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Assessing the Social Determinants of Health Needs of Older LGBT People in the Greater Miami Valley of Ohio

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Abstract

Background: While the older LGBT population continues to grow, they remain an underserved, invisible, and under-researched segment of the population. They experience many of the same risk and protective factors of all older adults, but discrimination is one social determinant of health that is quite prevalent among this community, causing lasting impacts on health.

Objective: The purpose of this study was to assess the social determinants of health issues and needs of the aging LGBT population in Dayton, Ohio, in order to direct advocacy strategies and better targeting of local support efforts.

Methods: Data were collected through a cross-sectional survey created through community collaboration. The data were analyzed using descriptive statistics for demographics and chi-square analyses to examine associations between LGBT-friendliness, housing, legal documentation and demographic characteristics.

Results: The data suggests that subgroups of the LGBT population have variable experiences with social determinants of health and discrimination. Transgender, bisexual, and other (asexual, pansexual, queer) individuals perceived various establishments as being less LGBT-friendly and were more likely to feel the need to hide their gender or sexual identities than their gay and lesbian, and male and female counterparts. Yet, transgender and bisexual individuals are usually the least researched subgroups, while our study suggests they face greater discrimination in various healthcare and aging establishments.

Conclusions: While Dayton is currently an LGBT-friendly city, improvements in LGBT-friendliness of healthcare establishments and housing should be priorities going forward, in order to improve the overall health of our aging LGBT population.

Keywords: LGBT-friendly, sexual orientation, gender identity, aging, discrimination

Assessing the Social Determinants of Health Needs of Older LGBT People in the Greater Miami Valley of Ohio

There are approximately 2.7 million adults aged 50 and older that identify as LGBT currently in the United States, with 1.1 million of those individuals being aged 65 and older (Fredriksen-Goldsen, 2016; Fredriksen-Goldsen & Hyun-Jun, 2017; Yarns, Abrams, Meeks, & Sewell, 2016). This population is expected to grow, and by 2060, the number of LGBT older adults over the age of 50 is estimated to reach over five million (Fredriksen-Goldsen & Hyun-Jun, 2017). The LGBT older population has grown yet remains a largely underserved, invisible, and under-researched segment of the population (Fredriksen-Goldsen, 2016; Fredriksen-Goldsen & Hyun-Jun, 2017).

While LGBT older adults have many of the same risk and protective factors as the general older population, they also experience unique challenges due to the discrimination and marginalization they have experienced because of their sexual and gender identities (Fredriksen-Goldsen, 2016). This is due in part to the fact that this population grew up in a time when same-sex behavior and gender nonconformity were not only stigmatized, but also criminalized (Fredriksen-Goldsen & Hyun-Jun, 2017), leading many older LGBT adults to feel the need to hide their sexual orientation and gender identity (Rowan & Beyer, 2017). The discrimination experienced by LGBT older adults can have a physiological effect, which when compounded over time can lead to negative health outcomes (Healthy People 2020, 2019).

The 50 and older age group can be subdivided into three ‘generations’ that had different experiences in response to their sexual and gender minority status (Fredriksen-Goldsen & Hyun-Jun, 2017; Yarns et al., 2016). The ‘Invisible Generation’ lived during the Great Depression and World War II, which were both situations of great societal importance, overshadowing public

discourse about sexual and gender minorities. The ‘Silenced Generation’ (born between 1926 and 1945) experienced public anti-gay sentiments with the classification of homosexuality as a sociopathic personality disorder and many federal workplaces firing employees who identified as gay or lesbian. The ‘Pride Generation’ (born between 1946 and 1950) experienced social change resulting from civil rights and women’s rights movements, the Stonewall riots, declassification of homosexuality as a mental disorder and decriminalization of sodomy laws (Fredriksen-Goldsen & Hyun-Jun, 2017; Yarns et al., 2016).

In addition to the higher rates of discrimination and victimization that the older LGBT population experiences, they also experience a variety of other physical and mental health issues at higher rates than their non-LGBT counterparts (Yarns et al., 2016). Despite all of this, 89% of this population has positive associations with belonging to the LGBT community (Fredriksen-Goldsen et al., 2011).

Even though this population has been excluded from research in the past, studies are now being done on the health issues and disparities of this population all over the country. Reasons for excluding them in the past, such as the questions might not be easily understood or the topics might be too sensitive, are being shown to be false, and the importance of learning more about this population is finally outweighing the obstacles (Fredriksen-Goldsen & Hyun-Jun, 2017).

Dayton, Ohio scored a 100 on the 2018 Municipal Equality Index Scorecard (Human Rights Campaign Foundation, 2018), which is the highest possible score a municipality can achieve. This score is based on the city’s LGBT-friendliness in multiple categories such as non-discrimination laws, employment, services, law enforcement and leadership. There is still room to grow, but local organizations are seeking to learn more about Dayton’s specific LGBT health needs in order to create programs and properly allocate funding in the future. As one anonymous

gay man recently said “The LGBT community has stepped up in the past to address coming out, AIDS, and civil rights. The next wave has to be aging” (Fredriksen-Goldsen et al., 2011, p. 1).

Statement of Purpose

The purpose of this study was to assess the social determinants of health issues and needs of the aging LGBT population in the greater Dayton, Ohio area. Due to the absence of studies comparing and contrasting the social determinants of health across LGBT age groups, the questionnaire was opened to LGBT people of all ages. The first research goal was to more precisely define LGBT social determinants of health by using an intersectionality perspective that examines similarities and differences across subgroups of the LGBT population in the target area. The second research goal was to identify disparities in the local community. The results of this study will be used to direct advocacy strategies to maximize impact, as well as allow for better targeting of local support efforts, increasing awareness, and procuring funding for additional services, as needed.

Review of Literature

While research on the older LGBT population is increasing, there has historically been a shortage of knowledge about this population. Research tends to focus on the LGBT community as a whole, or on gay men and lesbian women, with less known about bisexual and transgender individuals (Choi & Meyer, 2016). Much of the current knowledge on the older LGBT population comes from research done by Karen I. Fredriksen-Goldsen and research and summary reports made by Soon Kyu Choi and Ilan H. Meyer. One particular social determinant of health that is especially prevalent for the LGBT population is discrimination. As more attention is given to studying the social determinants and health outcomes of this population, it will become clearer

as to their specific risk factors and this will lead the way to developing more programs and policies to help older LGBT individuals lead healthier lives.

Discrimination as a Social Determinant of Health

Discrimination can be defined as a "socially structured action that is unfair or unjustified and harms individuals and groups" (Healthy People 2020, 2019, p. 1). While discrimination is not uncommon for many groups of individuals, LGBT individuals experience it at a very high rate, with 82% having been victimized at least once in their life (Fredriksen-Goldsen et al., 2011). Research has suggested that repeated experiences of discrimination can cause the body to be more sensitive to stressful situations, increasing susceptibility to illness. Also, the fear of discrimination can lead to elevated rates of detrimental health behaviors such as smoking or alcohol abuse, or not participating in beneficial health-promoting behaviors, such as cancer screening or condom use (Healthy People 2020, 2019).

Discrimination in income. Many LGBT older adults are at an additional disadvantage compared to their heterosexual counterparts due to the lifetime disparities they experience in employment, income and the opportunities to build savings throughout their life (Choi & Meyer, 2016). Many LGBT older adults do not have incomes that correctly align with their education level due to discrimination in the workplace (Fredriksen-Goldsen, 2016), with transgender adults usually facing the greatest financial hardships (Yarns et al., 2016). In addition to income disparities, LGBT older adults often experience disparities and discrimination in accessing legal and social programs due to problems recognizing legal partnerships (Choi & Meyer, 2016). One major consequence of having a lower income is the increase in difficulty of getting appropriate health care as compared with the general population (Yarns et al., 2016).

While many LGBT older adults are at a disadvantage when it comes to income, the same does not seem to be the case for education level. According to the national 'Maintaining Dignity' study conducted by AARP (2018), 21% of participants had a master's/graduate degree or greater, 49% had either an associate's or bachelor's degree, and 29% had a high school diploma, GED, or had gone to trade or technical school.

