Published in final edited form as:

J Appl Gerontol. 2018 December ; 37(12): 1517–1539. doi:10.1177/0733464816675819.

Social Context of Depressive Distress in Aging Transgender Adults

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Abstract

This study investigates the relationship between discrimination and mental health in aging transgender adults. Survey responses from 61 transgender adults above 50 ($M_{\text{age}} = 57.7$, $SD = 5.8$; 77.1% male-to-female; 78.7% White non-Hispanic) were analyzed. Multivariable logistic regression models examined the relationship between gender- and age-related discrimination, number of everyday discrimination experiences, and past-week depressive distress, adjusting for social support, sociodemographics, and other forms of discrimination. The most commonly attributed reasons for experiencing discrimination were related to gender (80.3%) and age (34.4%). More than half of participants (55.5%) met criteria for past-week depressive distress. In an adjusted multivariable model, gender-related discrimination and a greater number of everyday discrimination experiences were associated with increased odds of past-week depressive distress. Additional research is needed to understand the effects of aging and gender identity on depressive symptoms and develop interventions to safeguard the mental health of this vulnerable aging population.

Keywords

transgender; aging; discrimination; depression; social support

Introduction

Transgender people have a gender identity or expression that differs from that traditionally attributed to their assigned birth sex. The size of the transgender aging population has been difficult to measure due to widespread invisibility of transgender people in epidemiological surveys (Witten, 2009). However, estimates suggest that approximately 0.6% of US residents

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Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

above the age of 65 years identify as transgender, with an even larger proportion of adults between the ages of 50 and 64 years identifying as transgender (Flores, Herman, Gates, & Brown, 2016). Like many other Americans aged 50 and older, transgender individuals must contend with age-related stressors (e.g., the onset of chronic health conditions, economic constraints, and reduced or altered social connectivity) that have been linked to adverse mental health outcomes (Adams, Sanders, & Auth, 2004; Finkenauer, Sherratt, Marlow, & Brodey, 2012; Mirowsky & Ross, 2001; Williamson & Schulz, 1992). Depression is a particularly relevant mental health outcome for aging populations as this often debilitating condition can interfere with aging adults' ability to manage their physical health needs and lead to reduced quality of life (Blazer, 2003). In addition to age-related stressors, transgender individuals experience gender-related stressors (e.g., living in a society that devalues diverse gender identities and expressions) that may exacerbate many of the problems faced by aging adults and further contribute to poor mental health.

Transgender people experience high levels of prejudice, discrimination, violence, and other forms of stigma on the basis of their non-conforming gender identity and/or expression (see White Hughto, Reisner, & Pachankis, 2015, for a review). Discrimination has been linked to adverse mental health in transgender populations, including psychological distress, anxiety, depression, and substance use to cope (White Hughto et al., 2015). Despite evidence of discrimination among transgender adults, and research documenting the mental health concerns of aging adults, a dearth of research has explored the relationship between discrimination and mental health among aging transgender adults as a vulnerable and distinct group (i.e., as separate from lesbian, gay, and bisexual individuals and/or transgender adults below age 50; Reisner et al., 2016). Moreover, studies of transgender discrimination and health often only assess discrimination due to gender identity or expression (e.g., Bockting, Miner, Romine, Hamilton, & Coleman, 2013; Bradford, Reisner, Honnold, & Xavier, 2013) and do not explore the multiple reasons as to which transgender adults may attribute experiences of everyday forms of discrimination. Research among cisgender (i.e., non-transgender) people has found that the relationship between discrimination and health can differ according to the reason attributed to discriminatory experiences. For example, among a US national sample of Asian Americans, racial discrimination was a stronger predictor of being overweight and obese than weight-related discrimination (Gee, Ro, Gavin, & Takeuchi, 2008). Aging transgender adults may experience discrimination due to their gender identity/expression and/or a number of other reasons, such as age (Siverskog, 2014). Documenting the most common reasons for experiencing discrimination and the relationship between these discrimination attributes and mental health is warranted to more fully understand the challenges influencing the health of this highly stigmatized and underserved group.

