohort status. The majority of the study sample was in their early twenty's to mid-thirty's. There may be a cohort effect from so many individuals being around the same mean age. Future studies may wish to compare different age cohorts or restrict data collection to a specific age range to control for cohort effects.

Conclusion

The current study examined the relationships—both significant and non-significant—among discrimination, mental health (i.e., depression and anxiety), preparation for aging (i.e., familiarity and planning), social support, death attitudes, and aging anxiety among TGNC adults. Neither discrimination nor mental health predicted preparation for aging familiarity or planning. Discrimination did, however, predict both anxiety and depression, although only the non-affirmation subscale was a unique predictor of both. It was also found that death attitudes predicted both preparation for aging familiarity and planning, while social support and aging anxiety predicted preparation for aging planning, but not familiarity. The current findings may inform mental health interventions for TGNC individuals around non-affirmation may positively influence mental health. Additionally, addressing aging concerns and increasing social support may promote age preparatory planning among TGNC individuals.

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Appendix A

Inclusion Criteria Items

Questions	Response Options
How old are you?	_____ years (current)
Do you now, or have you ever, identified as transgender, gender-nonconforming, or non-binary?	Yes No

Appendix B

Demographics

1. How old are you? _____years (current)

2. Do you currently have health insurance?
      Yes   No

3. If not, do you have access to a health care facility if you needed care?
      Yes   No

4. Do you have health insurance, but find yourself incapable of paying your co-payment for care?
      Yes   No

5. What is your current gender self-perception: in other words, on an average day, how would you describe your gender self-perception to me (select all that apply)?
      Male
      Female
      Transman
      Transwoman
      Genderqueer/Gender-nonconforming
      Other (please list) _____

6. Do you now, or have you ever, identified as transgender, gender-nonconforming, or non-binary?
      Yes   No

7. Which racial/ethnic label *best* describes you?
      Asian/Asian-American/Pacific Islander
      Black/African-American (non-Latino)
      Latino/Hispanic
      American-Indian/Native-American
      White/European-American (non-Latino)
      Multiracial/Multiethnic
      Other_____

8. What is your highest level of completed education?
      Grade school
      High school/GED
      Some college (no degree)
      2-year/technical degree
      4-year college degree
      Master's degree
      Doctorate degree

9. Which sexual orientation *best* describes you?

    Straight/Heterosexual
    Bisexual
    Gay
    Lesbian
    Queer
    Pansexual
    Asexual
    Other (please specify) _____

10. What is your and your family's income (including all categories: salary, disability, pension, social security, child support, etc.)?

    ( ) Less than $10,000 for the year
    ( ) Between $10,000 and $24,999 for the year
    ( ) Between $25,000 and $39,999 for the year
    ( ) Between $40,000 and $54,999 for the year
    ( ) Between $55,000 and $69,999 for the year
    ( ) Between $70,000 and $79,999 for the year
    ( ) Over $80,000 for the year

11. What is your relationship status?

    ( ) Never have been married, currently single
    ( ) Married
    ( ) Committed partner(s) relationship (not legally married)
    ( ) In an open relationship
    ( ) Separated, currently single
    ( ) Divorced, currently single
    ( ) Widowed, currently single

12. Which of the following best describes your current employment status?

    ( ) Part-time employment (less than 35 hrs/week)
    ( ) Full-time employment (at least 35 hrs/week)
    ( ) Employed but on temporary sickness/accident benefit
    ( ) On permanent disability (I am disabled and unable to work)
    ( ) Unemployed but looking for work
    ( ) Unemployed but not looking for work
    ( ) Retired
    ( ) Other [   ]

13. Which of the following BEST describes your religious/faith/spiritual preference at this time?

    {Choose one}
        ( ) Atheist
        ( ) Agnostic
        ( ) Jewish
        ( ) Roman Catholic

( ) Protestant
( ) Pentecostal/Charismatic
( ) Buddhist
( ) Taoist
( ) Confucionist
( ) Muslim/Islam
( ) Hindu
( ) Christian Scientist
( ) Quaker
( ) Alternative Healing Circles
( ) Goddess Worship
( ) Sun Worship
( ) Other [   ]

