

Food Insecurity among Transgender and Gender Non-conforming People in the Southeast United
States

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Abstract

Food insecurity in the United States (U.S.) has been identified as a pressing public health problem, as it contributes to hunger, obesity, chronic disease, and poor overall health. Despite increased national attention to addressing issues of food insecurity in the general population, nearly nothing is known about food insecurity in the transgender and gender non-conforming (TGNC) community. National population-based surveys do not include information on gender identity, rendering this population nearly invisible to public health professionals. Data from my dissertation sought to uncover and address issues of food insecurity in this otherwise “hidden” population.

In Chapter II, qualitative interviews were conducted with 20 food insecure TGNC people living in the Southeast U.S. In this study, I found that participants were suffering from severe food insecurity and poverty. Study participants reporting facing multi-level discrimination that contributed to their food insecurity. In Chapter III, I documented the use of Facebook as a recruitment strategy for TGNC people. Results suggested that the use of targeted Facebook advertisements can be successful, however, gender-based digital harassment to potential study participants was also witnessed. Detailed protocol must be followed to minimize risk when recruiting highly-stigmatized populations. In Chapter IV, I further investigated issues of food insecurity, minority stress, community resilience, and the use of local food pantries by TGNC people living in the Southeast U.S. through an online, cross-sectional survey. Results indicated that a majority of survey participants were food insecure (80.5%), few utilized Federal (19%) and local (22%) food assistance resources, and minority stress and community resilience were present. Minority stress indices were not related to food insecurity or the use of local food pantries. However, community resilience measures were related to the use of local food pantries.

This dissertation informs a significant public health problem in a population at high risk for food insecurity. Chapters II and IV inform public health practitioners and the general public about food insecurity and the use of local food assistance resources among TGNC people. Chapter III provides critical guidance for researchers using targeted Facebook advertisements as a recruitment strategy for highly-stigmatized populations.

Table of Contents

Chapter I: Introduction.....	1
References.....	11
Chapter II: Food Insecurity among Transgender and Gender Non-conforming Individuals in the Southeast United States: A Qualitative Study.....	15
Abstract.....	16
References.....	39
Appendix (Tables and Figures).....	45
Chapter III: Facebook: Friend or Foe?: Using Facebook to Recruit Hard-to-Reach Populations.....	48
Abstract.....	49
References.....	64
Appendix (Tables and Figures).....	69
Chapter IV: Food Insecurity and Food Pantry Use among Transgender and Gender Non-conforming People in the Southeast United States.....	76
Abstract.....	77
References.....	110
Appendix A (Tables and Figures).....	116
Appendix B (Final Survey Instrument).....	132
Appendix C (Gender Minority Stress and Resilience Measure).....	156
Chapter V: Conclusion.....	158
References.....	168
Vita.....	170

List of Tables

Table 2.1	Semi-structured interview guide.....	45
Table 2.2	Sample codebook.....	46
Table 2.3	Demographic characteristics of study sample ($n = 20$)	47
Table 3.1	Inclusion and exclusion criteria for Facebook recruitment cycles 1 and 2.....	70
Table 3.2	Facebook engagements for Facebook recruitment cycles 1 and 2	71
Table 4.1	Missing data analysis.....	120
Table 4.2	Demographic characteristics of survey respondents.....	121
Table 4.3	Independent sample t-test: food security by age and education ($n=105$).....	123
Table 4.4	Chi square analysis: food security by marital status and geographic location ($n=105$).....	123
Table 4.5	Alternate sources (other than traditional grocery stores, restaurants or convenient stores) utilized to secure food.....	124
Table 4.6	Open-ended comments regarding the welcoming nature of food pantries.....	124
Table 4.7	Gender minority stress and resilience (GMSR) measure summary statistics.....	125
Table 4.8	Binary logistic regression predicting likelihood of food pantry usage by full-sample GMSR subscale scores, when adjusting for geographic location, marital status, age and education $X^2 (18, 105) = 15.99$ $p = .59$	126
Table 4.9	Binary logistic regression predicting likelihood of food pantry usage by “gender history” subgroup GMSR subscale scores, when adjusting for geographic location, marital status, age and education $X^2 (13, 74) = 10.75$ $p = .63$	127
Table 4.10	Binary logistic regression predicting likelihood of food pantry usage by “gender identity” subgroup GMSR subscale scores, when adjusting for geographic location, marital status, age and education $X^2 (11, 31) = 8.84$ $p = .64$	128
Table 4.11	Binary logistic regression predicting food security by full-sample GMSR subscale scores, when adjusting for geographic location, marital status, age and education $X^2 (11, 105) = 24.62$ $p = .01$	129
Table 4.12	Binary logistic regression predicting food security by “gender history” subgroup GMSR subscale scores, when adjusting for geographic location, marital status, age and education $X^2 (13, 74) = 24.06$ $p = .03$	130
Table 4.13	Binary logistic regression predicting food insecurity by “gender identity” subgroup GMSR subscale scores, when adjusting for geographic location, marital status, age and education $X^2 (13, 31) = 14.90$ $p = .09$	131