As people age, they are at increased risk of experiencing age-related discrimination (Angus & Reeve, 2006; Pasupathi & Lockenhoff, 2002). Like transgender-related discrimination, ageism is socially produced and based on societal beliefs that aging individuals are unproductive, dependent, and difficult to manage among other stereotypes (Angus & Reeve, 2006; Kite, Stockdale, Whitley, & Johnson, 2005). Age-related discrimination is common among the US general population, particularly among those in the highest age brackets (see Kite et al., 2005, for a review), and has been linked to elevated cardiovascular responses to

stress (Levy, Hausdorff, Hencke, & Wei, 2000; Pascoe & Smart Richman, 2009), increased risk of mortality (Barnes et al., 2008), heightened psychological distress (Yuan, 2007), reduced self-care behaviors (L. D. Grant, 1996), reduced physical activity (Sánchez, Torres, & Mena, 2009), decreased desire to live (Levy, Ashman, & Dror, 2000), and a variety of other psychosocial factors and mental health conditions (Sánchez et al., 2009; Scott, Jackson, & Bergeman, 2011). While research suggests that individuals with multiple disadvantaged statuses may be particularly vulnerable to discrimination and poor health (Grollman, 2014), limited research has explored middle-aged and older transgender peoples' experiences of age-related discrimination or attempted to disentangle the salience of different forms of discrimination (i.e., gender-based vs. age-related discrimination) experienced by aging transgender adults. Research that explores the reasons attributed to discrimination and the relationship between discrimination experiences and mental health indicators (e.g., depressive distress) among aging transgender adults is warranted. Identifying reasons for discrimination will allow for a greater understanding of the unique social-stress-related exposures influencing the mental health of older transgender adults. Such information will also guide the development of interventions and ensure clinical services and programming are optimally responsive to the specific stressors facing older transgender adults.

Transgender individuals experience other stressors related to their transgender identity, such as rejection from their family and loved ones. Indeed, studies show that rejection by one's family of origin is common for transgender people and may be enacted through lack of support around gender expression or through more overt means such as verbal and physical assault (Factor & Rothblum, 2008; Grossman & D'augelli, 2006; Stotzer, 2009; Wren, 2002). While much of the literature in this area focuses on transgender youth (Garofalo, Deleon, Osmer, Doll, & Harper, 2006; Grossman & D'augelli, 2006; Simons, Schrager, Clark, Belzer, & Olson, 2013), research suggests that experiences of rejection related to transgender identity occur throughout the life course (Factor & Rothblum, 2008; Koken, Bimbi, & Parsons, 2009; Nemoto, Bodeker, & Iwamoto, 2011), with familial rejection also reported among aging transgender adults (Factor & Rothblum, 2008). Lack of social support has been linked to adverse health indicators in older transgender adults, including loneliness and psychological distress (Cook-Daniels & Munson, 2010; Fredriksen-Goldsen et al., 2014). Conversely, high levels of social support have been linked to positive physical and mental health in diverse transgender populations (see Finkenauer et al., 2012, for a review). Given the unique role of social support in the lives of transgender people, research is needed to further understand current levels of social support alongside experiences of discrimination to socially contextualize the mental health of aging transgender adults.

As public health practitioners, policymakers, and caretakers look to understand how best to meet the needs of the aging population in the United States, it is important to understand the stressors and supports that may uniquely contribute to better or worse mental health outcomes for marginalized and highly vulnerable populations, such as aging transgender adults. The present study aimed to address this research agenda by (a) describing the sociodemographic, discrimination experiences, social support systems, and mental health of middle-aged and older transgender individuals in Massachusetts, and (b) evaluating whether the number of discrimination experiences overall, and gender- and age-related

discrimination attributions specifically, are associated with past-week depressive distress in middle-aged and older transgender adults, after adjustment for known protective factors (e.g., social support) and potential confounders (e.g., age, gender identity, race, chronic conditions).

Method

Participants and Sampling

Data were gathered from a community-based sample of 452 transgender and gender non-conforming Massachusetts residents, ages 18 to 75 years. From August to December 2013, participants were purposively recruited online (i.e., community list-serves, social media, organizational websites, and email referral) and in person (i.e., at community events, local health centers, and other social service locations), and invited to complete a one-time, self-reported survey assessing demographics, experiences of discrimination, and health indicators. Participants provided informed consent before beginning the survey. Eligible respondents were age 18 years or older, self-identified as transgender or gender non-conforming, and had lived in Massachusetts for at least 3 months in the past year. Following survey completion, eligible participants were entered into a raffle for one of two electronic tablets. Study activities were Institutional Review Board (IRB) reviewed. Further details on survey methodology can be found elsewhere (Reisner, White Hughto et al., 2015).