14. How often do you attend religious, spiritual, and/or faith services of any kind?
{Choose one}
( ) Once a day
( ) Once a week
( ) Once a month
( ) Once a year
( ) Never

15. Has your religious/faith/spiritual preference changed? [select all that apply]
Yes, for reasons related to my gender self-perception
Yes, for reasons other than my gender self-perception
No

16. Where do you currently live?
United States: State _____
North America (Not U.S.): Canada/Mexico
South America: Country _____
Europe: Country _____
Asia: Country _____
Australia: Country _____
Africa: Country _____

17. Do you live in an area that is:
Urban
Suburban
Rural

Appendix C

Discrimination

Gender-related discrimination, rejection, and victimization items (first 17 items). Please check all that apply (for example, you may check both *after age 18* and *in the past year* columns if both are true). *In this survey gender expression means how masculine/feminine/androgynous one appears to the world based on many factors such as mannerisms, dress, personality, etc. **All other items**. Please indicated how much you agree with the following statements.

Gender-related discrimination

Response options: *Never; Yes, before age 18; Yes, after age 18; Yes, in the past year*

1. I have had difficulty getting medical or mental health treatment (transition-related or other) because of my gender identity or expression.
2. Because of my gender identity or expression, I have had difficulty finding a bathroom to use when I am out in public.
3. I have experienced difficulty getting identity documents that match my gender identity.
4. I have had difficulty finding housing or staying in housing because of my gender identity or expression.
5. I have had difficulty finding employment or keeping employment, or have been denied promotion because of my gender identity or expression.

Gender-related rejection

Response options: *Never; Yes, before age 18; Yes, after age 18; Yes, in the past year*

1. I have had difficulty finding a partner or have had a relationship end because of my gender identity or expression.
2. I have been rejected or made to feel unwelcome by a religious community because of my gender identity or expression.
3. I have been rejected by or made to feel in my ethnic/racial community because of my gender identity or expression.
4. I have been rejected or distanced from friends because of my gender identity or expression.
5. I have been rejected at school or work because of my gender identity or expression.
6. I have been rejected or distanced from family because of my gender identity or expression.

Gender-related victimization

Response options: *Never; Yes, before age 18; Yes, after age 18; Yes, in the past year*

1. I have been verbally harassed or teased because of my gender identity or expression. (For example, being called "it").
2. I have been threatened with being outed or blackmailed because of my gender identity or expression.
3. I have had my personal property damaged because of my gender identity or expression.
4. I have been threatened with physical harm because of my gender identity or expression.
5. I have been pushed, shoved, hit, or had something thrown at me because of my gender identity or expression.
6. I have had sexual contact with someone against my will because of my gender identity or expression.

Non-affirmation of gender identity

Response options: 5-point scale from *strongly disagree* to *strongly agree*

1. I have to repeatedly explain my gender identity to people or correct the pronouns people use.
2. I have difficulty being perceived as my gender.
3. I have to work hard for people to see my gender accurately.
4. I have to be "hypermasculine" or "hyperfeminine" in order for people to accept my gender.
5. People don't respect my gender identity because of my appearance or body.
6. People don't understand me because they don't see my gender as I do.

<center>Internalized transphobia</center>

Response options: 5-point scale from *strongly disagree* to *strongly agree*

1. I resent my gender identity or expression.
2. My gender identity or expression makes me feel like a freak.
3. When I think of my gender identity or expression, I feel depressed.
4. When I think about my gender identity or expression, I feel unhappy.
5. Because of my gender identity or expression., I feel like an outcast.
6. I often ask myself: Why can't my gender identity or expression just be normal?
7. I feel that my gender identity or expression is embarrassing.
8. I envy people who do not have a gender identity or expression like mine.

<center>Pride</center>

Response options: 5-point scale from *strongly disagree* to *strongly agree*

1. My gender identity or expression makes me feel special and unique.
2. It is okay for me to have people know that my gender identity is different from my sex assigned at birth.
3. I have no problem talking about my gender identity and gender history to almost anyone.
4. It is a gift that my gender identity is different from my sex assigned at birth.
5. I am like other people but I am also special because my gender identity is different from my sex assigned at birth.
6. I am proud to be a person whose gender identity is different from my sex assigned at birth.
7. I am comfortable revealing to others that my gender identity is different from my sex assigned at birth.
8. I'd rather have people know everything and accept me with my gender identity and gender history.

