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Transgender and gender non-conforming adult preparedness for aging: Concerns for aging, and familiarity with and engagement in planning behaviors

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ABSTRACT

***Background*:** Research on transgender and gender-nonconforming (TGNC) aging is limited. To date, most of the literature about TGNC aging has focused on discrimination (particularly in healthcare), violence and abuse, caregiving and family relations, and religiosity.

***Aims*:** The purposes of this study were to: (a) document concerns about aging among TGNC adults, including concerns that are identity-specific; (b) examine preparation for aging and end of life (i.e., familiarity and planning) among TGNC adults; and (c) examine potential differences in familiarity and planning based on gender identity.

***Methods*:** One hundred fifty-four individuals who currently or have ever identified as TGNC completed a national online survey assessing these constructs.

***Results*:** TGNC individuals reported many concerns about aging, both gender identity-specific and not. The most common aging concern was losing the ability to care for themselves followed by having to go into a nursing home or assisted living facility. The age preparatory behaviors individuals were most commonly aware of included: life insurance, wills, organ donation, regular medical checkups, living wills, durable power of attorney for healthcare, and trusts. Gender-nonconforming individuals had significantly more familiarity with age preparatory behaviors than trans feminine individuals, but had lower levels of planning to engage in age preparatory behaviors than both trans masculine and trans feminine individuals.

***Conclusion*:** The current findings highlight the need for providers to address age preparatory behaviors with TGNC individuals or provide referrals to support individuals in this planning.

KEYWORDS

Aging; end-of-life care; living wills; non-binary; nursing care; preparatory behaviors; transgender

Introduction

For transgender and gender non-conforming (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, 2012b). 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; Fabbre, 2015; Kimmel, 2014; Mohamed & Hunter, 2019; Siverskog, 2014). The focus has also been relatively narrow. To date, most of the literature about TGNC aging has focused on population size (The Williams Institute, 2019), discrimination (particularly in healthcare; Choi & Meyer, 2016; Finkenauer, Sherratt, Marlow, & Brodey, 2012; James et al., 2016), health disparities (Arcelus & Bouman, 2015; Choi, Kittle, & Meyer, 2018; Choi & Meyer, 2016), violence and abuse (Witten, 2002; Witten & Eyler, 1999), caregiving and family relations (Witten, 2009), and resilience factors (e.g., religiosity) (Choi & Meyer, 2016; Kidd & Witten, 2008; McFadden, Frankowski, Flick, & Witten, 2013; Porter, Ronneberg, & Witten, 2013). There are a few notable exceptions to these topics from broader lesbian, gay, bisexual, and transgender (LGBT) studies/surveys: the AIDS Community Research Initiative of America (ACRIA) study

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prepared for the Center on Halsted (2011) of which 5% of the sample ($N = 211$) was TGNC or intersex; The Fredriksen-Goldsen et al. (2011), a collaborative report of 11 lesbian, gay, bisexual, and transgender (LGBT) aging organizations nationally with 7% of participants identifying as TGNC ($N = 2{,}560$); and The MetLife Study of LGBT Baby Boomers (2010) with <1% identifying as TGNC ($N = 2{,}407$). These larger, more representative studies provide a wealth of information about the material conditions of LGBT older adults' lives.

These studies have found that in the process of aging, older adults, and specifically LGBT older adults, 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 itself, but how one dies and what will happen afterwards that often elicit 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. As evidenced in part by the fact that less than half of older adults in the general population (regardless of sexuality/gender identity) 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). Furthermore, racial and ethnic minorities are even less likely to participate in advance care planning (Harrison, Adrion, Ritchie, Sudore, & Smith, 2016; Hong, Eun-Hye, Johnson, & Adamek, 2018; Peterson et al., 2019). 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).

For LGBT older adults, specifically, 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) study. 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 specifically, 37% indicated having a DPAH, and 49% reported having a will (Fredriksen-Goldsen et al., 2011). Despite the differences between studies, TGNC older adults were 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). 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; 2012b; Carr & Khodyakov, 2007; Douglas & Brown, 2002; Kahana et al., 2004; Kelly, Masters, & Deviney, 2013).

The extant literature on age-preparatory behaviors have primarily focused on cisgender individuals (Carr & Khodyakov, 2007). Additionally, most studies focus on older adults in poor health living in an institution (Allen et al., 2003) or specific disease groups (Wenger et al., 2001). The current study examines many of the same constructs of age preparatory behaviors, however, in a nearly completely understudied population. The purposes of this study were to: (a) document concerns about aging among TGNC adults, including concerns that are identity-specific; (b) examine preparation for aging (i.e., familiarity and planning) among TGNC adults; and (c) examine potential differences in familiarity and planning based on gender identity.

