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Development of a multidimensional measure of health care access among LGBTQ midlife and older adults in the United States

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Abstract

Purpose: Lesbian, gay, bisexual, transgender, and queer (LGBTQ) midlife and older adults are a health disparity population whose health and health care needs are distinguished by the intersection of gender, sexuality, and age. Research and measurement considering multidimensional factors influencing health care access among this population, however, remain limited. Theoretically cohesive indicators of health care access were combined to develop a comprehensive and reliable, yet parsimonious scale that assesses the unique health care access needs and experiences of LGBTQ midlife and older adults.

Methods: Data from the U.S.-based Aging with Pride: National Health, Aging, and Sexuality/ Gender Study (NHAS) were used, including 2322 LGBTQ participants from the 2015 wave of data collection. Twenty-four items were initially included in an assessment of scale reliability. The underlying factor structure of health care access was tested. Differences in mean health care access scores were examined across sexual identity, current gender, gender identity, and age cohort.

Results: Nineteen items remained in the final scale ($\alpha=0.90$). Data supported health care access as multidimensional among NHAS participants. Heterogeneity in health care access scores was identified across participants. Bisexual, straight, and sexually diverse participants, women and gender diverse participants, and transgender participants faced more difficulties accessing care. Participants aged 66–80 and 81+ reported significantly higher health care access scores.

Conclusion: Final indicators represented the complex health care experiences of LGBTQ midlife and older adults. This scale can be utilized in future health equity research. Using NHAS longitudinal data, future research could assess changes in access over the life-course and as a predictor of health outcomes.

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CRediT authorship contribution statement
Meghan Romanelli: Conceptualization, Formal analysis, Methodology, Writing – original draft, Writing – review & editing. **Karen Fredriksen-Goldsen:** Conceptualization, Funding acquisition, Investigation, Writing – original draft, Writing – review & editing. **Hyun-Jun Kim:** Conceptualization, Data curation, Investigation, Writing – original draft, Writing – review & editing.

Declaration of Competing Interest
The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

1. Introduction

The population of older adults is rapidly expanding in the U.S., growing at an unprecedented rate (He et al., 2016). Similarly, sexual and gender minority population rates have been rising yearly (Jones, 2022). By the year 2060, there will be an estimated 5 million LGBTQ adults aged 50 and over (Fredriksen-Goldsen and Kim, 2017). LGBTQ midlife and older adults will comprise a significant proportion of the U.S. census and must be a priority population in health equity research. It is well known that LGBTQ populations, generally, display disparate rates of many serious health conditions, including heart disease (Caceres et al., 2020; Heslin and Hall, 2021), some cancers (Heslin and Hall, 2021; Quinn et al., 2015), chronic lung disease (Heslin and Hall, 2021; Gonzales and Henning-Smith, 2017), stroke (Heslin and Hall, 2021; Rosendale et al., 2021), diabetes (Heslin and Hall, 2021; Beach et al., 2018), chronic kidney disease (Heslin and Hall, 2021) and certain adverse health behaviors such as smoking. The intersection of age may only exacerbate concerning health outcomes (Fredriksen-Goldsen et al., 2014a; Fredriksen-Goldsen et al., 2014b). Extending beyond the role of natural aging processes, the unique historical and cultural contexts of many LGBTQ midlife and older adults may also increase their vulnerabilities for poor health outcomes, e.g., through accumulated exposure to identity-related discrimination (Fredriksen-Goldsen et al., 2014b).

LGBTQ populations also experience disparities within several domains that represent the social determinants of health as outlined by Healthy People 2030 (Fredriksen-Goldsen et al., 2022; Fredriksen-Goldsen et al., 2024), including health care access. Among LGBTQ midlife and older adults, distinct difficulties accessing health care may also contribute to poor health and mental health outcomes (Fredriksen-Goldsen et al., 2014b; Fredriksen-Goldsen and Kim, 2017). For example, 40 % of trans midlife and older adults report being denied health care and 11 % of LGB midlife and older adults report the same experience (Fredriksen-Goldsen et al., 2011). Additionally, close to 25 % of LGBTQ midlife and older adults have not disclosed their sexual or gender identity to their doctor (Fredriksen-Goldsen et al., 2011). Discomfort with discussions around sexual and gender identity may regulate health care communication choices of both patients and providers (Goins and Pye, 2013) and limit opportunities to be offered tailored care (Romanelli and Hudson, 2017).

While health care access issues may be at the root of health disparities for some LGBTQ midlife and older adults, quality health care is necessary to build towards health equity. Health care is critical to screen for, monitor, and treat many of the health disparities faced by LGBTQ populations (United States Department of Health and Human Services [HHS], 2022; Centers for Disease Control and Prevention, 2023]). LGBTQ communities, however, consistently assert that the U.S. health system was not built by them, with them, or in consideration of their health and health care needs (Martos et al., 2017; Matsuzaka et al., 2021). Emergence of community-based models of LGBTQ health care have begun to

address the system- and individual-level misalignment contributing to LGBTQ health and health care disparities (Martos et al., 2017; Matsuzaka et al., 2021). LGBTQ care-seekers who access care within LGBTQ-specific health sites may benefit beyond the receipt of direct health care. Research shows that these types of settings offer a point of social connection and belonging for LGBTQ communities (Matsuzaka et al., 2021), an essential element for promoting wellbeing among LGBTQ midlife and older adults (Breder and Bockting, 2022; Kim et al., 2017). Beyond connection and belonging, LGBTQ social networks may motivate continued service engagement (Matsuzaka et al., 2021), and offer pathways to health through health care navigation assistance, community service linkages, and health-related decision support (Kim et al., 2024). With majority of LGBTQ-specific health sites dispersed along urban, coastal US cities (Martos et al., 2017; Hudson, 2018), opportunities for LGBTQ care-seekers to establish and cultivate supportive care networks may be bounded to these enclaves.

Health care access is often seen as an isolated event or the initial contact with health services (Levesque et al., 2013). Our recent work among population-based samples of LGBTQ adults, however, shows that utilization alone is not adequate to measure, nor facilitate health. Two studies examined utilization of different types of health services and found heterogeneity across sexual (Fredriksen-Goldsen et al., 2024) and gender (Fredriksen-Goldsen et al., 2022) minority subgroups. For example, while we found that transgender men have higher odds of using 12-month routine check-ups than cisgender men, they also have higher odds of reporting poor mental health and a greater number of chronic conditions. This indicates that the single-dimension utilization cannot tell the whole story of how LGBTQ care-seekers interact with the health care system, and it remains imperative to tease out the unique health care experiences that define health care access among LGBTQ midlife and older adults.