Discrimination in housing and legal services. A big fear about getting older for LGBT individuals is finding LGBT-friendly housing. Choi and Meyer (2016) present numerous studies that demonstrate LGBT individuals receive differential treatment when trying to find housing, such as less housing availability and higher pricing when searching for retirement homes, as compared to their non-LGBT peers. One study conducted by the Fair Housing Center of Southeastern Michigan (2007) found that 26% of rental homes treated same-sex couples differently by asking for higher rent or denying applications (Choi & Meyer, 2016). Another study done by Grant, Mottett, Tanis, Herman, and Keisling (2011) showed that 19% of transgender older adults were refused homes, and 11% had been evicted due to their gender identity or expression (Choi & Meyer, 2016). A third study conducted by Johnson, Jackson, Arnette, and Koffman (2005) showed that nearly 75% of older LGBT adults believe that residential care facilities do not have anti-discrimination policies, and 34% think that it would be necessary to hide their sexual orientation to live in a facility (Choi & Meyer, 2016). Due to this fear of discrimination, a higher proportion of LGBT older adults prefer hospice care in their homes as compared with their non-LGBT counterparts (Choi & Meyer, 2016).

As people age, they also need legal advice in order make the necessary arrangements for getting older and end of life. However, LGBT older adults often face discrimination from the

entities that should support them, leading to legal and financial barriers to preparing for older age (Choi & Meyer, 2016).

Discrimination in healthcare. LGBT communities have a long and complicated relationship with the medical field. This probably stems from the fact that the current healthcare system is really designed for a cisgender population and has had countless incidents of overt homophobia and transphobia over the years (Rowan & Beyer, 2017; Choi & Meyer, 2016). In one study, 13% of participants reported being denied healthcare or receiving inferior care due their LGBT status (Fredriksen-Goldsen et al., 2011), with the prevalence being even higher for transgender individuals (Stepleman et al., 2018). Many transgender individuals have reported incidents of providers refusing to touch them as well as providers using harsh and abusive language (Stepleman et al., 2018). Incidents like these strongly impact an individual's access to care, utilization and eventually their health status (Stepleman et al., 2018). Much of this discrimination and lack of knowledge on specific health issues related to the LGBT community is due to healthcare providers not being properly trained to provide competent services that are specific to LGBT individuals (Rowan & Beyer, 2017). LGBT older adults commonly avoid accessing healthcare due to fear of discrimination, victimization, or heteronormative assumptions (Stepleman et al., 2018). While this fear might not always be founded, there are higher rates of discrimination and mistreatment by healthcare providers for LGBT patients as compared to their heterosexual and cisgender counterparts, with transgender individuals facing the most barriers (Stepleman et al., 2018). This discrimination can come in the form of ridicule, culturally insensitive remarks, refusal of treatment and stigmatization (Rowan & Beyer, 2017). This fear of discrimination from healthcare providers is often exacerbated when long-term or advanced care is needed (Choi & Meyer, 2016). Due to their experiences, 21% of the LGBT older adults do not

disclose their sexual orientation or gender identity to their physicians (Fredriksen-Goldsen et al., 2011). Many in this population strongly believe that if they were to be open about their sexual orientation and/or gender identity, they would not receive friendly care by providers (Choi & Meyer, 2016).

Identity concealment can have consequences because not knowing all the information about a patient can hinder the healthcare provider's ability to guide assessment and treatment considerations (Stepleman et al., 2018). Being open and honest about sexual orientation can also have psychological and mental health benefits due to the honest expression of important aspects of one's life (Choi & Meyer, 2016).

Older LGBT adults, especially bisexual men and women, demonstrate high rates of nondisclosure of sexual orientation to healthcare providers (Stepleman et al., 2018). While LGBT adults from the Invisible and Silent generations had higher rates of identity concealment, but fewer experiences with discrimination and victimization, the Pride generation experiences the opposite (Fredriksen-Goldsen, 2016).

One large impediment to the adequate care of the aging LGBT population is a knowledgeable and competent healthcare system. In the past, medical education has greatly ignored LGBT health issues leading to the majority of physicians being deficient in providing culturally sensitive and competent care to this population (Yarns et al., 2016; Rowan & Beyer, 2017). Also, the healthcare system in general views heterosexuality as being the norm, making LGBT individuals considered abnormal (Rowan & Beyer, 2017). This lack of proper education is not due to lack of interest; nearly 80% of healthcare providers are interested in learning more about LGBT health issues, but the material is not integrated into many curriculums yet (Rowan & Beyer, 2017). Provider competency can have a great impact on whether or not an LGBT adult

will come back to that particular provider or a provider in general (Stepleman et al., 2018). It should not be up to the LGBT individual to educate their providers on particular issues (Rowan & Beyer, 2017), and people who had to educate their physicians were four times more likely to delay care (Stepleman et al., 2018).

LGBT older adults are also less likely to have health insurance and consequently have more difficulties and financial barriers to accessing healthcare, compared to their non-LGBT counterparts (Stepleman et al., 2018; Choi & Meyer, 2016). Additionally, same-sex couples have a more difficult time accessing Medicaid and long-term care, retiree health insurance plans and retirement plans that people in different-sex marriages could, even if their marriages were recognized by the state in which they are living (Choi & Meyer, 2016).

Overall health status. Overall, LGBT older adults are aging well and are experiencing good health. This is despite these generations' histories of discrimination and marginalization (Fredriksen-Goldsen, 2016), and the fact that the HIV epidemic has had a lasting and profound impact on the LGBT population and continues to have an impact on the older generation in terms of physical, emotional and psychological health (Choi & Meyer, 2016). Within the larger LGBT community, bisexual and transgender individuals usually report worse overall health. This is due to higher identity stigma and socioeconomic disadvantages for bisexual individuals and elevated rates of victimization, discrimination and lack of access to care for transgender people (Fredriksen-Goldsen & Hyun-Jun, 2017).

Overall, LGBT older adults, compared to heterosexuals, are more likely to have a higher prevalence of many chronic diseases such as stroke, heart attack, arthritis, asthma, and low back and neck pain (Fredriksen-Goldsen & Hyun-Jun, 2017). Lesbian and bisexual older women are more likely to have higher rates of obesity and cardiovascular disease than heterosexual older

women (Fredriksen-Goldsen et al., 2011). Transgender older adults are also more likely to have poor overall physical health and disability, mental distress and obesity as compared to their LGB counterparts (Yarns et al., 2016). Even more specifically, HIV-positive LGBT older adults have worse overall physical and mental health, worse health outcomes, disability and a greater chance of experiencing barriers to care and stressors (Choi & Meyer, 2016).

Needs Assessment

As individuals age, they require many resources to aid in the challenges of getting older. The resources identified as most needed include senior housing, social events, support groups, transportation, and legal services (Fredriksen-Goldsen, 2011). While many adults might find barriers in accessing these resources, LGBT older adults are 20% less likely to have access to helpful government services such as senior centers, meal programs, food stamps and housing assistance (Choi & Meyer, 2016).

Methods

In 2016, Rainbow Eldercare, an organization that provides advocacy, educational resources, support and referral services to the elder LGBT community and straight allies in the Dayton, Ohio area, wanted to fill knowledge gaps on the health of older LGBT individuals and better define the health needs of this population by starting a research initiative with the Wright State University Department of Social Work, LGBT non-profit organizations, and several leaders of the local LGBT community. Boonshoft Pride, a non-profit organization founded by medical students, joined the project in 2017 and helped craft and distribute a questionnaire. The original goal of this study was to assess the health needs of the aging LGBT population in the greater Dayton, Ohio area, but a specific age cut-off was not determined because the LGBT population

may reach aging needs earlier than non-LGBT aging individuals due to existing health disparities, earlier incidences of disability, and shorter lifespans.

Survey Design

Questionnaire development occurred through intense collaboration among representatives from five LGBT-focused organizations, experts from two non-LGBT focused institutions, and LGBT leaders in the Dayton, Ohio community. These included BRAVO (Buckeye Region Anti-Violence Organization), PFLAG, Rainbow Eldercare, Boonshoft Pride, Wright State University Department of Social Work, Boonshoft School of Medicine, Greater Dayton LGBT center, Gatlyn Dame Group, and many individuals from the community. The stakeholder diversity allowed for the development of a more comprehensive and inclusive questionnaire, improved access to survey participants, and cultivation of cross-generational partnerships. The questions were written mostly by a medical student and a public health epidemiologist, with the help of the stakeholders, existing literature, census and Centers for Disease Control and Prevention questionnaires. The questions that were analyzed for this particular paper are listed in Appendix A.