Methods

Participants

Participants ($N = 154$) were individuals who self-identified as either currently or ever[1] having identified as transgender or gender-nonconforming (TGNC). 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.

Table 1. Sample characteristics.

Characteristics	Total ($N = 154$)	Masculine ($n = 41$)	Feminine ($n = 75$)	Gender-nonconforming ($n = 38$)
Age, M (SD, Range)	29.89 (8.2, 18–60)	29.8 (7.8, 19–51)	30.4 (8.2, 20–60)	29.1 (8.7, 18–58)
Currently live as self-identified gender, *n* (%)	113 (73.4)	33 (80.5)	58 (77.3)	22 (57.9)
Gender Self Perception, *n* (%)				
Masculine	23 (14.9)	23 (56.1)	–	–
Feminine	56 (36.4)	–	56 (74.7)	–
Transmasculine	18 (11.7)	18 (43.9)	–	–
Transfeminine	19 (12.3)	–	19 (25.3)	–
Genderqueer/Gender-Nonconforming	36 (23.4)	–	–	36 (94.7)
Other	2 (1.3)	–	–	2 (5.3)
Sexual Orientation, *n* (%)				
Straight/Heterosexual	18 (11.7)	8 (19.5)	9 (12.0)	1 (2.6)
Bisexual	49 (31.8)	14 (34.1)	25 (33.3)	10 (26.3)
Gay	21 (13.6)	6 (14.6)	14 (18.7)	1 (2.6)
Lesbian	11 (7.1)	3 (7.3)	6 (8.0)	2 (5.3)
Queer	15 (9.7)	3 (7.3)	6 (8.0)	6 (15.8)
Pansexual	22 (14.3)	3 (7.3)	10 (13.3)	9 (23.7)
Asexual	17 (11.0)	4 (9.8)	4 (5.3)	9 (23.7)
Other	1 (0.6)	–	1 (1.3)	–
Education				
Doctorate degree	1 (0.6)	1 (2.4)	–	–
Master's degree	17 (11.0)	10 (24.4)	4 (5.3)	3 (7.9)
4-year college degree	56 (36.4)	8 (19.5)	33 (44.0)	15 (39.5)
2-year/technical degree	26 (16.9)	5 (12.2)	13 (17.3)	8 (21.1)
Some college (no degree)	38 (24.7)	13 (31.7)	17 (22.7)	8 (21.1)
High school/GED	15 (9.7)	4 (9.8)	7 (9.3)	4 (10.5)
Grade school	1 (0.6)	–	1 (1.3)	–
Race/Ethnicity				
White/European-American (non-Latino)	104 (67.5)	27 (65.9)	48 (64.0)	29 (76.3)
Black/African-American (non-Latino)	17 (11.0)	6 (14.6)	9 (12.0)	2 (5.3)
Asian/Asian-American/Pacific Islander	13 (8.4)	3 (7.3)	7 (9.3)	3 (7.9)
Latino/Hispanic	13 (8.4)	3 (7.3)	8 (10.7)	2 (5.3)
American-Indian/Native-American/Alaska-Native	2 (1.3)	1 (2.4)	1 (1.3)	–
Multiracial/Multiethnic	5 (3.2)	1 (2.4)	2 (2.7)	2 (5.3)
Social Class (annual), *n* (%)				
<$10,000	8 (5.2)	2 (4.9)	3 (4.0)	3 (7.9)
Between $10,000 and $24,999	30 (19.5)	7 (17.1)	14 (18.7)	9 (23.7)
Between $25,000 and $39,999	27 (17.5)	5 (12.2)	13 (17.3)	9 (23.7)
Between $40,000 and $54,999	36 (23.4)	8 (19.5)	19 (25.3)	9 (23.7)
Between $55,000 and $69,999	24 (15.6)	10 (24.4)	9 (12.0)	5 (13.2)
Between $70,000 and $79,999	15 (9.7)	4 (9.8)	9 (12.0)	2 (5.3)
Over $80,000	14 (9.1)	5 (12.2)	8 (10.7)	1 (2.6)