More recently, health services research has attempted to move away from utilization to acknowledge the multidimensional nature of health care access that requires a level of fit between characteristics of the care-seekers and the services or providers (Levesque et al., 2013; Penchansky and Thomas, 1981; Saurman, 2016). Instead of solely assessing whether a care-seeker received services, these perspectives prioritize facilitating the right care, from the right provider, at the right time and place, while remaining context sensitive (Saurman, 2016).

Penchansky and Thomas initially defined five dimensions of access—availability, accessibility, affordability, accommodation/appropriateness, and acceptability (Penchansky and Thomas, 1981). More recent multidimensional access model iterations (e.g., Levesque et al.'s patient-centered model (Levesque et al., 2013)) consider that the realization of opportunities for care-seekers to identify health care needs and reach and use services are dependent on the interaction of both individual- and structural level dimensions of access, i.e., characteristics related to the care-seeker's abilities (to perceive a need; to seek care; to reach care; to pay for care; to engage with care) and characteristics related to the services/providers (approachability; acceptability; availability; affordability; appropriateness). This multidimensional definition of health care access was applied to help-seeking experiences of LGBTQ adults and responses mapped onto all the representative theoretical dimensions

at both the individual and structural levels, indicating the salience of this perspective among LGBTQ care-seekers (see Romanelli and Hudson, 2017).

Yet, the multidimensional perspective of health care access is an intricate construct, and accurate measurement is a difficult task (Levesque et al., 2013). Despite increasing consideration for health care access as multidimensional, a recent review of *access* measures found no comprehensive measure that assessed multiple dimensions simultaneously. Instead, all measures individually and separately examined specific dimensions of health care access (Quinn et al., 2017). In response, Hoseini-Esfidarjani (2021) developed and evaluated the psychometric properties of an assessment of health care access that incorporated Penchansky and Thomas' dimensions as relevant to the context of Iranian care-seekers (Hoseini-Esfidarjani et al., 2021). A similar multidimensional measure, and one that also considers factors at both individual- and structural levels, has not been considered for LGBTQ midlife and older adults. While some recent measurement work among LGBTQ communities has been completed assessing single health care access domains (e.g., health literacy (Eliason et al., 2018); trans-inclusive health care practices (Kattari et al., 2020a)), few studies have endeavored to reliably capture the multifaceted nature of health care access, generally, let alone among LGBTQ communities or midlife and older adults.

1.1. Conceptual framework

The Health Equity Promotion Model (HEPM) is the conceptual framework that guides the Aging with Pride: National Health, Aging, and Sexuality/Gender Study (NHAS), the first national, longitudinal survey investigating the lives and health of LGBTQ midlife and older adults. The HEPM provides an integrative, context-sensitive approach to examining structural and individual level processes that facilitate or inhibit health equity among LGBTQ people (Fredriksen-Goldsen et al., 2014b). The model's consideration of the possibility for unique constellations of risks and resiliencies permits the exploration of heterogeneity in mechanisms leading to health inequities as well as those supporting or hindering health care access among LGBTQ people. As the HEPM integrates a life-course developmental perspective, its integration with specific health care access theories is important to further elucidate the role of health care access within the HEPM and on health outcomes among LGBTQ midlife and older adults.

Levesque and colleagues' (Levesque et al., 2013) patient-centered model (PCM) aligns with the HEPM in delineating individual- and structural-level dimensions that facilitate or inhibit *health care access*. In practice, such theoretical dimensions can be translated to tangible, measurable, real-world experiences within the health care system. Triangulating the PCM (Levesque et al., 2013) with relevant literature and formative reviews conducted by NHAS researchers, health literacy, help-seeking beliefs, barriers to care, health care discrimination, and patient-provider relationship quality are identified experiences that embody dimensions of health care access among LGBTQ midlife and older adults.

1.1.1. Individual-level dimensions—Representing an individual-level dimension in both the HEPM and PCM, a care-seeker's ability to perceive a need to access health care is directly determined by their level of health literacy and knowledge of health (Levesque et

al., 2013). Among LGBTQ care-seekers, certain subgroups may underestimate their health risks (Paschen-Wolff et al., 2020) and, therefore, their need for care. Some lesbians describe, for example, health beliefs that lead to forgone gynecological care and mammography (Romanelli and Hudson, 2017), including among midlife and older sexual minority women (Fredriksen-Goldsen et al., 2013). Once a care-seeker has perceived a need for services, the further ability to seek and engage in care can be driven by their individual-level help-seeking beliefs. These perspectives of the health system are often influenced by historical, community, and personal contexts (Levesque et al., 2013). The beliefs of LGBTQ midlife and older adults, therefore, may be situated within histories and systems of pathology and discrimination (Fredriksen Goldsen et al., 2022; Fredriksen-Goldsen et al., 2023). Research has found that both LGB and transgender care-seekers hold negative attitudes towards mental health (Spengler and Ægisdóttir, 2015) and health care seeking (Howell and Maguire, 2019).

1.1.2.   Structural-level dimensions—When accessing health care, LGBTQ populations often face financial concerns (Lerner and Robles, 2017), transportation/ geographic restrictions (Kattari et al., 2020b) due to the limited availability of LGBTQ affirmative providers (Katz-Wise and Hyde, 2012; Kcomt, 2019; Romanelli and Hudson, 2017) and experience anticipated and enacted health care discrimination (Katz-Wise and Hyde, 2012; Kcomt, 2019; Romanelli and Hudson, 2017). Each reflects possible, measurable barriers to care that cross-cut structural-level dimensions of health care access—service affordability, availability/accommodation (e.g., service can be reached), approachability (e.g., service exists and can be identified), acceptability (cultural/social factors shaping services), appropriateness (e.g., interpersonal quality of services). Health care discrimination defines many health care access experiences of LGBTQ people (Kcomt, 2019; Ayhan et al., 2020). LGBTQ care-seekers, for example, frequently report service denial, verbal harassment, and encounters with providers who have limited LGBTQ health competence (Ayhan et al., 2020). This structural-level dimension directly reflects service acceptability and appropriateness but can also ultimately impact a care-seeker's ability to engage. To combat this and promote service appropriateness at the system-level, providers must focus on cultivating quality patient-provider relationships by communicating in a respectful and accessible manner (Dahm, 2012). These qualities increase information retention, comprehension, and the likelihood that a patient will choose the provider for continued care (Bittner et al., 2016). LGBTQ care-seekers who experience tentative relationships with providers can face hesitancies around open communication (Romanelli and Hudson, 2017; Sutherland, 2021) and difficulties finding or maintaining a usual place of care or regular provider (Lunn et al., 2017).