The majority of participants completed the survey online (85.5%). Similar to other studies of transgender individuals conducted online and in person (Bockting et al., 2013; Bradford et al., 2013; J. M. Grant et al., 2011), more than three quarters of participants had completed some college courses or more (78.6%) and were White non-Hispanic (79%). The majority (83%) were between ages 25 and 64 years, compared with 67% of the nearly 30,000 transgender people estimated to reside in Massachusetts in 2016 (Flores et al., 2016). To explore the relationship between discrimination and mental health, the present analysis restricted the sample to respondents age 50 or older ($n = 61$).

Measures

Sociodemographics—*Age* was queried in years and collapsed into 5-year increments. *Race/ethnicity* were assessed separately and combined into the following groups: White non-Hispanic, Black non-Hispanic, Hispanic/Latino, Multiracial, Other race non-Hispanic. *Gender identity* was assessed using a two-step method (GenIUSS, 2014; Reisner et al., 2014) with two items: (a) assigned sex at birth (female, male) and (b) current gender identity (man, woman, female-to-male [FtM]/trans man, male-to-female [MtF]/trans woman, genderqueer, gender variant, gender non-conforming, other). The two items were cross-tabulated to categorize participants as MTF spectrum ($n = 47$) or FTM spectrum ($n = 14$). *Survey mode* is a dichotomous variable indicating whether participants completed the survey online (1) or in person (0). Survey mode served as a proxy for socioeconomic status as participants completing the survey online tended to have higher educational attainment and income compared to those taking the survey in person.

Chronic conditions—*Number of chronic conditions*. Participants were asked whether a doctor, nurse, or other health professional had ever diagnosed them with the following chronic health conditions: arthritis, heart disease, heart attack, stroke, diabetes, skin cancer, other forms of cancer, asthma, and depression (Centers for Disease Control and Prevention [CDC], 2012). A continuous variable was created by summing the number of chronic conditions reported by participants (theoretical range = 0–9).

Social support—*Family very supportive of gender identity/expression* was assessed by asking participants, “In general, how supportive of your gender identity or expression is your family?” Response options included the following: “not at all supportive,” “not very supportive,” “somewhat supportive,” and “very supportive.” This cut point was chosen based on the hypothesis that having the full support of one’s family would be more protective against depressive distress than partial or non-existent support. Responses were dichotomized as very supportive (yes/no). *Number of close friends* was assessed by asking participants to report their number of close friends (“People you can confide in”).

Discrimination—*Everyday discrimination* (type) was assessed using the 11-item Everyday Discrimination Scale (Krieger, Smith, Naishadham, Hartman, & Barbeau, 2005; T. R. Taylor, Kamarck, & Shiffman, 2004; Williams, Yan, Jackson, & Anderson, 1997), which assessed the frequency of participants’ experiences of various forms of everyday discrimination in the past 12 months (responses ranged from 0 = *never* to 4 = *very often*). Sample items included the following: “You have been treated with less courtesy than other people,” “You have been called names or insulted,” “You have been threatened or harassed,” and “People have acted as if they are judging you negatively.” Cronbach’s alpha coefficient for the current sample was $\alpha = .94$, suggesting high internal consistency. The number of items endorsed was summed (theoretical range = 0–11), with higher scores indicating that participants experienced more acts of everyday discrimination.

Reasons attributed for everyday discrimination experiences were assessed using 14 items from prior research (Gordon & Meyer, 2008; Williams et al., 1997) and other theoretically informed attributions: age, sex, race, ethnicity, nationality, religion, sexual orientation, disability, education or income level, weight, gender expression, masculine or feminine appearance, other aspects of appearance, and other. Participants were able to check all attributes that apply. Two dichotomous variables (yes/no) were created for participants who attributed discrimination experiences to some aspect of their *gender* (i.e., gender expression, masculine or feminine appearance, sex) as well as their *age*. To account for discrimination attributes other than gender or age, a continuous variable of the *number of other reasons for discrimination* was created by summing the remaining 10 attribution items (theoretical range = 0–10), with higher scores indicating a higher number of reasons attributed to discriminatory experiences other than age and gender.