For the next two sections: Question to determine most appropriate wording:

Do you currently live in your affirmed gender all or almost all of the time? (*Your affirmed gender is the one you see as accurate for yourself.)

Response options: *Yes, I live in my affirmed gender most or all of the time; No, I don't live in my affirmed gender most or all of the time*.

If *yes*: use "history" in items below. If *no*: use "identity" in items below.

<center>Negative expectations for the future</center>

Response options: 5-point scale from *strongly disagree* to *strongly agree*

1. If I express my gender IDENTITY/HISTORY, others wouldn't accept me.
2. If I express my gender IDENTITY/HISTORY, employers would not hire me.
3. If I express my gender IDENTITY/HISTORY, people would think I am mentally ill or "crazy."

4. If I express my gender IDENTITY/HISTORY, people would think I am disgusting or sinful.
5. If I express my gender IDENTITY/HISTORY, most people would think less of me.
6. If I express my gender IDENTITY/HISTORY, most people would look down on me.
7. If I express my gender IDENTITY/HISTORY, I could be a victim of crime or violence.
8. If I express my gender IDENTITY/HISTORY, I could be arrested or harassed by police.
9. If I express my gender IDENTITY/HISTORY, I could be denied good medical care.

Nondisclosure

Response options: 5-point scale from *strongly disagree* to *strongly agree*
1. Because I don't want others to know my gender IDENTITY/HISTORY, I don't talk about certain experiences from my past or change parts of what I will tell people.
2. Because I don't want others to know my gender IDENTITY/HISTORY, I modify my way of speaking.
3. Because I don't want others to know my gender IDENTITY/HISTORY, I pay special attention to the way I dress or groom myself.
4. Because I don't want others to know my gender IDENTITY/HISTORY, I avoid exposing my body, such as wearing a bathing suit or nudity in locker rooms.
5. Because I don't want others to know my gender IDENTITY/HISTORY, I change the way I walk, gesture, sit, or stand.

Community connectedness

Response options: 5-point scale from *strongly disagree* to *strongly agree*
1. I feel part of a community of people who share my gender identity.
2. I feel connected to other people who share my gender identity.
3. When interacting with members of the community that shares my gender identity, I feel like I belong.
4. I'm not like other people who share my gender identity. (R)
5. I feel isolated and separate from other people who share my gender identity. (R)

Appendix D

Depression

Over the *last 2 weeks*, how often have you been bothered by any of the following problems?
1. Little interest or pleasure in doing things.
   0 (Not at All); 1 (Several days); 2 (More than half the days); 3 (Nearly every day)
2. Feeling down, depressed, or hopeless.
   0 (Not at All); 1 (Several days); 2 (More than half the days); 3 (Nearly every day)
3. Trouble falling or staying asleep, or sleeping too much.
   0 (Not at All); 1 (Several days); 2 (More than half the days); 3 (Nearly every day)
4. Feeling tired or having little energy.
   0 (Not at All); 1 (Several days); 2 (More than half the days); 3 (Nearly every day)
5. Poor appetite or overeating.
   0 (Not at All); 1 (Several days); 2 (More than half the days); 3 (Nearly every day)
6. Feeling bad about yourself — or that you are a failure or have let yourself or your family down.
   0 (Not at All); 1 (Several days); 2 (More than half the days); 3 (Nearly every day)
7. Trouble concentrating on things, such as reading the newspaper or watching television.
   0 (Not at All); 1 (Several days); 2 (More than half the days); 3 (Nearly every day)
8. Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual.
   0 (Not at All); 1 (Several days); 2 (More than half the days); 3 (Nearly every day)
9. Thoughts that you would be better off dead or hurting yourself in some way.
   0 (Not at All); 1 (Several days); 2 (More than half the days); 3 (Nearly every day)

If you checked off *any* problems, how *difficult* have these problems made it for you to do your work, take care of things at home, or get along with other people?
Not difficult at all   Somewhat difficult   Very difficult   Extremely difficult