1.2.   Current study

While individual, validated measures of health literacy, help-seeking beliefs, barriers to care, health care discrimination, and patient-provider relationship quality have been included in the NHAS survey instrument, this study creates the foundation to develop and examine the multidimensional nature of health care access among LGBTQ midlife and older adults. Unique health and health care challenges lie at the intersection of gender, sexuality, and aging (e.g., chronic and cognitive conditions; health care discrimination; shortage of

affirmative providers). Yet, limited research accounts for the nuances of this intersection, instead applying broad approaches that do not assess and address LGBTQ midlife and older adults' access to and navigation of health systems. To address this gap, the current study: 1) introduces distinct dimensions of health care access among LGBTQ midlife and older adults; 2) demonstrates how multiple individual- and structural-level dimensions of health care access can be combined as a scale to evaluate the role of health care access among LGBTQ midlife and older adults, and 3) examines heterogeneity in experiences of health care access among LGBTQ midlife and older adults by sexual identity, current gender, gender identity, and age cohort. As with literature that has set precedent (e.g., Cornwell and Waite, 2009), we aim to capture health care access using multiple indicators and procedures of scale construction, but do not present the resulting tool as a definitive measure but rather as a foundational step in evaluating the use and impact of a multidimensional and reliable, yet parsimonious scale of health care access.

2. Methods

Data from the NHAS were used in the current analysis. Building upon the initial 2010 cross-sectional study, the longitudinal study was launched in 2014 to fill critical knowledge gaps and identify contextual and malleable factors that impact LGBTQ midlife and older adults' health. NHAS data collection is conducted biennially, and a comprehensive health care access module was developed and tested in 2015, an off year for the main NHAS survey data collection. Of the 2450 NHAS participants, 2322 completed the health care access module. The NHAS is a longitudinal examination of life-course experiences, health, aging, and well-being of LGBTQ midlife and older adults. All participants were born in 1964 or earlier, self-identified as LGBTQ, as someone with same-sex sexual behavior, attraction, or romantic relationships, or as gender diverse. A dual sampling frame was used to recruit participants; both nationwide agency listings and social network clustering chain referral were used, stratified by cohort, gender, race/ethnicity, and geographic location. Paper (n=888), online (n=1432), and phone (n=2) surveys were made available. Participants were paid $20 for survey completion. The research and study procedures were approved by the University of Washington Institutional Review Board, and consent was obtained from study participants. Detailed information related to recruitment procedures and the NHAS study design are published elsewhere (Fredriksen-Goldsen and Kim, 2017).

2.1. Measures

2.1.1. Health care access dimensions—Based on theory and past research (Fredriksen-Goldsen et al., 2014b; Levesque et al., 2013; Romanelli and Hudson, 2017), level of health literacy, help-seeking beliefs, barriers to care, health care discrimination, and patient-provider relationship quality were examined as dimensions representing health care access.

2.1.1.1. Health literacy: At the time of preparation for the initial NHAS survey in 2015, no health literacy scale for LGBTQ midlife and older adults existed. The study team created a new scale to measure eight domains of health literacy including ability to access, understand, and evaluate information relevant to health, ability to make informed decision

on health issues, interactive competence to gain information from healthcare providers, being proactive in one's own care, ability to find informal support on health decision and navigate healthcare system (Sørensen et al., 2012). NHAS participants were asked how difficult or easy it was for them to implement the eight items related to health literacy (see Table 1 for all items). Each item was measured using a 4-point Likert scale (range: very difficult (1) - very easy (4)). Table 1 displays each item average across the sample. Total mean scores were used to assist with an eased interpretation of the scale. The eight items were averaged and the mean health literacy score across participants was 3.10 (SD=0.53), meaning that the average response for the sample was close to "easy (3)." The alpha coefficient was 0.90.

2.1.1.2.   Help-seeking beliefs.: Three questions were modified from the National Comorbidity Survey Re-interview (NCS-2) to assess participants' help-seeking beliefs, i.e., their feelings about getting help for a personal problem. Participants responded to each of the three items on a different 4-point Likert scale (see Table 1 for each item and corresponding Likert scale). Across each item, higher numbers indicated beliefs facilitating access to care. Averaged together, on a scale of 1–4, the mean help-seeking beliefs experienced by participants was 3.30 (SD=0.60). The alpha coefficient was 0.70.

2.1.1.3.   Barriers to care.: Items measuring barriers to care were adapted from items used on the National Health Interview Survey (NHIS) and Health Retirement Study (HRS) and some specific to the experience of LGBTQ midlife and older adults were created. These items reflected both typical barriers for the general population (e.g., "The care I needed was not available in my area") and those created for LGBTQ midlife and older adults ("There was no LGBT friendly health care in my area"). All eight items asked of participants can be found on Table 1. Participants indicated how often they experienced the eight barriers in the past 12 months on a 4-point Likert scale (range: never (0) - always (3)). For purposes of the current study, these items were reverse scored, always (0) to never (3) (See Table 1 for individual item averages across the sample). This was completed so that when items of all domains were considered together higher scores indicated improved health care access. On a scale of 1–4, the mean barriers to care experienced by participants 3.70 (SD=0.41), i.e., responses to experiencing barriers fell between "sometimes (3)" and "never (4)," on average. The alpha coefficient was 0.80.

2.1.1.4.   Health care discrimination.: Five types of discrimination experienced over the past year (e.g., related to employment, housing, healthcare) based on participants' sexual or gender identity. These items were developed based on literature (e.g., D'Augelli and Grossman, 2001; Herek et al., 1997), review and evaluation of existing measures, focus group assessment, and psychometric analyses (Fredriksen-Goldsen and Kim, 2017). The items assessing health care discrimination, specifically, was used in the current study. Participants reported how many times in the past year they experienced this type of discrimination because they were, or were perceived to be lesbian, gay, bisexual, or transgender (range: never (0) – 3 or more times (3)). See Table 1 for indicator distribution across the sample.

2.1.1.5. Patient-provider relationship quality.: Four items were adapted from the Medical Expenditure Panel Survey (MEPS) to assess participants' patient-provider relationship quality (for all items, see Table 1). Using a 4-point Likert scale (range: never (1) – always (4)), participants indicated how often the four statements occurred in the past 12 months. The mean patient-provider relationship quality score across participants was 3.33 (SD=0.55), meaning that the average response for the sample was between the response options "usually (3)" and "always (4)". The alpha coefficient was 0.75.