Research Participants

All individuals 21 and older in the Greater Miami Valley who identify as a member of the lesbian, gay, bisexual, transgender, queer or asexual (LGBT) community were eligible to participate in the survey. Participation was limited by the refusal of a potential subject, insufficient knowledge about the survey, difficulty accessing the online survey, or lack of English proficiency. Only those individuals who were younger than 21, did not live in the Greater Miami Valley area, or did not identify as a member of the LGBT population were

excluded from the survey. For this paper, the sample population was limited to individuals age 40 and older.

Recruitment occurred at all of the sites of organizations that helped with the design of the questionnaire. Representatives from each of these sites who were knowledgeable of the inclusion criteria recruited through convenience sampling when they came across eligible participants at meetings and events. The study was also promoted through word of mouth, posters, Facebook, Twitter, and local news.

Completion of the survey served as a proxy for consent since a cover letter at the beginning of the questionnaire detailed the intent and requirements of the study participants. Wright State University's Institutional Review Board (IRB) reviewed and determined that this study was exempt from IRB before data collection began (see Appendix B). IRB exemption was obtained to ensure that the survey tool and its planned use did not violate the rights or welfare of the research subjects.

Data Collection

Data was collected through an online questionnaire, using REDCap (Harris et al., 2009). The survey was completed once and took approximately 10-15 minutes. The survey contained 100 questions on topics such as demographics, needs assessment, healthcare, social support, and personal relationships and behaviors. The survey could be taken alone or with a proctor, depending on the abilities of the participants, but a proctor was always available to answer questions.

Since the questionnaire was anonymous with no personal identifying information being collected, the only foreseeable risk was possible discomfort in answering personal questions about identity and sexual history. Additionally, participants were free not to answer questions

that made them too uncomfortable and could withdraw at any time. While participating in the survey may not have an immediate direct benefit for the subjects, study results can be used to develop better programs and awareness of the needs of older LGBT people across the Miami Valley.

Data Analysis

The final sample size was 257. The study data were exported from REDCap into SPSS (IBM Corp., 2017). All of the data were analyzed in SPSS with an α=0.05 for determination of statistical significance. Descriptive statistics were used to portray the study sample with means, medians, standard deviations, and 95% confidence intervals for all continuous variables; frequencies and percentages for all categorical variables. Graphical summaries were used to display the survey data. To examine associations between the variables of interest (LGBT-friendliness, hiding identities, and housing) and demographic characteristics, chi-square tests were conducted. Due to small sample sizes in some of the sub-categories of gender identity and sexual orientation, some of the categories were collapsed. These include transman and transwoman were collapsed into transgender; genderqueer and non-binary were collapsed into genderqueer/non-binary; asexual and other were combined into the other category of sexual orientation.

Results

Demographics

Survey data were retrieved from REDCap on February 15, 2019; there were 257 participants over the age of 40 who identified as a member of the LGBT population (45 participants were removed from data analysis due to their age being less than 40). The mean age of individuals was 58.73 $\pm$ 9.25 years. The gender identity makeup of the sample was 47% men,

47% women, 3% transgender and 3.1% genderqueer/non-binary (Figure 1). The sample's composition by sexual orientation was 47.9% gay, 40.1% lesbian, 7.4% bisexual, and 4.7% other (asexual, pansexual, queer) (Figure 2). The participants were mostly white, making up 91.8% of the sample (Figure 3). Most participants lived in suburban areas (60.4%), while 28.6% lived in urban areas and only 11.0% lived in rural areas (Figure 4). Participants reported high levels of income and education, with over half of the participants reporting a yearly income of $60,000 or greater (Figure 5) and almost 95% had at least some college education (Figure 6).

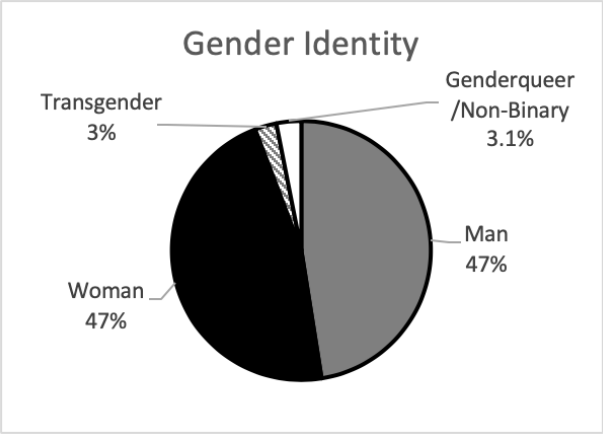

Figure 1. Gender identity of participants.

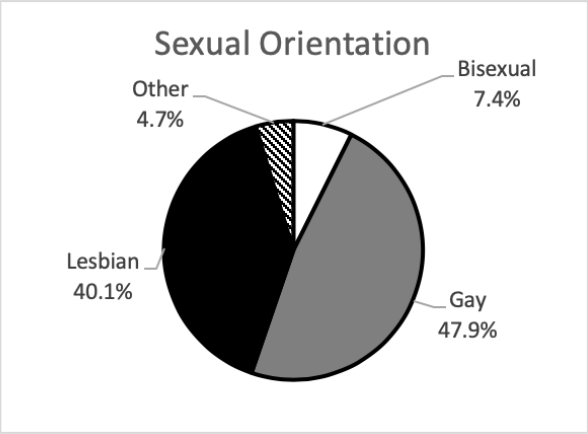

Figure 2. Sexual orientation of participants.

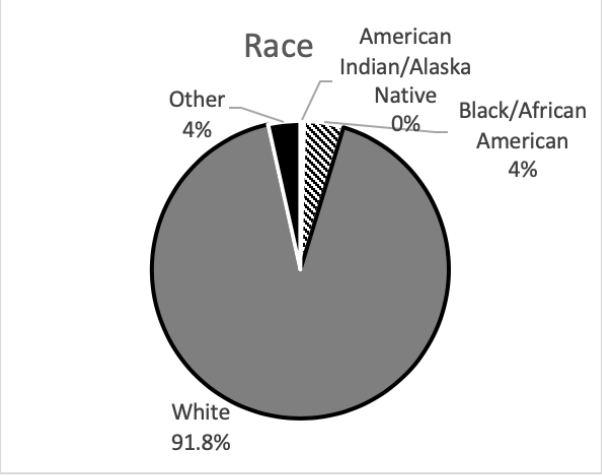

Figure 3. Race of participants.

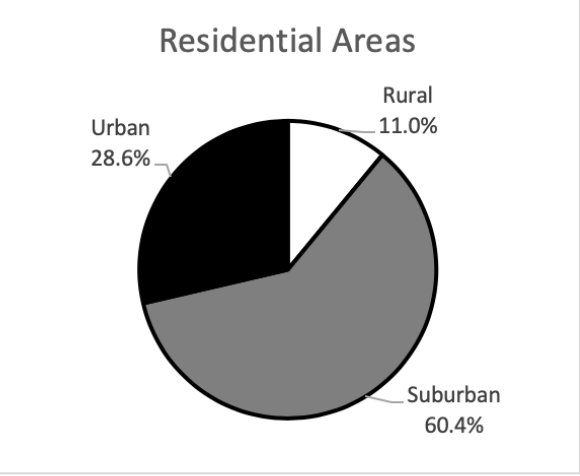

Figure 4. Residential area locations of participants.

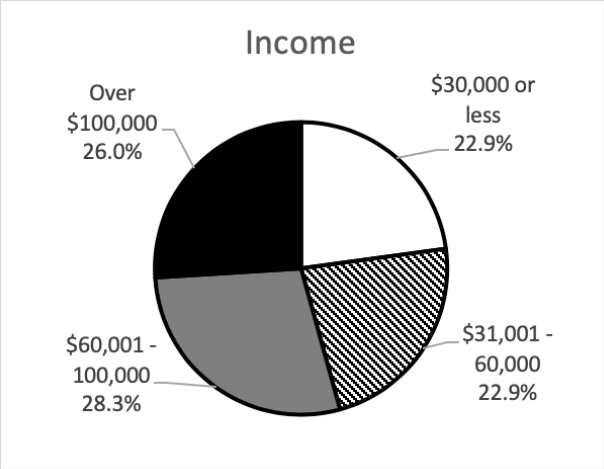

Figure 5. Income levels of participants.