Appendix E

Anxiety

Over the *last 2 weeks*, how often have you been bothered by any of the following problems?
1. Feeling nervous, anxious, or on edge.
   0 (Not at All); 1 (Several days); 2 (More than half the days); 3 (Nearly every day)
2. Not being able to stop or control worrying.
   0 (Not at All); 1 (Several days); 2 (More than half the days); 3 (Nearly every day)
3. Worrying too much about different things.
   0 (Not at All); 1 (Several days); 2 (More than half the days); 3 (Nearly every day)
4. Trouble relaxing.
   0 (Not at All); 1 (Several days); 2 (More than half the days); 3 (Nearly every day)
5. Being so restless that it is hard to sit still.
   0 (Not at All); 1 (Several days); 2 (More than half the days); 3 (Nearly every day)
6. Becoming easily annoyed or irritable.
   0 (Not at All); 1 (Several days); 2 (More than half the days); 3 (Nearly every day)
7. Feeling afraid as if something awful might happen.
   0 (Not at All); 1 (Several days); 2 (More than half the days); 3 (Nearly every day)

If you checked off *any* problems, how *difficult* have these problems made it for you to do your work, take care of things at home, or get along with other people?
Not difficult at all   Somewhat difficult   Very difficult   Extremely difficult

Appendix F

Death Attitudes Profile-Revised

This questionnaire contains a number of statements related to different attitudes toward death. Read each statement carefully, and then decide the extent to which you agree or disagree. For example, an item might read: "Death is a friend." Indicate how well you agree or disagree by circling one of the following: **SA** = strongly agree; **A**= agree; **MA=** moderately agree; **U**= undecided; **MD**= moderately disagree; **D**=disagree; **SD**= strongly disagree. Note that the scales run both from *strongly agree* to *strongly disagree* and from *strongly disagree* to *strongly agree*.

1. Death is no doubt a grim experience.
2. The prospect of my own death arouses anxiety in me.
3. I avoid death thoughts at all costs.
4. I believe that I will be in heaven after I die.
5. Death will bring an end to all my troubles.
6. Death should be viewed as a natural, undeniable, and unavoidable event.
7. I am disturbed by the finality of death.
8. Death is an entrance to a place of ultimate satisfaction.
9. Death provides an escape from this terrible world.
10. Whenever the thought of death enters my mind, I try to push it away.
11. Death is deliverance from pain and suffering.
12. I always try not to think about death.
13. I believe that heaven will be a much better place than this world.
14. Death is a natural aspect of life.
15. Death is union with God and eternal bliss.
16. Death brings a promise of a new and glorious life.
17. I would neither fear death nor welcome it.
18. I have an intense fear of death.
19. I avoid thinking about death altogether.
20. The subject of life after death troubles me greatly.
21. The fact that death will mean the end of everything as I know it frightens me.
22. I look forward to a reunion with my loved ones after I die.
23. I view death as a relief from early suffering.
24. Death is simply a part of the process of life.
25. I see death as a passage to an eternal and blessed place.
26. I try to have nothing to do with the subject of death.
27. Death offers a wonderful release of the soul.
28. One thing that gives me comfort in facing death is my belief in the afterlife.
29. I see death as a relief from the burden of this life.
30. Death is neither good nor bad.
31. I look forward to life after death.
32. The uncertainty of not knowing what happens after death worries me.

Appendix G

Anxiety about Aging

Strongly Disagree   Disagree   Neither Agree nor Disagree   Agree   Strongly Agree

1. I like being around old people.
2. I fear that when I am old all my friends will be gone.*
3. I like to go visit my older relatives.
4. I have never lied about my age in order to appear younger.
5. I fear it will be very hard for me to find contentment in old age.*
6. The older I become, the more I worry about my health.*
7. I will have plenty to occupy my time when I am old.
8. I get nervous when I think about someone else making decisions for me when I am old.*
9. It doesn't bother me at all to imagine myself as being old.
10. I enjoy talking with old people.
11. I expect to feel good about life when I am old.
12. I have never dreaded the day I would look in the mirror and see gray hairs.
13. I feel very comfortable when I am around an old person.
14. I worry that people will ignore me when I am old.*
15. I have never dreaded looking old.
16. I believe that I will still be able to do most things for myself when I am old.
17. I am afraid that there will be no meaning in life when I am old.*
18. I expect to feel good about myself when I am old.
19. I enjoy doing things for old people.
20. When I look in the mirror, it bothers me to see how my looks have changed with age.