List of Figures

Figure 3.1	Targeted Facebook advertisement.....	69
Figure 3.2	Cycle 1 advertisement Facebook summary report.....	72
Figure 3.3	Cycle 2 advertisement Facebook summary report.....	73
Figure 3.4	Sample supportive comment thread received during recruitment cycle 2.....	74
Figure 3.5	Hiding a Facebook comment.....	74
Figure 3.6	Public Facebook page settings.....	75
Figure 4.1	Facebook recruitment advertisement 1.....	116
Figure 4.2	Facebook recruitment advertisement 2.....	117
Figure 4.3	Survey completion flow diagram.....	118
Figure 4.4	USDA “6-item” short form food security module.....	119

Abbreviations and Symbols

GMRS	Gender Minority Stress and Resilience Measure
LGBTQ	Lesbian, Gay, Bisexual, Transgender, Queer
NTDS	National Transgender Discrimination Survey
RFRA	Religious Freedom Restoration Act
TGNC	Transgender and Gender Non-conforming
USDA	United States Department of Agriculture
USTS	United States Transgender Survey

Chapter I

Introduction

In the United States (U.S.), 1 of every 8 people (or 42 million) is food insecure (United States Department of Agriculture, 2017b). Meaning, their access to adequate, consistent food is limited by a lack of money and other resources. People who are food insecure often have diets comprised of cheaply processed, energy-dense foods including refined grains, added sugars, and added saturated fats (Seligman, Laraia, & Kushel, 2010). These dietary deficiencies contribute to several, diet-related chronic diseases including hypertension, heart disease, and diabetes (Gregory & Coleman-Jensen, 2017; Seligman et al., 2010).

Food insecurity disproportionately affects certain groups of people, including those living in poverty, people who are under or unemployed, and the homeless (Seligman et al., 2010; The United States Conference of Mayors, 2016; United States Department of Agriculture, 2017b). Transgender and gender non-conforming (TGNC) people, (individuals whose sex assigned at birth does not match their gender identity), are a diverse group of people that experience some of the worst contexts for these drivers of food insecurity. Based on the 2015 U.S. Transgender Survey (USTS) (2016), TGNC people are 4 times more likely than cisgender (non-transgender) people to have incomes below \$10,000/year. They are 3 times more likely to be unemployed, and 2.5 times more likely to experience homelessness in their lifetimes when compared to their cisgender counterparts (James, 2016). Therefore, TGNC people are a population that are highly vulnerable to experiencing food insecurity.

In addition to economic and structural influences, food insecurity is linked to several negative psychosocial factors including anxiety, stress, shame, and humiliation (Laraia, Siega-Riz, Gundersen, & Dole, 2006; Tarasuk & Beaton, 1999; Weaver & Hadley, 2009). As such,

food insecurity is characterized as a physically and emotionally distressing experience that erodes mental health and long-term quality of life (Weaver & Hadley, 2009). While negative psychosocial suffering resulting from food insecurity is well-documented in the general population, we have little evidence exploring how food insecurity affects TGNC people, and more specifically, how gender identity intersects with issues of food insecurity.

The TGNC population faces an additional burden of minority stress in the form of discrimination and marginalization due to their non-cisgender identities, which can compound stress and anxiety induced by food insecurity (Meyer, 2015). Minority stress is a unique form of stress that exists in addition to the daily hassles and life events experienced by all people (Meyer, 1995). Minority stress is chronic and ongoing, cumulative, and institutional, as it is built into how organizations and social phenomena function and exists beyond the control of the individual or subgroup it targets (Meyer, 1995).