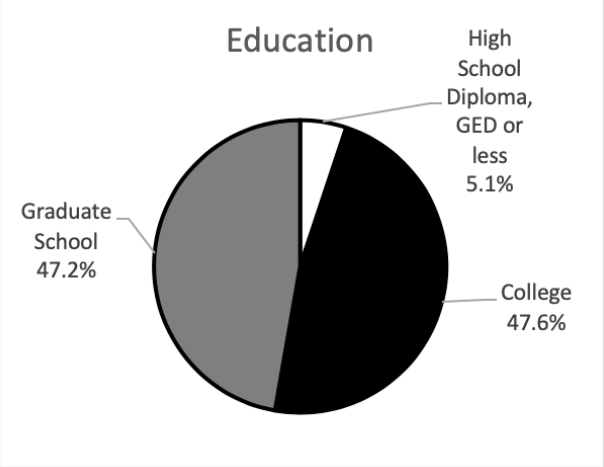

Figure 6. Education levels of participants.

Relationships between Gender Identity and Perceptions of LGBT-Friendliness

To obtain the rest of the results, associations between the variables of interest and demographic characteristics were analyzed using chi-square tests with an α=0.05 for determination of statistical significance. One key criterion for chi-square analysis is that a count of five or more in 80% of the cells is required. Since some subgroups had very small sample sizes, this criterion was often not met, limiting the significance of the results. The statistical significance as well as whether or not the expected cell count criterion was met is indicated using symbols with a key below each table.

Survey participants were asked about their perceptions of the LGBT-friendliness of legal services, healthcare establishments, housing and community services, as well as their perceived need to hide their identity. The results of inferential analysis of these variables, by gender identity are summarized in Table 1.

Table 1

Assessment of LGBT-friendliness of Various Healthcare Establishments by Gender Identity (N=257)

		Gender Identity			
		Man *n* (%)	Woman *n* (%)	Transgender *n* (%)	Genderqueer/ Non-Binary *n* (%)
LGBT-Friendly Legal Advice		*n* = 123	*n* = 134	*n* = 9	*n* = 10
	Agree	70 (56.9%)	85 (63.4%)	3 (33.3%)	7 (70.0%)
	Neutral	32 (26.0%)	29 (21.6%)	2 (22.2%)	2 (20.0%)
	Disagree	21 (17.1%)	20 (14.9%)	4 (44.4%)	1 (10.0%)
LGBT-Friendly Assisted Living		*n* = 120	*n* = 133	*n* = 9	*n* = 10
	Agree	5 (4.2%)	13 (9.8%)	0 (0.0%)	0 (0.0%)
	Neutral	87 (72.5%)	86 (64.7%)	8 (88.9%)	8 (80.0%)
	Disagree	28 (23.3%)	34 (25.6%)	1 (11.1%)	2 (20.0%)
LGBT-Friendly Doctor's Office †		*n* = 120	*n* = 132	*n* = 9	*n* = 10
	Agree	79 (65.8%)	65 (49.2%)	1 (11.1%)	4 (40.0%)
	Neutral	28 (23.3%)	53 (40.2%)	1 (11.1%)	4 (40.0%)
	Disagree	13 (10.8%)	14 (10.6%)	7 (77.8%)	2 (20.0%)
LGBT-Friendly Hospice		*n* = 121	*n* = 133	*n* = 8	*n* = 10
	Agree	44 (36.4%)	41 (30.8%)	0 (0.0%)	1 (10.0%)
	Neutral	65 (53.7%)	75 (56.4%)	6 (75.0%)	9 (90.0%)
	Disagree	12 (9.9%)	17 (12.8%)	2 (25.0%)	0 (0.0%)
LGBT-Friendly Hospitals †		*n* = 122	*n* = 133	*n* = 9	*n* = 10
	Agree	69 (56.6%)	61 (45.9%)	2 (22.2%)	4 (40.0%)
	Neutral	38 (31.1%)	46 (34.6%)	2 (22.2%)	6 (60.0%)
	Disagree	15 (12.3%)	26 (19.5%)	5 (55.6%)	0 (0.0%)
LGBT-Friendly Nursing Homes		*n* = 119	*n* = 133	*n* = 9	*n* = 10
	Agree	6 (5.0%)	10 (7.5%)	0 (0.0%)	0 (0.0%)
	Neutral	83 (69.7%)	87 (65.4%)	7 (77.8%)	8 (80.0%)
	Disagree	30 (25.2%)	36 (27.1%)	2 (22.2%)	2 (20.0%
LGBT-Friendly Senior Centers		*n* = 120	*n* = 133	*n* = 9	*n* = 10
	Agree	5 (4.2%)	10 (7.5%)	0 (0.0%)	0 (0.0%)
	Neutral	91 (75.8%)	88 (66.2%)	8 (88.9%)	8 (80.0%)
	Disagree	24 (20.0%)	35 (26.3%)	1 (11.1%)	2 (20.0%)
Long-Term Housing Plans *		*n* = 122	*n* = 133	*n* = 9	*n* = 10
	Yes	32 (26.2%)	27 (20.3%)	3 (33.3%)	4 (40.0%)
	No	90 (73.8%)	106 (79.7%)	6 (66.7%)	6 (60.0%)
Feel the Need to Hide Identity †		*n* = 122	*n* = 134	*n* = 9	*n* = 10
	Agree	15 (12.3%)	30 (22.4%)	5 (55.6%)	2 (20.0%)
	Neutral	34 (27.9%)	32 (23.9%)	1 (11.1%)	3 (30.0%)
	Disagree	73 (59.8%)	72 (53.7%)	3 (33.3%)	5 (50.0%)

***** Meets chi-square criteria

† $p < .05$

Transgender individuals were much less likely (33.3%) to agree that legal advice is friendly compared to men, women, and genderqueer/non-binary individuals (56.9%, 63.4%, and 70.0%, respectively). Transgender individuals also said that doctors' offices and hospitals were less LGBT-friendly than the other groups. Only 11.1% of transgender individuals thought doctor's offices were friendly, which is much lower than men, women, and genderqueer/non-binary individuals (65.8%, 49.2%, and 40.0%, respectively). Similarly, only 22.2% of trans individuals thought hospitals were LGBT-friendly, compared to 56.6% of men, 45.9% of women, and 40.0% of genderqueer/non-binary individuals.

None of the transgender or genderqueer/non-binary survey participants agreed that assisted living, nursing homes, and senior centers were LGBT-friendly, and only small percentages of men and women said they were friendly. While some men and women (36.4% and 30.8%) thought hospice was LGBT-friendly, no transgender (0.0%) and only a few genderqueer/non-binary (10.0%) individuals perceived it to be friendly. When asked about having a long-term housing plan, transgender (33.3%) and genderqueer/non-binary (40.0%) were more likely to have a housing plan, compared to men (26.2%) and women (20.3%).

Participants were also asked whether or not they felt the need to hide their gender identity or sexual orientation in order to receive necessary services. Unsurprisingly, transgender individuals (55.6%) agreed with this statement much more than women (22.4%), genderqueer/non-binary individuals (20.0%) or men (12.3%).

Relationships between Gender Identity, Income and Education

For income and education levels, there is some discrepancy between the gender identities. For income (Table 2), men and women made similar amounts of money in a year. Genderqueer/non-binary individuals made more money, with 50.0% of the sample making

between $60,001-100,000. Almost half (42.9%) of transgender individuals reported incomes in the $30,001-60,000 range, and 28.6% reported incomes above $100,000 annually.

Table 2

Income Level by Gender Identity (N = 257)

		Gender Identity			
		Man *n* = 121	Woman *n* = 118	Transgender *n* = 7	Genderqueer/ Non-Binary *n* = 8
		n (%)	*n* (%)	*n* (%)	*n* (%)
Income (per year)	$30,000 or less	30 (24.8%)	27 (22.9%)	1 (14.3%)	0 (0.0%)
	$30,001 - 60,000	27 (22.3%)	26 (22.0%)	3 (42.9%)	2 (25.0%)
	$60,001 – 100,000	32 (26.4%)	35 (29.7%)	1 (14.3%)	4 (50.0%)
	Over $100,000	32 (26.4%)	30 (25.4%)	2 (28.6%)	2 (25.0%)

***** Meets chi-square criteria
† $p < .05$

Men, women, and genderqueer/non-binary individuals had similar education level breakdowns, with only a small percentage with a high school diploma, GED or less, and then being almost split between college and graduate school (Table 3). Interestingly, all transgender individuals pursued higher education; 71.4% had at least some college education and 28.6% had at least some graduate school education.