*denotes items reversed for scoring purposes

Appendix H

The Multidimensional Scale of Perceived Social Support (MSPSS)

1. There is a special person who is around when I am in need.
Very Strongly Disagree   Strongly Disagree   Disagree   Neither Agree nor Disagree   Agree   Strongly Agree   Very Strongly Agree

2. There is a special person with whom I can share my joys and sorrows.
Very Strongly Disagree   Strongly Disagree   Disagree   Neither Agree nor Disagree   Agree   Strongly Agree   Very Strongly Agree

3. My family really tries to help me.
Very Strongly Disagree   Strongly Disagree   Disagree   Neither Agree nor Disagree   Agree   Strongly Agree   Very Strongly Agree

4. I get the emotional help and support I need from my family.
Very Strongly Disagree   Strongly Disagree   Disagree   Neither Agree nor Disagree   Agree   Strongly Agree   Very Strongly Agree

5. I have a special person who is a real source of comfort to me.
Very Strongly Disagree   Strongly Disagree   Disagree   Neither Agree nor Disagree   Agree   Strongly Agree   Very Strongly Agree

6. My friends really try to help me.
Very Strongly Disagree   Strongly Disagree   Disagree   Neither Agree nor Disagree   Agree   Strongly Agree   Very Strongly Agree

7. I can count on my friends when things go wrong.
Very Strongly Disagree   Strongly Disagree   Disagree   Neither Agree nor Disagree   Agree   Strongly Agree   Very Strongly Agree

8. I can talk about my problems with my family.
Very Strongly Disagree   Strongly Disagree   Disagree   Neither Agree nor Disagree   Agree   Strongly Agree   Very Strongly Agree

9. I have friends with whom I can share my joys and sorrows.
Very Strongly Disagree   Strongly Disagree   Disagree   Neither Agree nor Disagree   Agree   Strongly Agree   Very Strongly Agree

10. There is a special person in my life who cares about my feelings.
Very Strongly Disagree   Strongly Disagree   Disagree   Neither Agree nor Disagree   Agree   Strongly Agree   Very Strongly Agree

11. My family is willing to help me make decisions.
Very Strongly Disagree   Strongly Disagree   Disagree   Neither Agree nor Disagree   Agree   Strongly Agree   Very Strongly Agree

12. I can talk about my problems with my friends.
Very Strongly Disagree   Strongly Disagree   Disagree   Neither Agree nor Disagree   Agree   Strongly Agree   Very Strongly Agree

Appendix I

Modified Medical Outcomes Study Social Support Survey (MOS)

Please indicate whether you have someone to:
1) help if you were confined to bed
   Strongly Disagree   Disagree   Neither Agree nor Disagree   Agree   Strongly Agree
2) take you to the doctor if needed
   Strongly Disagree   Disagree   Neither Agree nor Disagree   Agree   Strongly Agree
3) share your most private worries and fears
   Strongly Disagree   Disagree   Neither Agree nor Disagree   Agree   Strongly Agree
4) turn to for suggestions about problems
   Strongly Disagree   Disagree   Neither Agree nor Disagree   Agree   Strongly Agree
5) do something enjoyable with
   Strongly Disagree   Disagree   Neither Agree nor Disagree   Agree   Strongly Agree
6) love and make you feel wanted
   Strongly Disagree   Disagree   Neither Agree nor Disagree   Agree   Strongly Agree

On a bad sick day, how many people do you have to come in and help you? _____

Appendix J

Preparedness for Aging:

Familiarity

Please check each of the following aging preparations you are familiar with:
1. A will
2. A living will
3. Legal arrangements for someone to make decisions about your medical care if you become unable to make those decisions for yourself. [This is sometimes called a durable power of attorney for health care or health proxy]
4. Life insurance
5. Long-term care insurance
6. Regular medical checkups (i.e., at least an annual physical exam)
7. Registered organ donor
8. Pensions or other retirement plan in place (other than social security)
9. Pre-arranged funeral plans
10. A trust
11. Informal Caregiving Arrangements
12. Partner Agreements
13. Executing a Rights of Visitation Document
14. Other_____

Planning

To what degree do you plan on having or participating in the following aging preparations?