2.1.2. Participant characteristics—Measures of sexual identity, current gender, gender identity, and age cohort were used to assess heterogeneity of health care access across the sample.

2.1.2.1. Sexual identity.: Participants were asked "Which of the following best represents how you currently think of yourself?" with options to respond as: 'Gay or lesbian'; 'Bisexual'; 'Straight, that is not gay, lesbian, or bisexual"; "Something else, please specify". Throughout the current study all participants who indicated a sexual identity under the umbrella of "something else" are identified as "sexually diverse." This identification reflects terminology suggested by the National Academies of Engineering, Sciences and Medicine (NAESM) (National Academies of Sciences, Engineering, & Medicine, 2020) that inclusively encompasses a variety of identities that do not align with heterosexual norms.

2.1.2.2. Current gender.: All participants were asked "Which of the following best represents how you currently think of your gender?" with options to respond as: 'Woman'; 'Man'; 'Something else, please specify'. Following the NAESM (National Academies of Sciences, Engineering, & Medicine, 2020), throughout the currently study all participants who indicated a gender under the umbrella of "something else" are identified as "gender diverse."

2.1.2.3. Gender identity.: Participants were identified as transgender or cisgender. Transgender participants were identified in four ways through the NHAS questionnaire: 1) those who identified themselves as transgender when asked: "Do you consider yourself to be trans/transgender"; 2) those who expressed discrepancies between their reported assigned sex at birth and their current gender; 3) those who wrote "transgender" in "Something else, please specify" when asked "Which of the following best represents how you currently think of yourself?", and; 4) those who answered an age when asked, "How old were you when you first considered yourself trans/transgender?"

2.1.2.4. Age cohort.: Participants were asked "What is your date of birth?" A three-level cohort variable—birth year 1950–1964; birth year 1935–1949; birth year 1916–1934—was created as research indicates different experiences across cohorts of midlife and older adults (Fredriksen-Goldsen et al., 2022; Foglia and Fredriksen-Goldsen, 2023; Fredriksen-Goldsen et al., 2022). The age of participants is calculated by using 2015 (survey year) minus birth year.

2.1.3. Descriptive participant characteristics—To understand additional characteristics of the sample, the following measures were also considered: Race/Ethnicity

(white; Hispanic; Black/African American; Other); SES (Living at or below 200 % federal poverty guidelines: yes or no (HHS, 2021)); Education (High School or less; Some college; Graduate or professional degree); Employment status (Currently employed full- or part-time in 2015: yes or no; Retired: yes or no); Partnership status (Married or partnered: yes or no); Living arrangement (*Living alone: yes or no*); Healthcare coverage (Any healthcare coverage in 2015: yes or no; Type of healthcare coverage in 2015: Both private and public; Private only; Public only; Other/-unclassified only; No insurance).

2.2. Analysis plan

Distribution of sample characteristics were estimated in Stata 17. Results are displayed in Table 2.

2.2.1. Scale construction—During the process of creating a parsimonious multidimensional health care access measure, the items of each dimension (described in Table 1) were included in an assessment of internal consistency using Stata 17. Along with the overall Cronbach's alpha coefficient (Cronbach, 1951), both inter-item and item-rest (also called adjusted item-total) correlation values were examined as part of the item reduction procedures (Boateng et al., 2018). Inter-item correlations indicate the strength of the relationship between each item, while item-rest correlations indicate the correlation between a particular item and the total score of the scale as calculated from the other items in the measure. Specific item reduction decisions were made based on theory, empirically-based cutoff values, and in discussion with co-authors (see Preliminary analysis section).

2.2.1.1. Preliminary analysis.: Scale validation for participants' experiences of health care access began with 24 items from the NHAS survey (see Table 1). These were initially tested in a scale with a Cronbach's alpha of 0.90. This initial test identified the item "How often have you felt that doctors or other health providers judged you unfairly or treated you with disrespect?" as a weak contributor to the measure with an item-rest (or adjusted item-total) correlation value of 0.26. This indicated this item may not be correlated with the total score of the scale as calculated from the other 23 items (Boateng et al., 2018) while all additional items were moderate to strong contributors to the measure with item-rest correlation values ranging from 0.33 to 0.71. Internal consistency reliability was acceptable with an average inter-item correlation of 0.28. While the average inter-item correlation fell within acceptable range, individual inter-item correlations should also be evaluated (Clark and Watson, 2019) as lower correlations (i.e., below 0.15) may indicate the items are unrelated or too broad (Clark and Watson, 2019) and a pattern of high correlation values may indicate item redundancy (Rockwell, 1975). An evaluation of the individual inter-item correlations, in combination with author discussions surrounding the theoretical contribution of items, resulted in the removal of the following items: "I didn't have transportation" (low inter-item correlation values); "Use information from your doctor to make decisions about your health problems" (pattern of high inter-item correlation values, i.e., single value over 0.7 and three values over 0.6); "If you had a personal problem, would you get professional help?" (low inter-item correlation values); "How embarrassed would you be if your friends knew you were getting professional help for a personal problem?" (low inter-item correlation values). A final 19 items were considered for the final scales,

which underwent a similar evaluation process. See Results (Section 3) for description of findings.

2.2.2. Confirmatory factor analysis—Confirmatory Factor Analysis (CFA) was subsequently applied using a WLSMV estimator for categorical indicators via Mplus (v.8). The goal of our CFA was to identify items that share a common factor and understand the underlying structure of health care access. CFA was used given the *a priori* hypothesized dimensions of health care access derived from theory and previous development of and findings from the NHAS survey (Kline, 2015). A variety of global fit indices were used, per the recommendations of Bollen and Long (Bollen and Long, 1993). These included absolute fit indices, relative fit indices, and fit indices with a penalty function for lack of parsimony. To declare satisfactory fit the Root Mean Square Error of Approximation (RMSEA; which should be less than 0.08), the Comparative Fit Index (CFI; which should be greater than 0.95), and the standardized root mean square residual (SRMR; which should be less than 0.08) were examined. The traditional overall chi square test of model fit (which should be statistically non-significant) was also considered. However, chi square test are sensitive to sample size (e.g., N > 250) (Jaccard, 2015). Given the large sample size of NHAS, it was expected that this test statistic would be significant and should not serve as an indicator of poor model fit (Bentler and Yuan, 1999).

2.2.3. Differences in health care access across sexual identity, current gender, gender identity, and age cohort—Retained items were used to calculate a score of health care access. All items were scored in the same direction, with higher scores indicating improved health care access. Each item was standardized due to different Likert ranges on individual instruments and a total score for health care access for each participant was calculated by averaging standardized items together. In the calculation, positive scores indicate greater-than-average access, negative scores indicate lower-than-average access, and a score of zero indicates the mean response for each item. The distribution of this score was examined across different participant characteristics, including sexual identity, current gender, gender identity, and age cohort. Differences in mean scores were examined using F-tests.