Table 3

Education Level by Gender Identity (N = 257)

		Gender Identity			
		Man n = 122	Woman n = 119	Transgender n = 7	Genderqueer/ Non-Binary n = 8
		n (%)	*n* (%)	*n* (%)	*n* (%)
Education	High School Diploma, GED or less	4 (3.3%)	9 (7.6%)	0 (0.0%)	0 (0.0%)
	College	63 (51.6%)	50 (42.0%)	5 (71.4%)	4 (50.0%)
	Graduate School	55 (45.1%)	60 (50.4%)	2 (28.6%)	4 (50.0%)

***** Meets chi-square criteria
† $p < .05$

Relationships between Gender Identity and Acquisition of Legal Documents

When questioned about the legal documents needed as we age (advance directives for healthcare, durable power of attorney for healthcare, general power of attorney for financial matters, and a will), men and women were much more likely to have the documents in place compared to transgender and genderqueer/non-binary individuals (Table 4).

Table 4

Legal Documents in Place by Gender Identity (N = 257)

		Gender Identity			
		Man	Woman	Transgender	Genderqueer/ Non-Binary
Legal Documents in Place	Advanced Directives for Healthcare *	73/117 (62.4%)	77/128 (60.2%)	4/9 (44.4%)	4/10 (40.0%)
	Durable Power of Attorney for Healthcare *	74/119 (63.0%)	83/129 (64.3%)	3/9 (33.3%)	3/10 (30.0%)
	General Power of Attorney for Financial Matters *	60/119 (50.4%)	66/127 (52.0%)	2/9 (22.2%)	3/10 (30.0%)
	Will *†	79/120 (65.8%)	79/129 (61.2%)	3/9 (33.3%)	3/10 (30.0%)

***** Meets chi-square criteria
† $p < .05$

Relationships between Gender Identity, Self-Reported Health and Insurance Status

Survey participants were asked to rate their general health on a scale of poor to excellent. Overall, the highest percentage of all gender identities ranked their general health in the very good or good categories. However, transgender individuals had the highest percentage of responses (22.2%) in the poor category (Figure 7). Participants were also asked about their health

insurance status. The majority of individuals across all gender identities reported having private health insurance; however, transgender individuals had the highest percentage of not having any health insurance (22.2%).

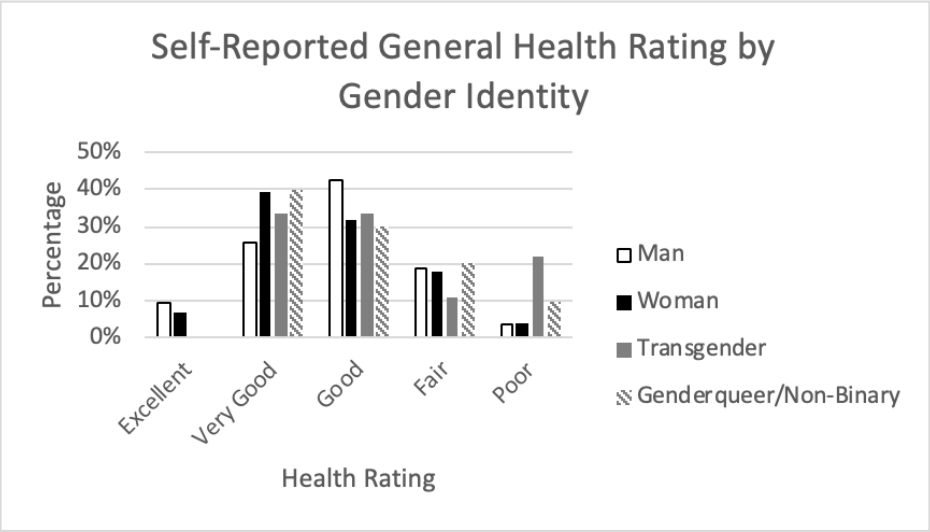

Figure 7. Self-reported general health rating by gender identity.

Relationships between Sexual Orientation and Perceptions of LGBT-Friendliness

A summary of the associations between sexual orientation and the perceptions of the LGBT-friendliness of legal services, healthcare establishments, housing and community services, as well as their perceived need to hide their identity are presented in Table 5.

Table 5

Assessment of LGBT-friendliness of Various Healthcare Establishments by Sexual Orientation (N = 257)

		Sexual Orientation			
		Bisexual *n (%)*	Gay *n (%)*	Lesbian *n (%)*	Other *n (%)*
LGBT-Friendly Legal Advice		*n* = 27	*n* = 122	*n* = 109	*n* = 18
	Agree	12 (44.4%)	73 (59.8%)	69 (63.3%)	11 (61.1%)
	Neutral	7 (25.9%)	31 (25.4%)	24 (22.0%)	3 (16.7%)
	Disagree	8 (29.6%)	18 (14.8%)	16 (14.7%)	4 (22.2%)
LGBT-Friendly Assisted Living		*n* = 26	*n* = 119	*n* = 109	*n* = 18
	Agree	0 (0.0%)	6 (5.0%)	10 (9.2%)	2 (11.1%)
	Neutral	22 (84.6%)	85 (71.4%)	70 (64.2%)	12 (66.7%)
	Disagree	4 (15.4%)	28 (23.5%)	29 (26.6%)	4 (22.2%)
LGBT-Friendly Doctor's Office ***†**		*n* = 26	*n* = 119	*n* = 108	*n* = 18
	Agree	7 (26.9%)	81 (68.1%)	57 (52.8%)	4 (22.2%)
	Neutral	12 (46.2%)	27 (22.7%)	39 (36.1%)	8 (44.4%)
	Disagree	7 (26.9%)	11 (9.2%)	12 (11.1%)	6 (33.3%)
LGBT-Friendly Hospice *****		*n* = 25	*n* = 120	*n* = 109	*n* = 18
	Agree	6 (24.0%)	46 (38.3%)	33 (30.3%)	1 (5.6%)
	Neutral	16 (64.0%)	63 (52.5%)	62 (56.9%)	14 (77.8%)
	Disagree	3 (12.0%)	11 (9.2%)	14 (12.8%)	3 (16.7%)
LGBT-Friendly Hospitals ***†**		*n* = 26	*n* = 121	*n* = 109	*n* = 18
	Agree	8 (30.8%)	71 (58.7%)	53 (48.6%)	4 (22.2%)
	Neutral	11 (42.3%)	36 (29.8%)	35 (32.1%)	10 (55.6%)
	Disagree	7 (26.9%)	14 (11.6%)	21 (19.3%)	4 (22.2%)
LGBT-Friendly Nursing Homes		*n* = 26	*n* = 118	*n* = 109	*n* = 18
	Agree	1 (3.8%)	7 (5.9%)	7 (6.4%)	1 (5.6%)
	Neutral	20 (76.9%)	81 (68.6%)	72 (66.1%)	12 (66.7%)
	Disagree	5 (19.2%)	30 (25.4%)	30 (27.5%)	5 (27.8%)
LGBT-Friendly Senior Centers		*n* = 26	*n* = 119	*n* = 109	*n* = 18
	Agree	3 (11.5%)	6 (5.0%)	5 (4.6%)	1 (5.6%)
	Neutral	18 (69.2%)	89 (74.8%)	74 (67.9%)	14 (77.8%)
	Disagree	5 (19.2%)	24 (20.2%)	30 (27.5%)	3 (16.7%)
Long-Term Housing Plans ***†**		*n* = 26	*n* = 121	*n* = 109	*n* = 18
	Yes	4 (15.4%)	32 (26.4%)	21 (19.3%)	9 (50.0%)
	No	22 (84.6%)	89 (73.6%)	88 (80.7%)	9 (50.0%)
Feel the Need to Hide Identity ***†**		*n* = 27	*n* = 121	*n* = 109	*n* = 18
	Agree	11 (40.7%)	11 (9.1%)	19 (17.4%)	11 (61.1%)
	Neutral	7 (25.9%)	37 (30.6%)	22 (20.2%)	4 (22.2%)
	Disagree	9 (33.3%)	73 (60.3%)	68 (62.4%)	3 (16.7%)

***** Meets chi-square criteria

† $p < .05$

Bisexual individuals (44.4%) were the least likely to believe that legal advice is friendly, compared to gay, lesbian, and other (asexual, pansexual, queer) individuals (59.8%, 63.3%, and 61.1%, respectively). Bisexual and other individuals also said that doctors' offices and hospitals were less LGBT-friendly than the gay and lesbian participants. Only 26.9% of bisexual individuals and 22.2% of the others thought doctors' offices were friendly, which is much lower than gay and lesbian individuals (68.1% and 52.8%, respectively). Similarly, only 30.8% of bisexual individuals and 22.2% of the others thought hospitals were LGBT-friendly, compared to 58.7% of gay men and 48.6% of lesbian women.