Minority stress has the capacity to influence TGNC people's lives at multiple socioecological levels (Centers for Disease Control & Prevention, 2015; Meyer, 2003). Intrapersonally, minority stress can have psychosocial repercussions including social anxiety, depression, and self-acceptance (Meyer, 1995). Interpersonally, TGNC people face rejection by peers, family and romantic partners, and social isolation. They may also experience interpersonal prejudice, violence, and threat of violence (Meyer, 2003). At a community level, TGNC people risk discrimination by organizations, including unemployment or underemployment, refusal of care by healthcare systems, and exclusion from community and religious groups (James, 2016; Meyer, 2003). On a societal level, TGNC people face stigma and marginalization via discriminatory policies and laws that target this group (Herman, 2013; Movement Advancement Project, 2018). Although this group experiences multilevel stressors beyond their control, this

group is also resilient. Meyer (2015) refers to this resilience as community resilience, or *minority coping*. Community resilience is a sense that individuals can overcome life challenges and obstacles with the assistance of close community networks and support. For TGNC people with strong community or social support, community resilience may serve as a protective factor to experiences of minority stress. Multi-level minority stressors and community resilience are likely to intersect with food insecurity, as they may contribute to or protect against the negative consequences of food insecurity in the TGNC population.

Where a person lives can also influence their experiences with minority stress, community resilience, and food insecurity. It is estimated that over 380,000 TGNC people live in the Southeast U.S. (Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia) (Flores, Herman, Gates, & Brown, 2017). TGNC people living in these states may be particularly at risk for increased stigma, marginalization, and discrimination due to the region's socio-politically conservative and religious climate (Hunger Free America, 2017; Movement Advancement Project, 2018). Many Southeastern states have not passed non-discrimination laws protecting TGNC people and some have enacted policies that enact discrimination and limit TGNC people's rights (Movement Advancement Project, 2018). Additionally, 75% of the Southeastern states in the U.S. have food insecurity rates above the national average (United States Department of Agriculture, 2017a). As such, TGNC people living in the Southeast are experiencing some of the worst, high risk contexts for food insecurity and gender-based discrimination.

In the general population, local food assistance programs, such as food pantries, are valuable resources to food insecure people. In a typical month, food pantries across the U.S. serve approximately 12.5 million people (Briefel, Jacobson, & Tiehen, 2003). A majority of U.S.

food pantries (67%) are run by faith-based institutions (Briefel et al., 2003), which could pose a great threat to food insecure TGNC people. State Religious Freedom Restoration Acts (RFRA), or “religious freedom laws” allow faith-based institutions to deny services to select community members based on religious beliefs (National Conference of State Legislatures, 2017). These laws can translate to local faith-based food pantries, resulting in the potential denial of services to TGNC people and further jeopardizing food access to this already vulnerable population (Hunger Free America, 2017). Currently, 9 of the 12 Southeastern U.S. states (Alabama, Arkansas, Florida, Kentucky, Louisiana, Mississippi, South Carolina, Tennessee, and Virginia) have enacted RFRA laws, with similar legislation proposed in the remaining 3 Southeastern states: Georgia, North Carolina and West Virginia (National Conference of State Legislatures, 2017; Rewire News, 2018).

Food insecurity in the U.S. has been identified by the Centers for Disease Control (CDC), the U.S. Department of Agriculture (USDA), and the Office of Disease Prevention and Health Promotion as a pressing public health challenge, as it contributes to hunger, obesity, chronic disease, and poor overall health (Gregory & Coleman-Jensen, 2017; Office of Disease Prevention and Health Promotion, 2019; United States Department of Agriculture, 2017b). Despite growing national attention to food insecurity rates and health consequences in the general population, nearly nothing is known about food insecurity in the TGNC community. A dearth of information in this area prevents public health professionals from providing sustainable solutions that can improve food security and food access in this grossly-understudied population. This project aims to:

1. Describe experiences of food insecurity among TGNC people living in the Southeast U.S.

2. Describe how food insecurity relates to health outcomes for TGNC people living in the Southeast U.S.
3. Document the experiences of using Federal and local food assistance resources among TGNC people.
4. Determine how gender-related minority stressors affect the use of local food assistance resources.
5. Determine how Facebook can be used to recruit hard-to-reach stigmatized populations for public health research in food insecurity.
6. Describe the benefits and harms to using Facebook as a recruitment tool for stigmatized populations.