Depressive distress—Participants completed the 10-item Center of Epidemiologic Studies Depression Scale (CES-D-10; Andresen, Malmgren, Carter, & Patrick, 1993; Radloff, 1977) to assess past-week depressive distress. Response options ranged from 0 “Rarely or none of the time” to 3 “All of the time” (Bradley, Bagnell, & Brannen, 2010; Zhang et al., 2012). In the current dataset, Cronbach’s alpha was $\alpha = .90$, which is consistent

with previous validation studies where alpha's ranged from .84 (transgender women; Reisner et al., 2009) to .85 (adolescents; Bradley et al., 2010), to .88 (HIV-infected adults; Zhang et al., 2012). Scores were first summed (theoretical range = 0–30), and then dichotomized with a cutoff score of 10 or higher indicating clinically significant depressive distress (yes/no; Zhang et al., 2012). The CES-D-10 has been shown to correlate highly with the 20-item CES-D (.84–.91; $p < .01$; Carpenter et al., 1998), which detects clinical diagnoses of major depressive disorder with high sensitivity.

Data Analysis

Due to differential missingness, data were multiply imputed with the fully conditional specification method (“chained equations”) in SAS® 9.4 (Allison, 2003; Lee & Carlin, 2010; Van Buuren, 2007; Van Buuren, Brand, Groothuis-Oudshoorn, & Rubin, 2006). Univariate statistics summarized the distribution of variables (mean, standard deviation [*SD*], frequencies, proportion). Next, bivariate analyses examined associations between all variables and the outcome of interest: past-week depressive distress (yes/no). For bivariate analyses of continuous variables (e.g., age in years and number of chronic conditions), linear regression models were used to estimate betas (β) and standard errors (*SE*). Multivariable logistic regression models were fit to examine whether everyday discrimination experiences, and gender- and age-related discrimination attributes were associated with depressive distress in the past week adjusting for social support (i.e., family support, mean number of close friends), sociodemographics (i.e., age, gender identity, race, survey mode), and number of chronic conditions (Model 1). In Model 2, the number of other reasons attributed to discrimination experiences was included in the multivariable model as a control variable. Odds ratios (OR), adjusted odds ratios (aOR), and 95% confidence intervals (95% CIs) are presented.

Results

Table 1 shows the distribution of sociodemographic, social support, discrimination-related characteristics, and mental health. The mean sample age of the sample was 57.7 years ($SD = 5.8$); range = 50–75 years. The majority of participants (78.7%) were White non-Hispanic, 77.1% were on the MTF spectrum, and 85.2% completed the survey online.

Overall, 40.1% had at least one chronic disease (range = 0–5), with a mean of 0.6 conditions ($SD = 1.0$). In bivariate analyses, age was significantly and positively related to number of chronic conditions, such that as age increased, the number of chronic conditions also increased ($\beta = .05$; $SE = 0.01$; $p < .0001$). Participants had an average of 4.2 close friends ($SD = 3.3$), and 23.0% of the sample reported that their family is very supportive of their transgender identity or expression.

The mean number of discrimination experiences was 5.5 ($SD = 3.9$). The most frequently attributed reasons for discrimination were related to gender (80.3%) and age (34.4%). On average, participants endorsed 1.7 ($SD = 1.6$) other reasons for experiencing discrimination (range = 0–7). Depressive distress scores ranged from 0 to 26 ($M = 12.67$; $SD = 7.32$), with more than half of participants (55.7%) meeting the clinical cutoff score for depression.

Table 2 presents crude ORs and adjusted ORs from logistic regression models examining the association between number of everyday discrimination experiences, discrimination attributes, and past-week depressive distress. In the bivariate unadjusted analyses, the number of everyday discrimination acts experienced, experiencing gender-related discrimination, experiencing age-related discrimination, age, number of chronic conditions, and the number of other reasons attributed to discrimination were associated with the increased odds of past-week depressive distress (all $p < .05$). Both social support indicators (i.e., number of close friends and having a family who is very supportive of one's gender identity/expression) and being a racial/ethnic minority (referent = White non-Hispanic) were protective against past-week depressive distress in bivariate analyses (all $p < .05$). In Model 1, where age, gender identity, race, survey mode, and number of chronic conditions were controlled for, the number of everyday discrimination experiences (aOR = 1.11; 95% CI = [1.03, 1.20]; $p = .01$), gender-related discrimination (aOR = 5.68; 95% CI = [1.91, 16.86]; $p = .002$), and age-related discrimination (aOR = 2.04; 95% CI = [1.06, 3.94]; $p = .03$) were each significantly and positively associated with past-week depressive distress. Number of close friends was protective against depressive distress in the first model ($p < .0001$). In Model 2, when the number of other reasons for experiencing discrimination was added, the number of everyday discrimination experiences (aOR = 1.12; 95% CI = [1.03, 1.21]; $p = .01$), gender-related discrimination (aOR = 4.01; 95% CI = [1.35, 11.95]; $p = .01$), and number of close friends remained significant (aOR = 0.69; 95% CI = [0.60, 0.79]; $p < .0001$). The number of other reasons for experiencing discrimination was the only significant covariate in Model 2 (aOR = 1.87; 95% CI = [1.43, 2.46]; $p < .0001$).