No, will not			Plan on having			Currently have
1	2	3	4	5	6	7

1. A will
2. A living will
3. Legal arrangements for someone to make decisions about your medical care if you become unable to make those decisions for yourself. [This is sometimes called a durable power of attorney for health care or health proxy]
4. Life insurance
5. Long-term care insurance
6. Having regular medical checkups (i.e., at least an annual physical exam)
7. Being a registered organ donor
8. Other than social security benefits, having a pension or other retirement plan in place
9. Pre-arranged funeral plans
10. A trust
11. Partner Agreements
12. Executing a Rights of Visitation Document
13. Other_____

14. Discussing your health care plans and preferences with:
    a. Partner/Spouse
    b. Parents
    c. Children
    d. Siblings
    e. Other biological relatives
    f. Friends/Neighbors
    g. Spiritual/Religious/Faith group
    h. Other_____
15. Informal Caregiving Arrangements with:
    a. Partner/Spouse
    b. Parents
    c. Children
    d. Siblings
    e. Other biological relatives
    f. Friends/Neighbors
    g. Spiritual/Religious/Faith group
    h. Other_____

Appendix K

Validation Items

Gender Check:
1. Do you now, or have you ever, identified as transgender, gender-nonconforming, or gender non-binary?

Attention Check Example Item:
2. Please select strongly disagree.

Qualitative Items:
3. Please describe any other challenges that you feel current older (65 years and over) members of the trans/gender-nonconforming community are facing.
4. If you felt that you would have to go back into the closet, please tell us about the reasons why you thought that you would have to do this.
5. In your own words, what do you think the purpose of this survey was.

Response Pattern Items:
1. What is your current gender self-perception? In other words, on an average day, how would you best describe your gender self-perception (select all that apply)?
2. What was your sex assigned at birth (i.e., on your birth certificate)?
3. What label best describes your current sex?
4. What is your current status in regards to hormone replacement therapy (HRT)?
   a. I am currently on hormones
   b. I am not on hormones, but I want to be in the future
   c. I am not on hormones, and do not currently have any plans to in the future
   d. I am not currently on hormones, but have been in the past and plan on starting again
   e. I am not currently on hormones, but have been in the past and do not have any plans on starting again in the future for personal reasons (e.g., achieved the desired changes)
   f. I am not currently on hormones, but have been in the past and do not have any plans on starting again in the future for medical reasons (e.g., reached the age of typical menopause or andropause, or liver damage)
   g. Other
5. If you are currently on HRT, please select [all that apply] your current regimen:
   a. Testosterone injections
   b. Testosterone gel/cream/patches/other topical applications
   c. Testosterone other (please specify)
   d. Testosterone blockers pill/capsule
   e. Estrogen blockers pill/capsule
   f. Estrogen pill/capsule
   g. Estrogen injection
   h. Estrogen gel/cream/patch/other topical applications
   i. Progestins included with estrogen
   j. Progestins separate from estrogen pill/capsule

         k.   Progestins separate from estrogen injection
6.   If you have taken hormones in the past or you are currently taking hormones, how did/do you obtain them? Check all that apply to you.
         a.   Does not apply to me
         b.   Prescription only, obtained in the USA
         c.   Prescription only, obtained outside of the USA
         d.   Prescription only, obtained both inside and outside of the USA
         e.   Purchased online without a prescription
         f.   Purchased online with a mail-in prescription
         g.   Shared someone else's hormones
         h.   Purchased from the black market
7.   What was/is your reason for taking hormones? Check all that apply to you.
         a.   For gender modification
         b.   For sex reassignment
         c.   To control menstruation
         d.   For birth control
         e.   For infertility
         f.   For another medical reason
         g.   Other

IP Address
Location

Vita

Richard Scott Henry was born on June 28, 1992, in Vancouver, Washington. He graduated from Columbia River High School, Vancouver, Washington in 2010. He received a Bachelor of Science in Experiment Neuropsychology and Women's and Gender Studies from Saint Mary's College of CA, Moraga, California in 2014 and a Master of Arts in Women's and Gender Studies from the University of South Florida in 2016.