Very few survey participants, across all four sexual orientation categories, believe that assisted living, nursing homes, and senior centers are LGBT-friendly. Some gay and lesbian participants (38.3% and 30.3% respectively) thought hospice was LGBT-friendly; however, only 24.0% of bisexuals and 5.6% of the other individuals believe that to be the case. Survey participants who identify as other (asexual, pansexual, queer) (50.0%) were much more likely to have a housing plan, compared to gay (26.4%), lesbian (19.3%), and bisexual individuals (15.4%).

Participants were also asked whether or not they felt the need to hide their gender identity or sexual orientation in order to receive necessary services. Bisexual (40.7%) and other (61.1%) individuals agreed with this statement much more than gay men (9.1%) and lesbian women (17.4%).

Relationships between Sexual Orientation, Income and Education

Results of the analysis between sexual orientation and income indicated that gay men and lesbian women have annual incomes that are similarly distributed, while over 60% of bisexual and other individuals have annual incomes in the middle brackets (Table 6).

Table 6

Income Level by Sexual Orientation (N = 257)

		Sexual Orientation			
		Bisexual *n* = 19	Gay *n* = 122	Lesbian *n* = 101	Other *n* = 12
		n (%)	*n (%)*	*n (%)*	*n (%)*
Income (per year)	$30,000 or less	2 (10.5%)	32 (26.2%)	22 (21.8%)	2 (16.7%)
	$30,001 - 60,000	9 (47.4%)	27 (22.1%)	18 (17.8%)	4 (33.3%
	$60,001 – 100,000	3 (15.8%)	34 (27.9%)	31 (30.7%)	4 (33.3%)
	Over $100,000	5 (26.3%)	29 (23.8%)	30 (29.7%)	2 (16.7%)

***** Meets chi-square criteria
† $p < .05$

Gay, lesbian, and other individuals had similar educational attainment; most of the participants have sought higher education and only a small percentage achieved only a high school diploma, GED or less (Table 7). However, no bisexual individuals were in the lowest education category, 31.6% had at least some college education and 68.4% had at least some graduate school education.

Table 7

Education Level by Sexual Orientation (N = 257)

		Sexual Orientation			
		Bisexual *n* = 19	Gay *n* = 123	Lesbian *n* = 102	Other *n* = 12
		n (%)	*n (%)*	*n (%)*	*n (%)*
Education	High School Diploma, GED or less	0 (0.0%)	5 (4.1%)	7 (6.9%)	1 (8.3%)
	College	6 (31.6%)	66 (53.7%)	46 (45.1%)	4 (33.3%)
	Graduate School	13 (68.4%)	52 (42.3%)	49 (48.0%)	7 (58.3%)

***** Meets Chi-Square criteria
† $p < .05$

Relationships between Sexual Orientation and Acquisition of Legal Documents

When questioned about the legal documents needed as we age (advance directives for healthcare, durable power of attorney for healthcare, general power of attorney for financial matters, and a will), gay men and lesbian women were much more likely to have the documents in place compared to bisexual and other individuals (Table 8).

Table 8

Legal Documents in Place by Gender Identity (N = 257)

		Sexual Orientation			
		Bisexual	Gay	Lesbian	Other
Legal Documents in Place	Advanced Directives for Healthcare *†	7/25 (28.0%)	75/118 (60.2%)	68/105 (64.8%)	8/16 (40.0%)
	Durable Power of Attorney for Healthcare *†	10/26 (38.5%)	78/119 (65.5%)	70/106 (66.0%)	6/16 (37.5%)
	General Power of Attorney for Financial Matters *	8/26 (30.8%)	63/119 (52.0%)	55/104 (52.9%)	5/16 (31.3%)
	Will *†	10/26 (38.5%)	80/120 (66.7%)	70/106 (66.0%)	4/16 (25.0%)

***** Meets chi-square criteria
† $p < .05$

Relationships between Sexual Orientation, Self-Reported Health and Insurance Status

The associations between sexual orientation, self-reported general health and insurance status were examined. Overall, the highest percentage of all gender identities ranked their general health as very good or good (Figure 8). Participants were also asked about their health insurance status. The majority of survey participants across all sexual orientations indicated they

had private health insurance; however, bisexual individuals had the highest percentage of not having health insurance at all (16.0%).

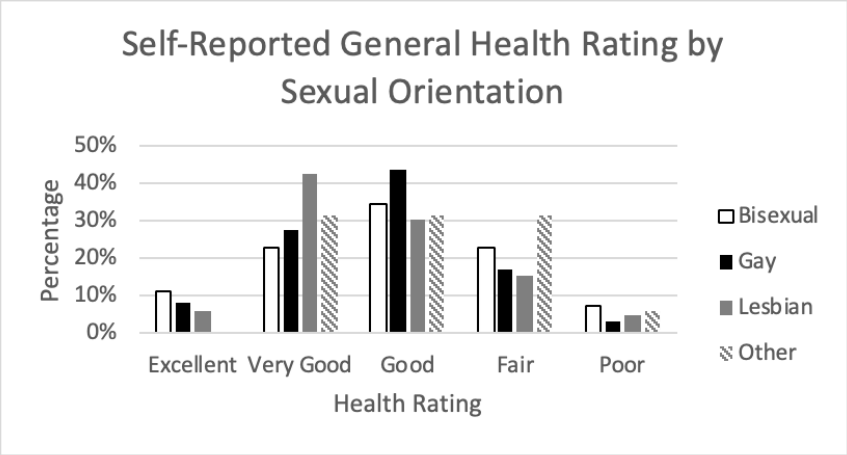

Figure 8. Self-reported general health rating by sexual orientation.

Discussion

The results of this study demonstrate that subgroups of the LGBT population have variable experiences with the social determinants of health and discrimination in Dayton, Ohio. The results also show that the characteristics of the LGBT population in Dayton do not necessarily match with national demographics, emphasizing the importance of local studies.

Demographic Profile

The participants of this study were over 91% white, in comparison to white individuals making up barely over 75% of the United States (United States Census Bureau, 2017) and 55.4% of Dayton (United States Census Bureau, 2018). This finding demonstrates that convenience sampling was not able to reach as many individuals in other races and show the true demographic breakdown of Dayton.

Participants also reported relatively high levels of income and education, with over half of the participants reporting a yearly income of $60,000 or greater and almost 95% had at least

some college education. This finding contradicts the findings of the Choi and Meyer (2016) and Fredriksen-Goldsen et al. (2011) reports, which found that many LGBT older adults experience lifetime disparities when it comes to income.

While the survey participants as a whole had relatively higher incomes than expected, there was some variability among subgroups. Consistent with the trend, transgender, bisexual, and other individuals had a higher percentage of people in the lower income brackets as compared with their counterparts. This higher overall income is inconsistent with current research, the fact that transgender individuals made less money than other subgroups is consistent with research done by Yarns, Abrams, Meeks, and Sewell (2016).

According to the study conducted by AARP (2018), almost half of LGBT older adults have at least some college education and 21% have graduate education. The results of the AARP study demonstrate that LGBT individuals are educated, which is reflected in our study participants, but to an even larger degree. These differences in results might be due to sampling, or the Dayton LGBT population may be more educated than the national averages.

Very low percentages of all subgroups had just a high school diploma, GED or less. Most groups had relatively high levels of education with bisexual individuals having the highest percentage with a graduate level education and transgender individuals being the lowest.