3. Results

Five dimensions measuring overall level of health care access were assessed: 1) indicators of NHAS participants' degree of health literacy; 2) help-seeking beliefs; 3) experiences with barriers to care; 4) encounters of health care discrimination, and; 5) level of, patient-provider relationship quality. Twenty-four items from the NHAS survey were initially identified for inclusion, and 19 items retained. Detailed summary information for all considered items is displayed in Table 1.

3.1. Scale reliability

The final 19 items found a Cronbach's alpha of 0.90 and acceptable internal consistency reliability with an average inter-item correlation of 0.31. Far fewer individual inter-item correlations below 0.15 and patterns of highly correlated items remained with the final

items. Items that were retained with these properties were evaluated by the research team as theoretically valuable, e.g., "There was no LGBT friendly health care in my area" (low inter-item correlation values) and "How often did doctors or other health providers show respect for what you had to say?" (pattern of high inter-item correlation values). Each item was a moderate to strong contributor to the measure with item-rest correlation values ranging from 0.35 to 0.71 (see Table 3).

3.2. Confirmatory factor analysis

Confirmatory factor analysis (CFA) was applied to the 19 final items identified through scale reliability procedures. There were minimal missing data, 4.9 % at maximum value, which were handled using FIML. The model displayed good fit (CFI=0.97; SRMR=0.05; RMSEA=0.07). Although the Chi-Square Goodness of Fit Test was significant (Chi-Square=1658.54, df: 149, p 0.001) for large samples this test statistic is almost always significant and does not serve as an indicator of poor model fit (Bentler and Yuan, 1999; Jaccard, 2017).

A unidimensional scale was tested (see Equivalent Models, Section 3.2.1), however, it was assessed and decided *a priori* that remaining 19 items would likely load within interrelated dimensions, health literacy, barriers to care, patient-provider relationship quality representative of a higher order health care access factor. The single item remaining after examining reliability from the help-seeking dimension ("How comfortable would you feel talking about personal problems with a professional?") was hypothesized to have patient-provider relationship qualities and therefore, was tested on that factor. The single health care discrimination item was theoretically similar to those representing barriers to care; experienced and anticipated health care discrimination are also evidenced as major barriers to care among LGBTQ care-seekers.

Data supported this hypothesized three-factor structure of health care access: health literacy, barriers to care, patient-provider relationship quality. Seven items representing health literacy loaded onto a factor, eight items representing barriers to care loaded onto a second factor, and four final items loaded onto a factor representing patient-provider relationship quality. A higher order factor structure unified the multiple dimensions under the common higher-level factor of health care access. Majority of the items showed strong loadings on its corresponding dimension. The indicators explained 26–85 % of the variance of health care access dimensions. These theorized dimensions of health literacy, barriers to care, and patient-provider relationship quality explained 50–85 % of the variance of health care access (see Table 4 for all standardized coefficients and R^2 values).

3.2.1. Equivalent models—Although it was expected that indicators would load on separate factors, literature recognizes that apart from the model tested in a given study, there may be equivalent models that can account for the data. Testing equivalent models can also help avoid confirmatory bias in structural equation modeling (SEM) (MacCallum and Austin, 2000). A single factor model (unidimensional model) was also tested; however, the data displayed poor model fit (CFI=0.91; SRMR=0.09; RMSEA=0.12) and some low factor

loadings were observed; this model did not accurately account for the data relative to the multidimensional model.

3.3. Heterogeneity in health care access across NHAS participants: sexual identity, current gender, gender identity, and age cohort

Differences in mean health care access scores were examined across NHAS participants' sexual identity, current gender, gender identity, and age cohort (see Table 5). Standardized items were used and averaged. Positive scores indicate experiencing greater-than-average health care access and negative scores indicate lower-than-average health care access. A score of zero indicates the mean response for each item. Across sexual identity groups, relative to lesbian and gay participants (M= 0.03, SD=0.57), all other sexual orientation groups had significantly lower health care access scores, including bisexual participants (M= −0.13, SD=0.65, p 0.001), straight participants (M= −0.39, SD=0.66, p 0.001), and sexually diverse participants (M= −0.36, SD=0.70, p 0.001). When changing comparison groups to give the full perspective of heterogeneity in health care access experiences, additional differences are identified among sexual identity subgroups. Straight (p=0.025) and sexually diverse participants (p=0.002) had significantly lower health care access scores compared to bisexual participants, but no score differences were observed between straight and sexually diverse participants (comparisons not displayed in Table 5). Men reported close to average levels of health care access (M= 0.05, SD=0.58), while in comparison both women (M= −0.05, SD=0.59) and gender diverse participants (M= −0.38, SD=0.79) had significantly lower health care access scores (p 0.001 and p 0.001, respectively). Changing reference groups reveals differences between women and gender diverse participants. Gender diverse participants also had significantly lower health care access scores relative to women (p 0.001; comparison not displayed in Table 5). Compared to cisgender respondents (M= −0.03, SD=0.57), transgender respondents (M= −0.34, SD=0.74) had significantly lower health care access scores (p 0.001). Examining age cohort differences, compared to those midlife, age 51–65 (M= −0.10, SD=0.65), both older age groups had significantly higher health care access scores: ages 66–80 (M= 0.08, SD=0.53, p 0.001) and ages 81+ (M= 0.06, SD=0.49, p 0.001). No significant difference in health care access scores were observed comparing the midlife and older age cohorts to each other.

4. Discussion

Extant research has identified LGBTQ midlife and older adults as a health disparity population in need of improved access to care (Fredriksen-Goldsen et al., 2014a; Fredriksen-Goldsen et al., 2014b; Romanelli and Hudson, 2017). Health care access is complex, and multidimensional measures are needed to reflect this dynamic concept. Therefore, the current study used data from NHAS, the first national, longitudinal study examining the health of LGBTQ midlife and older adults, to develop a culturally relevant and multidimensional assessment tool to evaluate health care access among LGBTQ midlife and older adults. Indicators representative of the experiences of LGBTQ midlife and older adults and the multiple domains impacting their health care access were included to develop a comprehensive and reliable, yet parsimonious scale that can be integrated into and built upon in future research studies.