Procedure

A dual recruitment method was used to gather cross-sectional survey data via two online mechanisms. The first mechanism was Amazon's Mechanical Turk (Mturk). Mturk is a popular platform for crowd-sourcing 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 received $1 (USD) in compensation for completing the study survey HIT, in line with previous Mturk research (Buhrmester, Kwang, & Gosling, 2011; Eriksson & Simpson, 2010; Sprouse, 2011). 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 the 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 et al., 2011). One example is Casler et al. (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, Rand, & Zeckhauser, 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 recruitment method was an online snowball sample collected via a TGNC listserv comprised of individuals who had participated in previous research, community leaders, organizations, and trans-related e-lists (Witten, 2014a). An initial recruitment email was sent via the listserv, in which the study was described and a link to the informed consent, screener, and survey. Within a week to two weeks, a follow-up email was sent as a reminder about the study, with the same study description and link to the survey with consent and screener. The survey was administered online through Qualtrics on participants' personal computers or mobile phones and took approximately an hour to complete.

Of the 154 participants, seven were recruited via the listserv and the remaining 147 were recruited using Mturk. The average age of participants from the listserv was greater than from Mturk (41.71 vs 29.33 years). The listserv had a higher percentage of masculine individuals than the Mturk sample (57.2% vs 25.2%). Both groups were majority white (100% from the listerv, 66% Mturk) and well-educated (100% of the listserv had at least some college, and 89.1% of the Mturk sample).

An online Qualtrics survey was used to screen potential participants for inclusion criteria. Inclusion criteria for the current study were 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) be fluent enough in English to complete the survey. Participants' data were excluded from analysis if there was compelling indication of inaccurate responding or unfeasible

response patterns (e.g., selecting the first response on most or every item). Participants were ineligible to participate if they (a) were under the age of 18, (b) did not currently or had not ever identified as trans(gender), gender-nonconforming, and/or non-binary, (c) were unable to complete the survey in English. Participants completed a prescreening measure to assess eligibility. Institutional Review Board (IRB) approval of the study's protocol was obtained before any participants were recruited.

Measures

Aging concerns

Researcher-generated questions in collaboration with an outside TGNC expert were created to examine generic (e.g., losing the ability to care for yourself) and identity-specific (e.g., not being able to completely transition the way you want before you die) aging concerns. Response options were dichotomized as yes or no. This measure had moderate internal consistency ($\alpha = .68$), as types of aging concerns are not necessarily related to one another (e.g., it is possible to worry about not being able to completely transition the way you want before you die without worrying about being buried in the clothing from the wrong gender).

Preparedness for aging

There have been a few studies which looked at various end-of-life, aging, and death preparatory behaviors (Carr & Khodyakov, 2007; Robbins, 1994; Witten, 2014b). Thirteen questions assessed familiarity with a number of these behaviors. For example: a will, a living will, and life insurance. Response options for familiarity were binary yes or no. Sixteen questions assessed planning behaviors. For example: if the participant has a will, receives regular medical checkups, and has a pension or other retirement plan. Response options were 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 ($\alpha = .86$) and planning had excellent reliability ($\alpha = .92$).

Demographics

A researcher-designed demographic form was included in the list of administered measures. Among the demographic information being collected included item such as: age, gender self-perception, race/ethnicity, educational status, sexual orientation, family income level, and religious/faith/spiritual preference and practice.

Design and analysis

For the first aim of this study, descriptive statistics (sums, percentages, means) are reported. For aims two and three, one-way between-subjects ANOVAs with post-hoc testing were performed to examine preparation for aging (i.e., familiarity and planning) among TGNC adults and any potential differences based on gender identity.

Results

Descriptives

Table 2 shows the number and percentage of participants who endorsed specific aging concerns. The most common aging concern was losing the ability to care for themselves. The second most common concern was going into a nursing home or assisted living facility. The two least common concerns were having continued access to

Table 2. 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 3. Percentage familiarity with and planning in age preparatory behaviors.