The next three chapters of this dissertation (Chapters II, III, and IV) are manuscripts formatted for publication submission. The first manuscript (Chapter II) addresses Aims 1 through 4. It involves a qualitative study using semi-structured telephone interviews with 20 food insecure TGNC people living in the Southeast U.S. The second manuscript (Chapter III) addresses Aims 5 and 6 by investigating the use of Facebook to recruit TGNC people into the aforementioned research project. The third manuscript (Chapter IV) addresses Aims 1, 3 and 4 with a quantitative, online, cross-sectional survey of TGNC people living in the Southeast U.S. The last chapter (Chapter V) provides a conclusion and summarizes the dissertation in its entirety.

Manuscript 1 of this dissertation provides a qualitative investigation into food insecurity issues existent for TGNC people living in the Southeast U.S. through exploratory, semi-structured, telephone interviews. Twenty food insecure TGNC participants were recruited via targeted Facebook advertisements, and interviewed about their experiences with food insecurity

within their communities. An exploratory study was required to assess how food insecurity is affecting this population given the dearth of published information on the subject.

In Manuscript 1, I report on participant's experiences with food insecurity documented by a one-time semi-structured interview in person or via telephone. Prior to the interview process, participants were required to complete the USDA-approved "6-item" Short Form Food Security Module (United States Department of Agriculture, 2017c) as a pre-screening questionnaire assessing their level of food security. All participants scored low to very low food security (or, food insecure) using this validated scale. Interview questions were developed based on research questions, a pilot-test interview, known consequences of food insecurity in the general population, and constructs from minority stress theory (Meyer, 1995).

Following data collection from 20 interviews, qualitative transcripts were entered into QSR International's NVivo 11 for data management and analysis (Edhlund & McDougall, 2017). Data analysis followed a hybrid method that incorporated a data-driven inductive approach (Boyatzis, 1998) and a deductive template approach using thematically-grounded a priori codes (Crabtree & Miller, 1999). Four deductive codes (food security, food quality, physical health outcomes, and mental health outcomes) were developed a priori based on known consequences of food insecurity in the general population, and were applied to all sources in preliminary analysis. All transcripts were also analyzed inductively, allowing codes and themes to emerge with the data. The inductive coding process involved reading transcripts line-by-line to identify unique respondent insights within the data and then encode these insights prior to interpretation (Boyatzis, 1998). Four inductive codes (Federal food assistance, local food assistance, employment status, and support systems) were developed based on data from the transcripts.

Results from this project indicated that TGNC people living in the Southeast U.S. are

facing damaging health consequences as a result of their food insecurity. Participants described living in extreme poverty and how living in the Southeast U.S. contributed to their poverty and food insecurity. They reported that the conservative socio-political climate of the Southeast U. S. made it difficult to find and maintain employment, which was the primary driver of food insecurity in our sample. Participants also reported experiencing discomfort seeking food assistance at local food pantries due to discrimination and concern for reducing emergency food availability for people in greater need. Stress from un- and underemployment, inadequate food supplies, and discrimination were reported as contributors to poor physical and mental health, and weakened support systems.

In Manuscript 2, the recruitment method (targeted Facebook advertisements) for the aforementioned qualitative study is studied empirically. The purpose of this study was to investigate and document the utility, successes, challenges, and possible positive and negative consequences of using targeted Facebook advertisements as a strategy to recruit TGNC people into a research project. While using targeted Facebook advertisements as a recruitment strategy for research projects has proven successful in many studies targeting hard-to-locate and/or stigmatized populations (Allison, 2009; Carter-Harris, Ellis, Warrick, & Rawl, 2016; Yancey, Ortega, & Kumanyika, 2006), there is limited empirical evidence specifically regarding the possible positive or negative consequences of Facebook recruitment for highly-stigmatized groups. The relative anonymity provided by Facebook creates the potential for increased digital harassment, abuse and cyberbullying of marginalized groups, including the TGNC population. Therefore, it is possible that TGNC people recruited into research studies via social media may be at risk for gender-based digital harassment and abuse during recruitment.