Discussion

In this community sample of middle-aged and older transgender adults, associations were found between the number of discrimination experiences, perceived discrimination specifically attributed to one's gender identity/expression, and past-week depressive distress, even after adjusting for social support, number of other discrimination attributions, and sociodemographic and health-related covariates. Specifically, in the final model, each additional discrimination experience endorsed conferred an 11% increase in the odds of past-week depressive distress for aging transgender individuals. Moreover, attributing discrimination to gender identity/expression was associated with a four-fold increase in the odds of past-week depressive distress. Research exploring the health of aging transgender adults has been limited (Graham et al., 2011), despite evidence that gender-related social stressors may affect the health of aging transgender adults already at risk for stressors such as chronic illness due to age. With increasing evidence of the high prevalence of stigma and discrimination among transgender people (Bockting et al., 2013; J. M. Grant et al., 2011; Kattari & Hasche, 2016; Mizock & Lewis, 2008; Shipherd, Maguen, Skidmore, & Abramovitz, 2011; Stotzer, 2009; White Hughto et al., 2015), continued research is needed to examine the effects of discrimination on the mental health of aging transgender adults, including understanding processes that buffer against the potential negative mental health sequelae of social stigma and promote resilience across development (Witten, 2014).

Middle-aged and older transgender adults in this sample reported an average of five experiences of everyday discrimination (range = 0–11), much higher than other groups of

non-transgender adults (e.g., Gee, Spencer, Chen, & Takeuchi, 2007 found a mean of 1.81 [$SD = 0.03$] among Asian Americans using a nine-item scale; Lewis et al. 2006 found a mean of 1.84 [$SD = 0.42$] among African American women using a 10-item scale). When examining the reasons attributed to discrimination, gender and age were the most frequently reported attributes. The higher prevalence of the gender-related (80.3%) attribution compared with the age (34.4%) attribution suggests that more participants believe that they experienced discrimination due to some aspect of being transgender than their age. While age can serve as a social stressor for all aging adults, discrimination on the basis of gender identity/expression may be more prevalent, and thus salient for aging transgender adults. The lower endorsement of age-related discrimination may also be due to the fact that the majority of participants were between the ages of 55 and 64, and research shows that age-based discrimination may be more common for adults in the highest age categories (i.e., 75 years of age and older) as their age is more visible to others (Goffman, 1963; Kite et al., 2005). Future studies, using a larger sample of aging transgender adults and including those in the highest age groups, should explore the relationship between gender- and age-related discrimination and depressive distress.

Consistent with prior studies of aging populations (Fletcher, Hansson, & Bailey, 1992; Orel, Stelle, Watson, & Bunner, 2010; Roberts & Zhou, 1997), our sample included transgender adults between the ages of 50 and 75 years. While the majority of the transgender adults in our sample were between the ages of 55 and 64 years, research shows that, on a population level, fewer older adults identify as transgender than younger adults (Flores et al., 2016) this may be due to the societal stigma that prevents some members of this population from coming out in their later years (Fabbre, 2016). As the current population of transgender adults age, the number of individuals identifying as transgender in the highest age groups will increase. Furthermore, chronic conditions (e.g., heart disease, stroke, skin cancer) become increasingly more prevalent after age 50 (AARP, 2013; Hennessy, 2004), and these conditions, like age-related discrimination, were present among our aging sample and associated with poor mental health. Given that we can expect individuals to continue to experience poor health as they age, the present study highlights the importance of describing the health of transgender adults in the middle-to-upper age range so that effective medical and psychosocial interventions can be developed to prevent or slow the onset of poor mental health for this at-risk and vulnerable population.