Perceptions of LGBT-Friendliness

Overall, transgender, bisexual, and the other (asexual, pansexual, queer) individuals perceived various establishments as being less LGBT-friendly than their gay and lesbian, and male and female counterparts. This is consistent with current research done by Stepleman et al. (2018). It is also interesting to note that transgender and bisexual individuals are usually the least researched subgroups, and yet our study suggests that they face greater discrimination (real or

perceived) in various healthcare and aging establishments. Choi and Meyer (2016) stated that this discrimination is even greater when it comes to long-term care. The results of this study support that statement because not a single transgender or genderqueer/non-binary individual thought nursing homes and assisted living places were LGBT-friendly, and only small percentages of the other subgroups thought they were friendly.

Housing Concerns

When participants were asked whether or not they had long-term housing plans, it was interesting to see that transgender, genderqueer/non-binary, and other (asexual, pansexual, queer) individuals were more likely to have housing plans. These are the subgroups that seem to experience the most discrimination in other aspects. However, discrimination when it comes to housing was not asked in this survey. Therefore, the reason why these groups were more likely to have long-term housing plans compared to their counterparts is unknown but could possibly be due to the fact that they might be older in our study. The age range was 40 to 85, and older individuals might be more inclined to have long-term housing plans than younger individuals.

Perceptions of Needing to Hiding Identity

Transgender, bisexual and other individuals were most likely to feel the need to hide their gender identity or sexual orientation in order to receive necessary services. This is consistent with current research done by Stepleman et al. (2018) and Fredriksen-Goldsen et al. (2011) which found that nondisclosure of identity is common among all LGBT older adults, but especially among bisexual men and women.

Acquisition of Legal Documents

Consistent with research done by Choi and Meyer (2016), there are differences between subgroups in the number of individuals that have legal documents in place for growing old.

Similar trends were seen in that men and women were more likely to have the documents in place than transgender or genderqueer/non-binary individuals, just as gay and lesbian individuals were more likely than bisexual or other individuals.

Self-Reported Health and Insurance Status

Most study participants ranked their health in the good or very good categories of health, consistent with Fredriksen-Goldsen's (2016) observation that LGBT older adults are aging well and experiencing overall good health. However, Fredriksen-Goldsen and Hyun-Jun (2017) found that bisexual and transgender individuals were more likely to report worse overall health, and our study results suggested that transgender individuals had the highest percentage of people reporting poor overall health, while bisexuals were similar to the other sexual orientations.

According to Stepleman et al. (2018) and Choi and Meyer (2016), LGBT adults were less likely to have health insurance overall. However, the majority of participants in our study had private health insurance. However, transgender and bisexual individuals were the most likely to not have any form of health insurance.

Public Health Implications

LGBT-friendliness, acceptance, and knowledge are a public health concern because without them, LGBT individuals delay care, avoid care, and receive inadequate healthcare, creating a large burden of disease on our community. Public health organizations can combat this concern through education and policy.

A big focus of public health is also identifying social determinants of health and working to provide needed services addressing those social determinants of health. As discussed previously, discrimination is one such social determinant of health that has a drastic impact on the health of the older LGBT community. Therefore, acknowledging that discrimination can

have a large impact on the health of this population will allow for services to try to combat the problem. It will also help other community service and healthcare organizations to devote more time and resources to combating the issue of discrimination through education materials, research, and policy.

Clinical Implications

Not having LGBT-specific health knowledge hinders healthcare professionals' ability to treat their LGBT patients with the best possible care. Knowledge on specific health conditions, health behaviors, and asking the right questions in a respectful way can improve relationships with LGBT-patients and increase the likelihood of them maintaining consistent care and in turn have better overall health.

Therefore, educational institutions that teach and train healthcare professionals should work to integrate knowledge on the LGBT population and their unique health issues into curriculum. Since LGBT individuals constitute a growing subgroup of the population, most, if not all, healthcare professionals will treat LGBT patients, making education on this population a worthwhile investment.

While the aging population of the United States is growing as a whole, there is a need for more well-trained geriatricians as well as assisted-living and nursing homes. All of these institutions should be educated on the unique needs of the LGBT population in order to give them appropriate care. This can also be assisted through governmental protections for LGBT individuals through non-discrimination laws.

Recommendations

There are two major recommendations resulting from this study. The first is to increase education efforts on LGBT-specific issues. These efforts can target many groups including

healthcare professionals, educational institutions, housing organizations, and policy makers. Dayton has been increasing these efforts in recent years through adding LGBT curriculum at the medical school, and in 2019, hosting the first-ever Ohio conference dedicated specifically to LGBT-aging. This increase in knowledge should allow for more LGBT-friendliness, simply by decreasing ignorance.

The second recommendation is policy changes. While there are no statewide, comprehensive laws prohibiting discrimination against LGBT people, Dayton (along with 20 other cities) has forms of employment, housing, and public accommodations discrimination laws in place. Protecting these current laws and writing more non-discrimination laws regarding housing and healthcare in particular would help to prevent the discrimination that prevents people from getting housing and going to the doctor in the first place

One of the original intentions for this study was to assess the local older LGBT population in order to help local organizations direct advocacy strategies and allow for better targeting of local support efforts, increasing awareness and procuring funding for additional services. Therefore, this data can be used to focus on particular subgroups of the LGBT population to assist with more directed programs. It can also give them the data to reinforce the personal stories heard about discrimination in assisted-living and nursing-homes as well as the housing market.

Going forward, it might be beneficial to study the older non-LGBT population of Dayton. This would allow for comparison at the community level and more accurately attribute how much discrimination is due to being a member of the LGBT-community and how much is due to older age. It also might be helpful to research other communities of Ohio to see similarities and

differences within a state. Also, future research should focus on reaching more people of different races, income levels, and the identities that were not as prevalent in this study.

Limitations

There are three key limitations of this study. First, non-LGBT older adults were not surveyed. Due to this limitation, we were only able to compare subgroups of this population, and not the population as a whole, with their non-LGBT counterparts. This comparison would have enabled us to discover how much being a member of the LGBT community affects many aspects of health, and how much is simply due to older age.

The second big limitation of this study is the sample size. Even though we do not currently know the size of the LGBT community in Dayton, only getting a sample size of 257 led to many obstacles. We only had a small number of individuals that identified as transgender, genderqueer/non-binary, bisexual, asexual, pansexual, and queer. This caused us to collapse categories and it also led to many of the statistical analyses to be not statistically significant, and the criteria for many of the tests not to be satisfied.

The third limitation is generalizability of the information. While much of the information agreed with other local and national studies, the fact that Dayton's LGBT community had a different demographic breakdown than the national surveys and the fact that convenience sampling was used instead of random sampling, it might limit the generalizability of this information to other cities. Another aspect that may limit generalizability is the fact that most other studies looked at individuals age 50 and up, so lowering the age by 10 years could have skewed the data.

Conclusion

This cross-sectional study found that while Dayton, Ohio is an LGBT-friendly city overall, there are many ways in which the health of the older LGBT community can be improved. The original purpose of this study was to get local information in order to direct advocacy strategies to maximize impact, allow for better targeting of local support efforts, increasing awareness, and procuring funding for additional services. Improvements in LGBT-friendliness of healthcare establishments and housing should be major priorities going forward, in order to improve the overall health of the aging LGBT population in Dayton, Ohio.

References

AARP. (2018). *Maintaining Dignity: Understanding and Responding to the Challenges Facing Older LGBT Americans*. Retrieved from https://www.aarp.org/content/dam/aarp/research/surveys_statistics/life-leisure/2018/maintaining-dignity-lgbt.doi.10.26419%252Fres.00217.001.pdf

Croghan, C. F., Moone, R. P., & Olson, A. M. (2012). *Twin Cities LGBT Aging Needs Assessment Survey.* Minneapolis, MN: Greater Twin Cities United Way and PFund. Retrieved from http://pfundfoundation.org/wp-content/uploads/2015/08/12046-PFund-LGBT-Aging-Report_online.pdf

Choi, S. K., & Meyer, I. H. (2016). *LGBT Aging: A Review of Research Findings, Needs, and Policy Implications*. Los Angeles, CA: The Williams Institute, UCLA School of Law.

Fredriksen-Goldsen, K. I. (2016). The future of LGBT+ aging: A blueprint for action in services, policies, and research. *Generations, 40*(2), 6-15.