Age preparatory behavior	Familiar, *n* yes (%)	Planning 1 (will not have), *n* (%)	Planning 2, *n* (%)	Planning 3, *n* (%)	Planning 4 (plan on having), *n* (%)	Planning 5, *n* (%)	Planning 6, *n* (%)	Planning 7 (currently have), *n* (%)	Planning *M (SD)*
Will	121 (78.6)	15 (9.7)	6 (3.9)	16 (10.4)	76 (49.4)	15 (9.7)	11 (7.1)	15 (9.7)	4.06 (1.55)
Living Will	90 (58.4)	26 (16.9)	9 (5.8)	16 (10.4)	64 (41.6)	19 (12.3)	10 (6.5)	10 (6.5)	3.72 (1.66)
DPHC	90 (58.4)	21 (13.6)	14 (9.1)	17 (11.0)	66 (42.9)	16 (10.4)	11 (7.1)	9 (5.8)	3.72 (1.60)
Life Insurance	128 (83.1)	16 (10.4)	6 (3.9)	15 (9.7)	56 (36.4)	17 (11.0)	13 (8.4)	31 (20.1)	4.40 (1.82)
Long-term care insurance	60 (39.0)	26 (16.9)	19 (12.3)	20 (13.0)	48 (31.2)	17 (11.0)	13 (8.4)	11 (7.1)	3.61 (1.76)
Regular Medical checkups	93 (60.4)	10 (6.5)	6 (3.9)	13 (8.4)	44 (28.6)	21 (13.6)	15 (9.7)	45 (29.2)	4.85 (1.81)
Organ Donor	99 (64.3)	27 (17.5)	10 (6.5)	15 (9.7)	30 (19.5)	14 (9.1)	13 (8.4)	45 (29.2)	4.38 (2.21)
Pension or Retirement	69 (44.8)	24 (15.6)	11 (7.1)	18 (11.7)	64 (41.6)	13 (8.4)	9 (5.8)	15 (9.7)	3.77 (1.72)
Pre-arranged Funeral Plans	63 (40.9)	36 (23.4)	18 (11.7)	17 (11.0)	52 (33.8)	13 (8.4)	11 (7.1)	7 (4.5)	3.32 (1.74)
A Trust	77 (50)	48 (31.2)	20 (13.0)	18 (11.7)	41 (26.6)	6 (3.9)	14 (9.1)	7 (4.5)	3.05 (1.83)
Partner Agreements	48 (31.2)	42 (27.3)	18 (11.7)	24 (15.6)	36 (23.4)	13 (8.4)	15 (9.7)	6 (3.9)	3.19 (1.81)
Rights of visitation	25 (16.2)	46 (29.9)	20 (13.0)	23 (14.9)	37 (24.0)	15 (9.7)	11 (7.1)	2 (1.3)	2.97 (1.68)
Informal caregiving arrangements	31 (20.1)								
With partner/spouse		32 (20.8)	2 (1.3)	8 (5.2)	42 (27.3)	17 (11.0)	22 (14.3)	31 (20.1)	4.30 (2.10)
With parent		33 (21.4)	12 (7.8)	15 (9.7)	33 (21.4)	15 (9.7)	19 (12.3)	27 (17.5)	3.97 (2.13)
With children		72 (46.8)	8 (5.2)	10 (6.5)	35 (22.7)	8 (5.2)	13 (8.4)	8 (5.2)	2.81 (1.98)
With siblings		51 (33.1)	11 (7.1)	8 (5.2)	38 (24.7)	16 (10.4)	19 (12.3)	11 (7.1)	3.38 (2.05)
With other bio relatives		61 (39.6)	13 (8.4)	15 (9.7)	29 (18.8)	15 (9.7)	10 (6.5)	11 (7.1)	2.99 (2.00)
With friends/neighbor		62 (40.3)	17 (11.0)	13 (8.4)	31 (20.1)	11 (7.1)	10 (6.5)	10 (6.5)	2.88 (1.96)
With religious community		89 (57.8)	13 (8.4)	12 (7.8)	17 (11.0)	11 (7.1)	8 (5.2)	4 (2.6)	2.27 (1.78)
With other		128 (83.1)	2 (1.3)	4 (2.6)	5 (3.2)	8 (5.2)	5 (3.2)	2 (1.3)	1.61 (1.47)
Discussion about wishes									
With partner/spouse		31 (20.1)	3 (1.9)	3 (1.9)	44 (28.6)	23 (14.9)	14 (9.1)	36 (23.4)	4.37 (2.10)
With parent		34 (22.1)	13 (8.4)	13 (8.4)	35 (22.7)	11 (7.1)	17 (11.0)	31 (20.1)	3.98 (2.18)
With children		74 (48.1)	6 (3.9)	8 (5.2)	30 (19.5)	15 (9.7)	12 (7.8)	9 (5.8)	2.86 (2.05)
With siblings		47 (30.5)	17 (11.0)	11 (7.1)	36 (23.4)	11 (7.1)	15 (9.7)	17 (11.0)	3.39 (2.09)
With other bio relatives		60 (39.0)	14 (9.1)	15 (9.7)	23 (14.9)	15 (9.7)	13 (8.4)	14 (9.1)	3.09 (2.10)
With friends/neighbor		55 (35.7)	19 (12.3)	15 (9.7)	25 (16.2)	16 (10.4)	13 (8.4)	11 (7.1)	3.07 (2.01)
With religious community		89 (57.8)	13 (8.4)	9 (5.8)	17 (11.0)	9 (5.8)	7 (4.5)	10 (6.5)	2.38 (1.96)
With other		130 (84.4)	1 (0.6)	3 (1.9)	7 (4.5)	3 (1.9)	5 (3.2)	5 (3.2)	1.62 (1.56)

hormones and not being able to transition medically before they die.