Both gender- and age-related discrimination attributes were significantly associated with increased odds of depressive distress in the bivariate and multivariable Model 1. The number of other reasons attributed to discrimination (i.e., attributes other than age or gender) was also associated with depressive distress in both bivariate analyses and in the final model, with the odds of experiencing depressive distress increasing with the number of other attributes endorsed. Notably, when other reasons for discrimination were controlled for in Model 2, the relationship between age-related discrimination and depressive distress was no longer statistically significant. These findings are consistent with research showing that holding multiple stigmatized identities increases the probability of experiencing discrimination toward any one of those identities (Grollman, 2014; Stuber, Galea, Ahern, Blaney, & Fuller, 2003). Moreover, individuals who experience multiple forms of discrimination may be at high risk of poor mental and physical health as a result of exposure

to multiple and interacting social oppressions (Cole, 2009; Grollman, 2014; Mizock & Mueser, 2014); this is also consistent with our finding documenting a statistically significant relationship between increasing number of everyday discrimination experiences and past-week depressive distress. Nonetheless, it should be noted that while age was no longer significant when the number of other reasons attributed to discrimination was controlled for, attributing discrimination experiences to gender identity/expression was the strongest statistical predictor of past-week depressive distress in the final model. Findings highlight the need for structural (e.g., creation/enforcement of protective non-discrimination laws/policies/practices) and interpersonal (e.g., cultural competency trainings to promote gender-affirmative interactions in healthcare and social services settings) interventions to address gender-related and co-occurring forms of stigma to safeguard the mental health of aging transgender adults.

Social support has been shown to be associated with positive mental health outcomes in transgender individuals (e.g., Finkenauer et al., 2012), and to moderate the association between stigma and adverse mental health (Bockting et al., 2013). Many of the aging transgender adults sampled reported sources of social support, as participants had an average of four close friends and nearly a quarter reported having a family who were very supportive of their transgender experience. In bivariate analyses, both forms of social support (i.e., number of close friends and having a very supportive family) were protective against depressive distress; however, in both multivariable models, only number of close friends remained significant. Findings suggest that for aging transgender adults, having a close network of friends may be a more relevant indicator of resilience against depressive distress than having a very supportive family. Many transgender individuals have “chosen families” often comprised of friends from similar backgrounds (e.g., gender and/or sexual minorities), and these families may be able to offer the support that families of origin cannot, particularly when it comes to coping with discrimination related to gender expression/identity (Croghan, Moone, & Olson, 2014; Shankle, Maxwell, Katzman, & Landers, 2003). Given that social support is multidimensional (e.g., *source*: peer, family, religious; *size*: number of friends or family members; *function*: instrumental, emotional, informational; S. E. Taylor, 2011; Zimet, Dahlem, Zimet, & Farley, 1988), future research assessing social support among transgender individuals should explore multiple forms and dimensions of social support to identify which forms are most influential in protecting against poor mental health in this aging population.

This study gathered information from middle-aged and older transgender adults from all major regions of Massachusetts, and utilized bimodal sampling methods to ensure a diverse sample; however, the true representativeness and generalizability of this convenience sample cannot be determined. Recent estimates suggest that approximately 67% of the estimated 29,750 transgender people in Massachusetts fall between the ages of 25 and 64 years (Flores et al., 2016). In the full sample from which these data were drawn, 83% of participants were between the ages of 25 and 64 years. While the younger age distribution of the transgender adults sampled is consistent with many online studies, including those with transgender populations (Bockting et al., 2013; Bradford et al., 2013; Kuper, Nussbaum, & Mustanski, 2012), the primarily online recruitment efforts used here may have led to selection bias (i.e., differential distribution of age due to sampling). In addition, this was a cross-sectional study;

therefore, results are associational only. An additional limitation pertains to this study's assessment of perceived discrimination experiences and depressive distress via self-reported measures; clinical interviews are needed for future research examining the social context of mental health conditions in this population. While the present analysis explored gender- and age-related discrimination (the two most prevalent reasons attributed to discriminatory experiences in the sample) and adjusted for the number of other forms of discrimination reported, our small sample size prohibited us from modeling the independent relationship of all forms of discrimination reported (e.g., discrimination due to race, religion, weight) and depressive distress. Furthermore, these measures were limited in their ability to capture variation in the experiences of discrimination over time. Assembling and following a cohort or patient registry of aging transgender people matched with cisgender individuals would provide valuable information about morbidity and mortality by gender identity, as well as increase our understanding of the mechanisms and pathways differentially shaping adverse mental health by age and gender identity/expression.