The CFA provided detailed evidence for the underlying structure of the observed indicators. Importantly, findings indicated that health care access was multidimensional among the LGBTQ midlife and older adults of NHAS. Indeed, their experiences were best explained by three-factors—degree of health literacy, barriers to care, and patient-provider relationship quality—structured within a higher order factor model of health care access. Overall, many of the questions asked of participants, and that remained in the final scale, align with the concept that health care access results from the interaction between characteristics of the care-seeker (e.g., health-literacy; help-seeking beliefs, trust) and characteristics of services and providers (e.g., service visibility/outreach; service geographic location; service cost; provider's technical and interpersonal qualities; provision of non-discriminatory care) (Levesque et al., 2013; Romanelli and Hudson, 2017). Most of the indicators that loaded onto the barriers to care factor, including those related to limited availability of LGBTQ-affirmative providers (Kattari et al., 2020b; Lerner and Robles, 2017; Romanelli and Hudson, 2017), not knowing where to go (Romanelli and Hudson, 2017), delayed care (Romanelli et al., 2018), and financial concerns (Lerner and Robles, 2017; Tabaac et al., 2020; Fredriksen-Goldsen et al., 2022), have been identified in past research as primary factors impeding LGBTQ care-seeker's access to care. Of significance, the indicator assessing experiences of past 12-month health care discrimination is unique (in wording and scaling) relative to the other barriers to care items. However, this indicator fit well, and substantively, health care discrimination is highly prevalent among LGBTQ care-seekers (Katz-Wise and Hyde, 2012; Kcomt, 2019; Romanelli and Lindsey, 2020) and a widely evidenced barrier to care (Casey et al., 2019; Kcomt et al., 2020; Lerner and Robles, 2017; Romanelli et al., 2018). Seven items loaded onto a factor representing health care literacy. Each of the seven items included assess the participants' motivation and cognitive, social, and functional (e.g., reading) abilities (Sørensen et al., 2012). Collectively the seven items reflected the concept of the participants' abilities to find, understand, and use health information/services to inform their health decisions and actions (HHS, 2022). This domain is essential to the NHAS study given the association between health literacy and health and health care outcomes (Berkman et al., 2011), and the potential impact of aging to health literacy levels over time (Sørensen et al., 2012; Chesser et al., 2016). Changes to cognition (comprehension and recall), hearing, vision, socioeconomic status, and social networks, for example, can influence how some adults understand health information and communicate with their providers (Chesser et al., 2016). Further, among trans midlife and older adults particularly, exposure to health care discrimination has been connected to their heightened risk for subjective cognitive decline (Lambrou et al., 2022). Finally, the four remaining items loaded onto a factor representing patient-provider relationship quality. These indicators reflected a provider's level of patient-centered communication and care and the participant's level of comfort communicating openly with their providers. Enhancing this dimension is essential as LGBTQ care-seekers who experience tentative relationships with their providers may face difficulties finding or maintaining a usual place of care or regular provider (Lunn et al., 2017). LGBTQ subgroups such as bisexual adults (Ward et al., 2014) and LGBTQ communities of color (Macapagal et al., 2016) are significantly less likely to have a usual place of care which diminishes patient-provider rapport, trust, and satisfaction (Saultz and Albedaiwi, 2004; Filice and Meyer, 2018) and treatment expectancies (Kcomt et al., 2020).

Heterogeneity in health care access scores was identified across sexual identity, gender identity, gender, and age cohort among NHAS participants. Specifically, results showed that bisexual, straight, sexually diverse participants (relative to lesbian or gay participants), transgender participants (relative to cisgender participants), and women and gender diverse participants (relative to men) faced more difficulties when accessing care. These results complement past research in consideration of the dimensions that compose the health care access scale. For example, compared to cisgender peers, transgender care-seekers report more barriers related to service availability (Romanelli and Hudson, 2017), which may result is higher rates of unmet need (Giblon and Bauer, 2017) and delayed care. Some research has found that LGB women experience more frequent and varied forms of health care discrimination compared to GB men (see Eliason et al., 2018). Besides this level of protection afforded men, an alternative explanation for increased access scores among men may be this population's history with and increased risk for HIV infection (GB men account for 67 % of new HIV diagnoses and 55 % of people living with HIV in the United States (Centers for Disease Control and Prevention, 2022), which can result in connections to health care for testing or treatment, enhanced knowledge of health care needs, and system navigation. Indeed, gay men are often likely to have a usual place of care (Lunn et al., 2017) and researchers have hypothesized that the HIV epidemic may have catalyzed the maintained connection to regular providers among this community (Heck et al., 2006). Avoidance of discriminatory care may lead to preference for treatment receipt from LGBTQ-specific services (Matsuzaka et al., 2021), with 15 % of LGBTQ midlife and older adults reporting fear of services outside of the LGBTQ communities (Fredriksen-Goldsen et al., 2011). Yet, LGBTQ-specific services may not be readily accessible for all care-seekers, especially depending on their geographic location (Martos et al., 2017; Hudson, 2018; White Hughto et al., 2016) and some research has shown that bisexual and transgender care-seekers may feel like outsiders even within these settings due to intra-group stigma (Matsuzaka et al., 2021). These types of barriers may have contributed to bisexual, sexually diverse, straight, and transgender respondents reporting lower health care access scores relative to comparison groups—LG and cisgender participants, respectively. Future research may consider examining the relative contribution of each domain to the overall health care access score. Interestingly, the oldest age cohort (81+) experienced significantly higher health care access scores relative to the youngest cohort (51–65). In prior literature the former cohort has been identified as the "Invisible Generation," and the latter the "Pride Generation." Distinct historical and social forces in the US have shaped these cohorts. Because of restricted outness, the Invisible Generation often experiences lower levels of discrimination (Fredriksen Goldsen et al., 2022; Fredriksen-Goldsen et al., 2023; Fredriksen-Goldsen et al., 2022). Minimizing LGBTQ identity disclosure may afford members of the Invisible Generation increased access to care. However, this generation may not be offered care tailored to their needs. This finding may also reflect the possibility that those who have greatest access to care are most likely to survive to advanced age.