Table 3 shows the number and percentage of participants familiar with specific age preparatory behaviors and the number and percent of participants planning to engage in them who responded at each Likert response option. The most familiar age preparatory behaviors were life insurance, wills, organ donation, regular medical checkups, living wills, durable power of attorney for healthcare, and trusts. The least familiar age preparatory behaviors were rights of visitation, informal caregiving arrangements, and partner agreements. Of the age preparatory behaviors, participants were already engaging in or planning to engage in very few. The most common were regular medical checkups, life insurance, organ donation, discussions about wishes with a partner/spouse, informal caregiving arrangements with a partner/spouse, and wills. The least likely were rights of visitation, informal caregiving relationships with friends/neighbor, discussions about wishes with religious community or informal caregiving relationships, or discussions about wishes with others or informal caregiving relationships.

A correlation matrix was conducted to examine the relationships among preparedness for aging familiarity and planning and various key demographics that might be related to aging concerns and preparedness (i.e., age, racial/ethnic minority status, education, and socioeconomic status). No demographic variables were significantly related to preparedness for aging familiarity or planning.

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

Table 4. Significance of mean differences for aging preparation familiarity and planning.

	Trans Masc.	Trans Fem.
Familiarity		
Trans Masc. (6.61)		
Trans Fem. (5.69)	.395	
GNC (7.53)	.500	.032*
Planning		
Trans Masc. (3.45)		
Trans Fem. (3.32)	.791	
GNC (2.80)	.011*	.024*

* = $p < .05$.

between-subjects ANOVA on the effect of gender identity on age preparation familiarity was significant with a small effect [$F(2, 151) = 3.343$, $p = .038$, $\eta^2 = .04$]. Post hoc Tukey comparisons (see Table 4) indicated that the mean score for the trans feminine group ($M = 5.69$, $SD = 3.49$) was significantly different from 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. Specifically, the trans feminine individuals were significantly less likely to be familiar with age-preparation methods than GNC people, but trans masculine individuals did not differ significantly from either group. The second one-way between-subjects ANOVA on the effect of gender identity on age- preparation planning was also significant with a moderate effect [$F(2, 151) = 4.931$, $p = 008$, $\eta^2 = .06$]. Post hoc Tukey comparisons (see Table 4) 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 from the GNC group ($M = 2.80$, $SD = 0.80$), but not from each other. Specifically, GNC individuals were less likely to engage in age-preparatory planning than both trans feminine and trans masculine individuals.

Discussion

The purpose of this study was to document concerns about aging and preparation for aging (i.e., familiarity and planning) among TGNC adults. First, this study found that TGNC individuals have many concerns about aging, both general and identity-specific. While the specific endorsements of aging concerns vary, TGNC individuals may have more immediate concerns which supersede concerns about aging (Edelman et al., 2015; Grant et al., 2011; James et al., 2016). Additionally, not all TGNC individuals have the same goal for medical transition, so medical transition concerns may not apply to them. However, how individuals are coping with these concerns needs to be considered.

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 was 29.89 years and the previous study focused on a longitudinal study with a sample of 64–65-year-olds. It is possible that because the mean age of the sample was so young ($M = 29.89$) that most individuals were not yet participating in age preparatory behaviors, even if they are aware of them. This is also 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 21 states and Washington D.C. have nondiscrimination laws based on gender identity for housing, which may affect TGNC individuals' ability to find a senior living community or long-term residential care. 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.

Age preparatory behaviors (familiarity and planning) also differed by gender self-perception, such that the GNC group also had significantly

higher familiarity and lower planning than the trans masculine and trans feminine groups. 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.