Public Health Implications and Considerations

Findings from this study have implications for clinical practice, public health programming, research, and policy. Interventions that seek to optimize care for aging transgender adults would benefit from considering everyday experiences of discrimination faced by this vulnerable patient population, including how to minimize such stressors. Conceptually incorporating gender minority stress models (Hendricks & Testa, 2012; Reisner, Pardo, et al., 2015) into the care of aging adults—including familiarizing caretakers, providers, public health practitioners, and researchers with gender minority stress processes and how to curtail their impact—will help ensure that services are culturally responsive and adaptive to the needs of aging transgender people.

It is also important to recognize the need for and limitations of different forms of social support in transgender communities. Non-traditional forms of support represent a potential area for future intervention. For example, helping transgender people to develop a stronger network of friends, including those with other people of transgender experience; involving transgender aging individuals in collective activism; and linking/pairing aging transgender adults with young transgender adults (e.g., “big” and “little” brothers or sisters) are some ideas for future public health efforts. Educational activities targeting healthcare providers and public campaigns to change community biases toward transgender and aging people are also warranted. The creation and enforcement of non-discrimination policies that protect against gender-based discrimination in everyday settings represent an essential legal protection for transgender people. Finally, while chronic conditions may be unavoidable as one ages, research highlights the ability of transgender adults to remain resilient amid the social context of pervasive societal oppression (Mizock & Lewis, 2008). Uncovering the biopsychosocial mechanisms underlying the vulnerability to and protection against the mental health effects of transgender-related stigma represents a critical future research direction with this aging population.

Acknowledgments

Funding

J Appl Gerontol. Author manuscript; available in PMC 2018 December 01.

The authors disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This research was supported with funding from the Miller Foundation. Ms. Jaclyn White Hughto is supported by Award Numbers T32MH020031 and P30MH062294 from the National Institute of Mental Health and 1F31MD011203-01 from the National Institute on Minority Health Disparities. Dr. Sari Reisner is partly supported by the National Institutes of Mental Health (R01MH094323-03S1).

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Biographies

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Sari L. Reisner, ScD, is a research fellow at the Department of Epidemiology in Harvard T.H. Chan School of Public Health and an associate scientific researcher in the Division of General Pediatrics at Boston Children's Hospital/Harvard Medical School (BCH/HMS). He is also an affiliated research scientist at The Fenway Institute at Fenway Health and part of the Sexual Orientation and Gender Identity and Expression (SOGIE) Working Group based at the Chan and BCH/HMS. Trained as a social epidemiologist, his global health research portfolio focuses on (a) health disparities and inequities in lesbian, gay, bisexual, transgender (LGBT) populations, with a focus on local, national, and global transgender and gender non-conforming health; (b) the epidemiology of infectious diseases, including HIV and sexually transmitted infections (STIs) in marginalized, underserved populations, with specialization in biobehavioral intervention design and development; (c) psychiatric epidemiology concentrating on mental health and substance use/abuse risks, and resiliencies in adolescents and young adults. He uses a participatory population perspective to work "with" not "on" communities in research, guided by community-based participatory research principles.

Table 1Characteristics of a Statewide Sample of Transgender Adults in Massachusetts, Ages 50 to 75 Years ($N = 61$).

	Total $n = 61$	
	<i>M</i>	<i>SD</i>
Sociodemographics		
Age (range = 50–75 years)	57.7	5.8
Age (years)	%	<i>n</i>
50–54	34.4	21
55–59	29.5	18
60–64	26.2	16
65–69	3.3	2
70–75	6.6	4
Race/ethnicity		
White (non-Hispanic)	78.7	48
Black (non-Hispanic)	3.3	2
Hispanic/Latino	6.6	4
Multiracial	4.9	3
Other race (non-Hispanic)	6.6	4
Gender identity		
FtM spectrum	23.0	14
MtF spectrum	77.0	47
Survey mode		
In-person	14.8	9
Online	85.2	52
Chronic conditions		
Number of chronic conditions	<i>M</i>	<i>SD</i>
Range = 0–6	1.4	1.3
Social support		
Social connectedness		
Mean number of close friends (range = 0–10)	4.2	3.3
Family very supportive of gender identity/expression		
	%	<i>n</i>
No	77.0	47
Yes	23.0	14
Discrimination		
	<i>M</i>	<i>SD</i>
Number of everyday discrimination experiences (range = 0–11)	5.5	3.9
Discrimination attribution		
	%	<i>n</i>
Gender-related	80.3	49
Age-related	34.4	21
Number of other reason(s)	<i>M</i>	<i>SD</i>