Results from this project indicate that while Facebook can successfully be used to recruit TGNC people, there are also negative consequences that arise from this recruitment method. During recruitment, negative comments were made by Facebook members in response to the advertisement. The comments were derogatory in nature, inflammatory, and potentially emotionally and mentally damaging to the TGNC community and to the research staff responsible for monitoring and managing the advertisement. To minimize the risk and harm to potential participants from other Facebook members, careful consideration and detailed protocol must be applied when designing targeted Facebook advertisements for highly-stigmatized or marginalized groups. In Manuscript 2, I synthesize the results of my Facebook recruitment efforts and offer a detailed protocol and strategic plan that can be used by future researchers recruiting highly-stigmatized populations using targeted Facebook advertisements.

Manuscript 3 expands upon the qualitative results from Manuscript 1 by further investigating issues of food insecurity, minority stressors, community resilience, and the use of local food assistance resources in a broader population of TGNC people living in the Southeast U.S. Using a cross-sectional, web-based survey, a convenience sample of TGNC people living in the Southeast U.S. were recruited to answer questions related to their experiences of food insecurity using the USDA “6-item” Short Form Food Security Module (United States Department of Agriculture, 2017c), their use of Federal and local food assistance resources, and their experiences with stress and resilience within their communities using the Gender Minority Stress and Resilience Measure (GMSR) (Testa, Habarth, Peta, Balsam, & Bockting, 2015).

Overall, 105 TGNC people completed the survey, with participant representation from all 12 Southeastern states. A vast majority of survey participants were experiencing food insecurity (80.5%). Food insecure participants ($M = 26.21$, $SD = 7.45$) were younger than food secure

participants ($M = 32.15$, $SD = 11.30$, $t(293) = 2.61$, $p = .01$). Food insecure participants ($M = 1.94$, $SD = 0.82$) also had a lower degree of education than food secure participants ($M = 2.65$, $SD = 0.49$, $t(309) = 3.27$, $p < .001$). Additionally, the percent of food insecure participants differed by marital status $\chi^2(2, n=105) = 7.30$, $p = .03$. A majority of food insecure survey participants (54.1%) were members of an unmarried couple. No significant differences in food security were found when accounting for geographic location, receipt of Federal food assistance (Supplemental Nutrition Assistance Program, or SNAP), or GMSR subscale scores.

Food insecure participants reported extreme activities to secure food including: scavenging grocery store or restaurant dumpsters (24.4%), stealing food from friends or family (6%), and stealing food from restaurants, grocery stores, or convenient stores (18%). Consuming low-cost, energy dense foods such as fast food and processed or packaged products was more common among food insecure participants (86.6%) than food secure participants (47.8%).

A majority of participants ($n=78$, 74.3%) reported never using local food pantries. The percent of participants who use food pantries did not differ by SNAP status $\chi^2(2, n=105) = 4.90$, $p = .08$ or by food security status $\chi^2(1, n=105) = 3.19$, $p = .07$. The two resilience GMSR subscales, *Pride* and *Community connectedness* were significantly associated with the use of local food pantries. A significant positive relationship was found between the GMSR *Pride* subscale and the use of food pantries (aOR = 1.11, 95% CI 1.02, 1.22, $p = .02$) when adjusting for participants' age, education, marital status and geographic location. A significant negative relationship was found between the GMSR *Community connectedness* subscale and the use of food pantries (aOR = 0.89, 95% CI 0.79, 1.00, $p = .05$) when adjusting for the same participant demographic characteristics. No significant relationships were found between any of the other GMSR subscales and food pantry usage.

When asked how welcoming local food pantries are to TGNC people, a majority of participants stated food pantries were neither welcoming nor unwelcoming (53.5%). While quantitative survey responses suggest a majority of participants were indifferent about the welcoming nature of local food pantries, open-ended qualitative responses suggested participants felt unwelcome at local food pantries due to their TGNC status, particularly at pantries operated by a church or faith-based organization.