The creation of the health care access scale generates several opportunities for use in future research. Using this combination of items provides a more concise, but also multidimensional and reliable way to assess NHAS participants' level of health care access. In the immediate, creating a parsimonious measure is an important process for the NHAS as

the study conducts multiple waves of data collection and continually develops new survey modules responsive to emerging LGBTQ, aging, and health issues (e.g., Covid-19). This process ensures the integrity of core constructs such as health care access and reduces burden for NHAS participants by maintaining (or shortening) the survey length. While the comprehensive, yet succinct scale will provide a multidimensional and standardized approach to assessing health care access for LGBTQ midlife and older adults in the US, it may not translate to this demographic worldwide. Wider dissemination requires consideration of the diverse social contexts, cultural influences, and health systems that impact health care access among global populations of LGBTQ midlife and older adults (Fredriksen-Goldsen and de Vries, 2019; Fredriksen-Goldsen, 2017). Steps to identify new or adapt existing health care access, gender, sexuality, and aging frameworks and constructs for relevance or equivalence may be necessary prior to testing the measure within new cultural contexts. However, scholars have recently underscored global health's epistemic position of hetero-cis-normativity as a dangerous social determinant of health perpetuating the exclusion and under-representation of global LGBTQ experiences and maintaining dominance of Western frameworks within global health scholarship (Pillay et al., 2022). Emerging from the 2017 World Congress, and led by NHAS investigators, the Global Pride Project explores LGBTQ health and well-being across diverse global contexts by centering the expertise of an international network of researchers and community partners (Fredriksen-Goldsen and de Vries, 2019). The Global Pride Network may support broadened efforts to examine and measure multidimensional health care access among LGBTQ midlife and older adults around the world.

Examination of the items dropped from the scale during the item reduction process provides the opportunity for scale refinement in future research. For example, while the scale maintained one item describing health care discrimination, another was dropped. Health care discrimination, however, is not only reported at high rates among LGBTQ care-seekers, but often cited as a primary factor influencing health care decisions. Further, there are a complexity of types of discriminatory health care encounters that might be experienced by LGBTQ care-seekers, for example, occurring in patterns of overt discrimination, interactions rooted in limitations in the provider's competencies (Romanelli and Lindsey, 2020), and implicit biases (Foglia and Fredriksen-Goldsen, 2014). Given the prevalent and profound experiences of health care discrimination among LGBTQ midlife and older adults (Fredriksen-Goldsen et al., 2011, 2014a; Kcomt, 2019), future research should work to expand reliable items for this dimension, as well as understand correlation with other access dimensions. It may also be beneficial to examine potential emerging domains missing from the current scale. The use of digital technologies to access health information and health care, for example, is rapidly expanding and research show that LGB adults aged 50 and older are two times more likely to use health information technology to access care (e.g., health information; fill prescriptions; patient-provider communication) than their heterosexual peers (Lee et al., 2017). Though this delivery format has potential for broadening service access to care, extant research has also found that some older adults face difficulties with aspects of electronic health literacy that prevent them from effectively communicating with providers online and evaluating health information retrieved from the internet (Jung et al., 2022; Xie et al., 2022). Next, while NHAS asks respondents to evaluate

subjective availability of services through the barriers to care measure, measures of objective availability consider spatial availability of services through geographic information systems (GIS) methods. While these methods provided important information related to service availability (e.g., LGBTQ-specific services are objectively concentrated within urban hubs and coastal states (Martos et al., 2017)), spatial and non-spatial dimensions are only just beginning to be integrated together into single measures of health care access (Tang et al., 2017). This could be an important future step to add to the holistic, multidimensional understanding of health care access for LGBTQ midlife and older adults. The development of new methods promoting remote and virtual health care access for underserved LGBTQ midlife and older adults in rural setting is also needed

Finally, due to the longitudinal nature of NHAS, future research could use the scale to assess changes in access over the life-course, in relation to relevant variables of the HEPM such as race/ethnicity, health insurance status, socioeconomic status, geographic location, and social networks, and other health promoting factors as predictors of health outcomes. Here, we must consider that current analyses relied on data obtained through self-report measures, but future research may combine these survey data with objective health access and health outcome measures through accessing electronic health records.

5.   Conclusion

Using the multidimensional health access scale in future research will move us closer to promoting health equity among LGBTQ midlife and older adults. Optimal access to health care is crucial to eliminate health disparities among LGBTQ midlife and older adults. Developing and employing a culturally relevant assessment tool, taking into account the multidimensional nature of health care access, is essential to gain a deeper understanding of obstacles that LGBTQ midlife and older adults face as well as the health promoting resources they need within their health system to reach their full health potential.

Funding

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Table 1

Summary Statistics for Indicators of Access to Care Collected in NHAS.

Indicator	M	SD	n
Dimension: Health Literacy (How easy or difficulty is it for you to…) [a]			
1. Find information on health issues that concern you, such as health screening, certain illnesses, or treatments.	3.23	0.65	2295
2. Understand what your doctor says to you.	3.31	0.59	2288
3. Judge the quality of information about health and illness from different sources	2.95	0.70	2291
4. Use information from your doctor to make decisions about your health problems.	3.20	0.62	2296
5. Get the information you need when seeing a doctor.	3.20	0.65	2288
6. Request a second opinion about your health from a healthcare professional.	2.82	0.80	2240
7. Ask family or friends for help to understand health information.	3.00	0.82	2268
8. Make sure you find the right place to get the healthcare you need.	3.12	0.75	2274
Total Mean Score: Health Literacy	*3.10*	*0.53*	*2303*
Dimension: Help-Seeking Beliefs			
1. If you had a personal problem, would you get professional help?[e]	3.24	0.75	2302
2. How comfortable would you feel talking about personal problems with a professional?[f]	3.37	0.72	2303
3. How embarrassed would you be if your friends knew you were getting professional help for a personal problem?[g]	3.29	0.82	2307
Total Mean Score: Help Seeking Beliefs	*3.30*	*0.60*	*2309*
Dimension: Barriers to Health Care [b]			
1. There was a time I didn't trust or believe in doctors.	3.55	0.66	2284
2. There was no LGBT friendly health care in my area.	3.63	0.78	2269
3. I didn't know where to go.	3.76	0.60	2273
4. The care I needed was not available in my area.	3.78	0.60	2266
5. I didn't have transportation.	3.80	0.59	2277
6. I put it off even though I was sick or needed advice about my health.	3.57	0.63	2281
7. I needed medical care, but did not get it because I couldn't afford it.	3.75	0.59	2283
8. I ended up taking less medication than was prescribed for me because of the cost.	3.81	0.51	2279
Total Mean Score: Barriers to Health Care	*3.70*	*0.41*	*2299*
Dimension: Health Care Discrimination (How many times during the past 12 months have you experienced the following negative events because you are, or were thought to be LGBT?) [c]			
1. I was denied or provided inferior health care.	2.89	0.44	2286
Dimension: Patient-Provider Relationship Quality (In the past 12 months…) [d]			
1. How often did doctors or other health providers explain things in a way that was easy to understand?	3.30	0.69	2295
2. How often did doctors or other health providers show respect for what you had to say?	3.35	0.71	2293
3. How often did doctors or other health providers spend enough time with you?	3.08	0.78	2290
4. How often have you felt that doctors or other health providers judged you unfairly or treated you with disrespect? (reverse scored to align)	3.58	0.74	2293
Total Mean Score: Patient-Provider Relationship Quality	*3.33*	*0.55*	*2298*