	Total <i>n</i> = 61	
	<i>M</i>	<i>SD</i>
Range = 0–7	1.7	1.6
Mental health		
Depressive distress—Past week (CES-D-10 = 10)	%	<i>n</i>
No	44.3	27
Yes	55.7	34

Note. Percentages may add to more than 100% due to rounding. Discrimination attributions are not mutually exclusive. Other reasons for discrimination include one or more of the following: sexual orientation, race/ethnicity, religion, weight, education, income, disability, other. FtM = female-to-male spectrum; MtF = male-to-female spectrum; CES-D-10 = Center of Epidemiologic Studies Depression Scale.

Adjusted Logistic Regression Analyses Examining the Social Context of Past-Week Depressive Distress Among Transgender Adults in Massachusetts, Ages 50 to 75 Years ($N = 61$).

Table 2

	Depressive distress—Past week							
	Bivariate				Model 1			
	OR	95% CI	<i>p</i> value	aOR	95% CI	<i>p</i> value	aOR	95% CI
Discrimination								
Number of everyday discrimination experiences	1.17	[1.10, 1.24]	<.0001	1.11	[1.03, 1.20]	.01	1.12	[1.03, 1.21]
Gender-related discrimination								
No	1.00	—	—	1.00	—	—	1.00	—
Yes	5.17	[2.73, 9.79]	<.0001	5.68	[1.91, 16.86]	.002	4.01	[1.35, 11.95]
Age-related discrimination								
No	1.00	—	—	1.00	—	—	1.00	—
Yes	1.58	[0.95, 2.62]	.08	2.04	[1.06, 3.94]	.03	1.32	[0.63, 2.75]
Social support								
Number of close friends	0.82	[0.76, 0.89]	<.0001	0.73	[0.64, 0.82]	<.0001	0.69	[0.60, 0.79]
Family very supportive of gender identity/expression								
No	1.00	—	—	1.00	—	—	1.00	—
Yes	0.51	[0.30, 0.87]	.01	2.02	[0.84, 4.88]	.12	1.83	[0.72, 4.62]
Covariates								
Age	1.05	[1.00, 1.09]	.03	1.05	[0.98, 1.12]	.18	1.05	[0.98, 1.12]
Gender identity								
FtM spectrum	1.00	—	—	1.00	—	—	1.00	—
MTF spectrum	1.35	[0.79, 2.31]	.27	1.72	[0.78, 3.81]	.18	2.12	[0.94, 0.81]
Race								
White non-Hispanic	1.00	—	—	1.00	—	—	1.00	—
Non-White	0.27	[0.15, 0.48]	<.0001	1.23	[0.48, 3.14]	.67	0.72	[0.26, 1.98]
Survey mode								

Depressive distress—Past week									
	Bivariate			Model 1			Model 2		
	OR	95% CI	p value	aOR	95% CI	p value	aOR	95% CI	p value
In-person	1.00	—	—	1.00	—	—	1.00	—	—
Online	1.71	[0.90, 3.22]	.10	1.39	[0.53, 3.63]	.50	1.80	[0.61, 5.31]	.29
Number of chronic conditions	1.23	[1.03, 1.48]	.02	1.09	[0.87, 0.36]	.45	0.94	[0.74, 1.19]	.59
Number of other reasons for discrimination	1.62	[1.37, 1.93]	<.0001	—	—	—	1.87	[1.43, 2.46]	<.0001

Note. Bolded values are significant at the $p < 0.05$ level. Other reasons for discrimination include one or more of the following: sexual orientation, race/ethnicity, religion, weight, education/income, disability, other. OR = odds ratio; aOR = adjusted odds ratio; FTM = female-to-male spectrum; MtF = male-to-female spectrum.