In summary, this dissertation informs a significant public health problem in a population at high risk for food insecurity. Information from Manuscripts 1 and 3 can be used to inform public health practitioners and the general public about food insecurity and the use of local food assistance resources among TGNC people. Information from Manuscript 2 can assist researchers in the successful recruitment of highly-stigmatized populations using targeted Facebook advertisements. Manuscript 2 can also inform researchers about techniques that can be used to mitigate and minimize risk to potential participants and research staff when recruiting highly-stigmatized populations via publicly-accessible social media networks. Overall, data from this project can be used to guide social media recruitment of TGNC people for research projects, and can uncover and address issues of food insecurity among this otherwise unseen community.

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Chapter II

Food Insecurity among Transgender and Gender Non-conforming Individuals in the Southeast United States: A Qualitative Study

This chapter is revised based on a paper published by Jennifer Russomanno, Joanne G. Patterson, and Jennifer M. Jabson:

Russomanno, J., Patterson, J., Jabson, J. (2019) Food Insecurity among Transgender and Gender Non-conforming Individuals in the Southeast United States: A Qualitative Study. *Transgender Health*, 4(1), 1-11. DOI: 10.1089/trgh.2018.0024.

My primary contributions to this paper as the lead author include: (i) identification of the public health issue, (ii) development of the research idea and questions, (iii) design of the study, (iv) gathering and reviewing the literature, (v) conducting participant interviews, (vi) analyzing qualitative data, (vii) lead author and editor for the final paper.

Abstract

Purpose. Transgender and gender non-conforming (TGNC) people experience high rates of poverty, joblessness, and homelessness, which drive risk for food insecurity. TGNC people also face discrimination due to transphobia and cissexism that may contribute to these drivers. Minimal empirical evidence describes experiences with food insecurity among TGNC people. This project investigated food insecurity among TGNC people and how these experiences relate to their physical and mental health.

Methods. Semi-structured telephone interviews were conducted with 20 TGNC people residing in the Southeast United States (U.S.) recruited via social media. Interviews were transcribed and qualitatively coded.

Results. TGNC people reported living in extreme poverty. They described how the conservative socio-political climate of the Southeast U.S. made it difficult to find and maintain employment, which was a primary driver of food insecurity. Participants experienced discomfort seeking food assistance due to discrimination and concern for reducing emergency food availability for people

in greater need. Stress from un- and underemployment, inadequate food supplies, and discrimination were reported as contributors to poor physical and mental health, and weakened support systems.

Conclusion. Poverty and food insecurity erode TGNC people's physical and mental health, and support systems. TGNC people faced substantial barriers—including un- and underemployment and multi-level discrimination—that prevented them from affording adequate food. Public health solutions include implementing employment non-discrimination policy to protect TGNC people in the workplace and building relationships between local food pantries and lesbian, gay, bisexual and transgender (LGBT) organizations to create safer environments for all persons in need of food assistance.

Introduction

Food security is defined by the United States Department of Agriculture (USDA) as “access by all people at all times to enough food for an active, healthy life” (United States Department of Agriculture, 2017b). An estimated 11.8% of American households are food insecure, meaning that their access to adequate food is limited by a lack of money and other resources (United States Department of Agriculture, 2017b). People who are food insecure often have diets rich in cheaply processed, energy-dense foods including refined grains, added sugars, and added saturated fats (Seligman, Laraia, & Kushel, 2010). These dietary deficiencies contribute to several, diet-related chronic diseases including hypertension, heart disease, and diabetes (Gregory & Coleman-Jensen, 2017; Seligman et al., 2010).

Some subgroups of the population are more likely to be food insecure than others (United States Department of Agriculture, 2014). For example, adults living in households with incomes at or below 185% of the federal poverty level are more likely have high food insecurity than those above this income threshold (United States Department of Agriculture, 2017b). Food insecurity is a dynamic, managed process that has been linked to a number of economic, structural, and psychosocial factors including un- and under-employment, poverty, high housing costs, access to food, household stress, receipt of local, state or federal food assistance, and health care expenses (City Policy Associates, 2010; Laraia, Siega-Riz, Gundersen, & Dole, 2006; Rose, 1999).