[a] 1=very difficult; 2=difficult; 3=easy; 4=very easy

[b] 1= always; 2= usually; 3= sometimes; 4= never (reverse scored from survey)

[c] 0= 3 or more times; 1= twice; 2= once; 3= never

[d]1= never; 2= sometimes; 3= usually; 4= always

[e]1= definitely would not; 2= probably would not; 3= probably would; 4= definitely would (reverse scored from survey)

[f]1= not at all comfortable; 2= not very comfortable; 3= somewhat comfortable; 4= very comfortable (reverse scored from survey)

[g]1=very embarrassed; 2=somewhat embarrassed; 3=not very embarrassed; 4=not at all embarrassed

Table 2

Characteristics of 2015 NHAS Participants.

Characteristics	Respondents n (%)
Sexual Identity	
Gay or Lesbian	1996 (86.0)
Bisexual	199 (8.6)
Straight	28 (1.2)
Sexually Diverse	90 (3.9)
Current Gender	
Woman	956 (41.2)
Man	1291 (55.6)
Gender Diverse	59 (2.5)
Gender Identity	
Cisgender	2134 (91.9)
Transgender	180 (7.8)
Age Cohort	
51–65 (Pride Generation: birth year 1950–1964)	1041 (44.8)
66–80 (Silenced Generation: birth year 1935–1949)	1104 (47.6)
81+ (Invisible Generation: birth year 1916–1934)	177 (7.6)
Race/Ethnicity	
White	1799 (77.5)
Hispanic	176 (7.6)
Black/African American	196 (8.5)
Other	144 (6.2)
SES	
Living at or below 200 % federal poverty guidelines (yes)	822 (35.4)
Education	
High School or less	199 (8.6)
Some college	1047 (45.1)
Graduate or professional degree	1070 (46.1)
Employment Status	
Currently employed full- or part-time (yes)	855 (36.8)
Retired (yes)	1443 (62.1)
Partnership Status	
Married or partnered (yes)	1035 (44.6)
Living arrangements	
Living alone (yes)	1224 (52.7)
Healthcare coverage	
Any healthcare coverage (yes)	2261 (97.4)
Type of healthcare coverage	
Both public and private	784 (33.4)
Private only	612 (26.4)

Characteristics	Respondents n (%)
Public only	842 (36.3)
Other/unclassified only	23 (1.0)
No insurance	43 (1.9)
N=2322	

Table 3

Reliability of the Health Care Access Scale.

Indicator	Item-Rest Correlations
1. Find information on health issues that concern you, such as health screening, certain illnesses, or treatments.	0.62
2. Understand what your doctor says to you.	0.62
3. Judge the quality of information about health and illness from different sources	0.58
4. Get the information you need when seeing a doctor.	0.71
5. Request a second opinion about your health from a healthcare professional.	0.58
6. Ask family or friends for help to understand health information.	0.45
7. Make sure you find the right place to get the healthcare you need.	0.70
8. There was a time I didn't trust or believe in doctors.	0.46
9. How often did doctors or other health providers show respect for what you had to say?	0.65
10. How often did doctors or other health providers spend enough time with you?	0.61
11. How comfortable would you feel talking about personal problems with a professional?	0.38
12. There was no LGBT friendly health care in my area.	0.35
13. I didn't know where to go.	0.45
14. The care I needed was not available in my area.	0.40
15. I put it off even though I was sick or needed advice about my health.	0.53
16. I needed medical care, but did not get it because I couldn't afford it.	0.50
17. I ended up taking less medication than was prescribed for me because of the cost.	0.40
18. I was denied or provided inferior health care.	0.35
19. How often did doctors or other health providers explain things in a way that was easy to understand?	0.61
Cronbach's alpha for scale	0.90

Table 4

Standardized CFA Coefficients.

Indicator	b [a]	R^2
First Order Factor: Health Literacy		
Find information on health issues that concern you, such as health screening, certain illnesses, or treatments	0.79	0.63
Understand what your doctor says to you.	0.84	0.71
Judge the quality of information about health and illness from different sources	0.78	0.62
Get the information you need when seeing a doctor.	0.91	0.82
Request a second opinion about your health from a healthcare professional.	0.73	0.54
Ask family or friends for help to understand health information.	0.58	0.33
Make sure you find the right place to get the healthcare you need.	0.86	0.73
First Order Factor: Barriers to Health Care		
There was a time I didn't trust or believe in doctors.	0.72	0.51
There was no LGBT friendly health care in my area.	0.59	0.35
I didn't know where to go.	0.77	0.60
The care I needed was not available in my area.	0.73	0.53
I put it off even though I was sick or needed advice about my health.	0.77	0.59
I needed medical care, but did not get it because I couldn't afford it.	0.81	0.65
I ended up taking less medication than was prescribed for me because of the cost.	0.69	0.47
I was denied or provided inferior health care.	0.74	0.55
First Order Factor: Patient-Provider Relationship Quality		
How often did doctors or other health providers explain things in a way that was easy to understand?	0.86	0.74
How often did doctors or other health providers show respect for what you had to say?	0.92	0.85
How often did doctors or other health providers spend enough time with you?	0.86	0.74
How comfortable would you feel talking about personal problems with a professional?	0.51	0.26
Second Order Factor: Health Care Access		
Health Literacy	0.92	0.85
Barriers to Care	0.71	0.50
Patient-Provider Relationship Quality	0.88	0.77
Model Fit	Value	
CFI	0.97	
SRMR	0.05	
RMSEA	0.07	

Table 5

Distribution across Sexual Identity, Current Gender, Gender Identity, and Age Cohort.

Characteristic	Access to Care		
	M	*SD*	*p*
Overall Sample	−0.001	0.60	
Sexual Identity			
Lesbian or Gay	0.03	0.57	ref
Bisexual	−0.13	0.65	0.001
Straight	−0.39	0.66	0.001
Sexually Diverse	−0.36	0.70	0.001
Gender			
Man	0.05	0.58	ref
Woman	−0.05	0.59	0.001
Gender Diverse	−0.38	0.79	0.001
Gender Identity			
Cisgender	0.03	0.57	ref
Transgender	−0.34	0.74	0.001
Age Cohort			
51–65	−0.10	0.65	ref
66–80	0.08	0.53	0.001
81+	0.06	0.49	0.001