Implications

The current study found high endorsement of concerns about aging, so clinicians may wish to assist TGNC individuals in identifying and addressing their concerns around aging. In few states do legal protections exist to protect identity after death (Porter et al., 2016). Discussing age preparatory behaviors with TGNC individuals or providing referrals to support individuals in this planning with providers may be an important piece in addressing these issues. In addition, providers should be trained and supported in working with older TGNC adult populations, particularly regarding the unique concerns of non-binary and racial/ethnic minorities. The APA has published guidelines for working with TGNC individuals (American Psychological Association, 2015), which have since been interpreted to provide specific guidance for older TGNC adults (Porter et al., 2016). It has also been recommended that TGNC individuals be included in shared decision-making regarding research and clinical care (T'Sjoen, Motmans, Arcelus, & Bouman, 2017). For non-binary individuals, one potential unique concern is there is also a struggle against the narrative of binary, biomedical transition (Nicolazzo, 2016). Binary TGNC individuals have become increasingly socially acceptable because they pass, they blend in (Nicolazzo, 2016). Non-binary TGNC individuals lack this invisibility (Fiani & Han, 2019; Nicholas, 2019). For racial/ethnic minority TGNC individuals there is an assumption that these identities are at odds or competing (Nicolazzo, 2016), and individuals experience multiplicative stigma and discrimination as a result of having multiple minority identities (James, Brown, & Wilson, 2017). In previous research, a common theme among TGNC individuals was that they planned to detransition (or retransition) in later life to access the care they felt they needed (Witten, 2012b). This refers to a process by which an individual returns to presenting as the gender 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 in combination of the findings from the current study suggest a high degree of anticipatory fear of aging among the TGNC community. Along with 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. Examples of community-based organizations which work for trans-initiatives for older LGBTQ + and TGNC adults include SAGE and FORGE. SAGE is an organization which advocates on behalf of diverse older LGBT adults on issues such as caregiving, elder abuse and neglect, social security, Medicare and Medicaid, health care, financial security and retirement, housing, and HIV/AIDs (SAGE, 2019). FORGE houses the Transgender Aging Network (TAN) which is designed to promote communication among advocates, educators, researchers, and service providers, to promote awareness of concerns and realities of TGNC older adults, and to advocate for policy change in public and private institutions (FORGE, 2019). Linking TGNC adults who have a low familiarity with or engagement in age preparatory behaviors with either of these organizations could be extremely helpful.

Limitations and future research

The current study should be viewed within the context of several limitations, which as a result, also provide directions for future research. This

study used a dual recruitment method, both of which were web-based convenience sampling. Web-based recruitment methods such as these tend to recruit samples which have similar demographics to the current study sample (majority White and well educated). This may not have generated a representative sample of the TGNC population as a whole, and these results may only apply to individuals with access to online forums and listservs similar to where the study recruited. 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 or have access to academic and community-based listservs. 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. Intersectionality may also be important and is therefore likely to influence survey results. For example, Witten (2015, 2016) examined differences in end of life (EOL) preparedness as influenced by differences in age × gender × sexuality identity. She found that adding the intersectionality variable "sexuality" influenced EOL preparedness. Finally, this study was a descriptive study. While it demonstrates moderate familiarity and low planning for aging, future research may wish to take a more developmental and longitudinal approach to examine preparation for aging and concerns about aging. The mean age of the sample ($M = 29.89$) was also younger than some of the samples in the other studies summarized in the literature review, and people in this stage of life may not yet be thinking about, planning for, or concerned with aging and end-of-life preparations. Aging concerns may not be on the radar for younger people, regardless of gender identity, and that may paint a somewhat skewed picture of the nature of aging concerns among TGNC people; and applying the findings from this study to a much older TGNC population may distort an understanding of this phenomenon. Although no age-based inclusion criteria (e.g., 50 or older) were set for the current study because it included a convenience sample of TGNC individuals, future studies may wish to apply a strict age-based criterion for study inclusion so that findings might generalize more directly to older TGNC individuals.

Conclusion

The purpose of the current study was to document concerns about aging and preparation for aging (i.e., familiarity and planning) among TGNC adults. TGNC individuals have many concerns about aging, both identity-specific and not. There were significant differences in preparation and planning by gender identity. The current findings may inform the need for providers to address age preparatory behaviors with TGNC individuals or providing referrals to support individuals in this planning.

Note

1. Some TGNC individuals will stop identifying as transgender or gender-nonconforming once meeting individual transition goals. Specifically, binary trans individuals may identify simply as men and women.

Conflict of interest

The authors declare that they have no conflict of interest.

Human and animal rights and informed consent

This research involved Human Subjects and the studies have been approved by the appropriate institutional and/or national research ethics committee and have been performed in accordance with the ethical standards as laid down in the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards. This article does not contain any studies with animals performed by any of the authors. Informed consent was obtained from all individual participants included in the study.

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