Fredriksen-Goldsen, K. I., & Kim, H. (2017). The science of conducting research with LGBT older adults- An introduction to aging with pride: National Health, Aging, and Sexuality/Gender study. *The Gerontologist, 57,* 1-14. doi:10.1093/geront/gnw212

Fredriksen-Goldsen, K. I., Kim, H., Emlet, C. A., Muraco, A., Erosheva, E. A., Hoy-Ellis, C. P., . . . Petry, H. (2011). *The Aging and Health Report: Disparities and Resilience Among Lesbian, Gay, Bisexual, and Transgender Older Adults.* Seattle, WA: Institute for Multigenerational Health.

Grant, J. M., Mottett, L. A., Tanis, J. H., Herman, J. L., & Keisling, M. (2011). *Injustice at Every Turn: A Report of the National Transgender Discrimination Survey.* Washington, DC: National Center for Transgender Equality and National Gay and Lesbian Task Force,

2011. Retrieved from https://www.transequality.org/sites/default/files/docs/resources/NTDS_Report.pdf

Healthy People 2020. (2019). Discrimination. Retrieved from https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-health/interventions-resources/discrimination

Human Rights Campaign Foundation. (2018). *Dayton, Ohio 2018 Municipal Equality Index Scorecard.* Retrieved from https://assets2.hrc.org/files/assets/resources/MEI-2018-Dayton-Ohio.pdf?_ga=2.88965979.1900393008.1560260458-14978377.1560260458

IBM Corp. Released 2017. IBM SPSS Statistics for Windows, Version 25.0. Armonk, NY: IBM Corp.

Johnson, M. J., Jackson, N. C., Arnette, J. K., & Koffman, S. D. (2005). Gay and lesbian perceptions of discrimination in retirement care facilities. *Journal of Homosexuality, 49*(2), 83-102.

Fair Housing Center of Southeastern Michigan. (2007). *Sexual Orientation and Housing Discrimination in Michigan: A Report of Michigan's Fair Housing Centers.* Ann Arbor, MI: Fair Housing Center of Southeastern Michigan.

Harris, P. A., Taylor, R., Thielke, R., Payne, J., Gonzalez, N., & Conde, J. G. (2009). Research electronic data capture (REDCap) – A Metadata-Driven Methodology and Workflow Process for Providing Translational Research Informatics Support. *Journal of Biomedical Informatics, 42*(2), 377-381. doi:10.1016/j.jbi.2008.08.010

Rowan, N. L., & Beyer, K. (2017). Exploring the health needs of aging LGBT adults in the Cape Fear region of North Carolina. *Journal of Gerontological Social Work, 60*(6-7), 569-586. doi:10.1080/01634372.2017.1336146

Stepleman, L. M., Yohannan, J., Scott, S. M., Titus, L. L., Walker, J., Lopez, E. J., . . . Eldridge, E. D. (2018). Health needs and experiences of a LGBT population in Georgia and South Carolina. *Journal of Homosexuality, 66*(7), 989-1013. doi:10.1080/00918369.2018.1490573

United States Census Bureau. (2017). Quick facts: United states. Retrieved from https://www.census.gov/quickfacts/fact/table/US/PST045217

United States Census Bureau. (2018). Quick facts: Dayton, Ohio. Retrieved from https://www.census.gov/quickfacts/daytoncityohio

Yarns, B. C., Abrams, J. M., Meeks, T. W., & Sewell, D. D. (2016). The mental health of older LGBT adults. *Current Psychiatry Reports, 18*(6), 60. doi:10.1007/s11920-016-0697-y.

Appendix A: Survey Questions Used in Analysis

1. Do you identify as a member of the Lesbian, Gay, Bisexual, Transgender, Queer, or Asexual (LGBT) community AND are you at least 21 years old?
    - o Yes
    - o No

2. Please indicate your gender identity (Check all that apply)
    - o Man
    - o Woman
    - o Transman
    - o Transwoman
    - o Genderqueer or non-binary
    - o Different Identity/Another way
      Please Specify

3. Please indicate your sexual orientation (Check all that apply)
    - o Asexual
    - o Bisexual
    - o Gay
    - o Lesbian
    - o Queer
    - o Another way
      Please Specify
4. What is your current age?

5. What is your race (Check all that apply)?
    - o American Indian or Alaska Native
    - o Asian
    - o Black or African American
    - o White
    - o Other
      Please Specify

6. Residential Area
    - o Rural
    - o Suburban
    - o Urban

7. Household Income
    - o Less than $15,000 per year
    - o $15,001-30,000 per year
    - o $30,001-45,000 per year
    - o $45,001-60,000 per year
    - o $60,001-75,000 per year
    - o $75,001-100,000 per year
    - o Over $100,000 per year

8. Education
    - Less than high school
    - High school diploma or GED
    - Some college
    - Associate's degree
    - Bachelor's degree (undergraduate
    - Some graduate school
    - Master's degree (graduate)
    - Doctoral degree (M.D., J.D., Ph.D.)

9. Please rate each of the following statements

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
I can access legal advice regarding LGBT-specific issues if needed					
I feel the need to hide my sexual orientation or gender identity in order to receive necessary services from social service providers					
Senior centers are LGBT-friendly in the Greater Miami Valley Area					
Assisted-living facilities are LGBT-friendly in the Greater Miami Valley					
Nursing homes are LGBT-friendly in the Greater Miami Valley Area					
Hospice Care is LGBT-friendly in the Greater Miami Valley Area					
Hospitals are LGBT-friendly in the Greater Miami Valley Area					
Doctor's offices are LGBT-friendly in the Greater Miami Valley Area					

10. Have you made a plan for your long-term housing?
    - Yes
    - No

11. Do you have the following legal documents in place?

	Yes	No
Will		
Durable power of attorney for healthcare		
Advance directives for healthcare (instructions in case you aren't able to provide directions yourself)		
General power of attorney for financial matters		

12. Would you say in general that your health is
    - Excellent
    - Very Good
    - Good
    - Fair
    - Poor
    - Don't know or not sure

13. Health insurance status
    - No health insurance
    - Medicaid only
    - Medicare only
    - Private health insurance only
    - Medicaid + Medicare
    - Medicare + private health plan
    - Tricare

Appendix B: IRB Exemption Letter

Research and Sponsored Programs
201J University Hall
3640 Col. Glenn Hwy.
Dayton, OH 45435-0001
(937) 775-2425
(937) 775-3781 (FAX)
e-mail: rsp@wright.edu

WSU IRB STUDY EXEMPTION LETTER

Exemption date: October 16, 2018 **Exemption category:** 2

PI: Anne Proulx, DO
Family Medicine (FPR55)

IRB #: 06547

Title: Assessing the Needs of Older Lesbian, Gay, Bisexual and Transgender People In the Greater Miami Valley Area

The WSU IRB has reviewed and determined that the above project is exempt from IRB review. This review and exemption approval was processed in accordance with federally defined categories of exempt review per 45 CFR 46.101 and WSU IRB policies.

Additional submissions (i.e., continuing review or amendment forms) are not required for exempted studies. However, should your study significantly change, please contact the WSU IRB office prior to initiating those changes to assess whether the study will or will not continue to be exempt.

We appreciate the opportunity to evaluate this research and wish you success with the project.

Thank you,

The Wright State University IRB
OHRP #IRB00000034

Appendix C: List of Competencies Met in Integrative Learning Experience

CEPH Foundational Competencies

Evidence-based Approaches to Public Health
2. Select quantitative and qualitative data collection methods appropriate for a given public health context
3. Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming and software, as appropriate
4. Interpret results of data analysis for public health research, policy or practice
Public Health & Health Care Systems
6. Discuss the means by which structural bias, social inequities and racism undermine health and create challenges to achieving health equity at organizational, community and societal levels
Planning & Management to Promote Health
7. Assess population needs, assets and capacities that affect communities' health
Communication
19. Communicate audience-appropriate public health content, both in writing and through oral presentation
20. Describe the importance of cultural competence in communicating public health content
Interprofessional Practice
21. Perform effectively on interprofessional teams
Systems Thinking
22. Apply systems thinking tools to a public health issue

WSU MPH Population Health Concentration Competencies

1. Use evidence based problem solving in the context of a particular population health challenge.
2. Demonstrate application of an advanced quantitative or qualitative research methodology.
3. Demonstrate the ability to contextualize and integrate knowledge of specific population health issues.
4. Address diversity when evaluating population health issues related to improving population health, reducing disparities, or increasing equity.