Transgender and gender non-conforming (TGNC) people face very high risks for poverty, joblessness, homelessness, and stress (Albelda, Badgett, Schneebaum, & Gates, 2017; James, 2016). TGNC people comprise individuals of varied identity labels, including but not limited to transgender, gender non-conforming, non-binary, gender fluid, genderqueer, or gender

expansive. A TGNC-identified person's gender identity differs from their sex assigned at birth and/or exists beyond the gender binary (i.e., social construction of gender as strictly "man" or "woman") and from the majority of the surrounding society. Conversely, a cisgender person's gender identity corresponds with their sex assigned at birth and exists within the gender binary (National LGBT Health Education Center, 2018).

To date, the 2015 U.S. Transgender Survey (USTS) (James, 2016) is the largest and most comprehensive survey documenting the experiences of transgender people in the United States (U.S.) and is among the first sources of evidence to describe poverty, joblessness, and homelessness among this group. Among USTS respondents, nearly one-third (29%) of transgender people were living in poverty, compared to 12% of the general population. Furthermore, 15% of respondents were unemployed, three times higher than the at-current U.S. unemployment rate (5%). Nearly one-third (30%) of USTS respondents experienced homelessness during their lifetime, and 12% experienced homelessness in the year prior to survey completion because of their transgender identity (James, 2016). Given these extreme economic hardships, food insecurity is an urgent issue for TGNC people; however, little is known about food insecurity in this group.

Generally, experiences of food insecurity are associated with negative psychosocial factors including anxiety, stress, shame, and humiliation (Laraia et al., 2006; Tarasuk & Beaton, 1999; Weaver & Hadley, 2009). As such, food insecurity is characterized as a physically and emotionally distressing experience that erodes mental health and long-term quality of life (Weaver & Hadley, 2009). While negative psychosocial suffering is well-documented in the general population, we have little evidence exploring how food insecurity affects TGNC people, and more specifically, how gender identity intersects with issues of food insecurity.

In addition to stress and anxiety induced by food insecurity, the TGNC population faces an additional burden of minority stress. Minority stress is a unique form of stress that exists in addition to the daily hassles and life events experienced by all people. Minority stress is chronic and ongoing, cumulative, and institutional, as it is built into how organizations and social phenomena function and exists beyond the control of the individual or subgroup it targets (Meyer, 2003).

Minority stress has the capacity to influence TGNC people's lives at multiple socioecological levels (Centers for Disease Control & Prevention, 2015; Meyer, 2003). Intrapersonally, minority stress can have psychosocial repercussions including social anxiety, depression, and self-acceptance (Meyer, 1995). Interpersonally, TGNC people face rejection by peers, family and romantic partners, and social isolation. They may also experience interpersonal prejudice, violence, and threat of violence (Meyer, 2003). At a community level, TGNC people risk discrimination by organizations, including unemployment or underemployment, refusal of care by healthcare systems, and exclusion from community and religious groups (James, 2016; Meyer, 2003). On a societal level, TGNC people face stigma and marginalization via discriminatory policies and laws that target this group (Herman, 2013). Multi-level minority stressors are likely to intersect with food insecurity, as they may contribute to or amplify the negative consequences of food insecurity in the TGNC population.

TGNC people living in the Southeast may be particularly at risk for increased stigma, marginalization, and discrimination within their communities due to the region's socio-politically conservative and religious climate (James, 2016; White Hughto, Murchison, Clark, Pachankis, & Reisner, 2016). Many Southeastern states have not passed non-discrimination laws protecting TGNC people and some have enacted policies that restrict TGNC people's rights

(Movement Advancement Project, 2018). Moreover, of the 12 states defining the Southeast, 9 report a prevalence of food insecurity higher than the national average (Coleman-Jensen, Nord, Andrews, & Carlson, 2011; United States Department of Agriculture, 2017a). As such, TGNC people living in the Southeast are experiencing some of the worst contexts for food insecurity and gender-based discrimination.

The purpose of this study was to understand food insecurity experienced by TGNC people in the Southeast U.S. We sought to answer the following questions: What experiences do TGNC individuals living in the Southeast U.S. have with food insecurity? How does food insecurity relate to health outcomes for TGNC individuals living in the Southeast U.S.? Answering these questions will inform future policies and/or community-based interventions that break down barriers and promote high food security in TGNC groups.

Methods

This project was approved by the University of Tennessee Institutional Review Board (UTK IRB-16-03275-XP).

Paradigmatic Framework

Given the lack of published evidence of food insecurity in TGNC individuals, it was imperative to gain in-depth insight on how food insecurity is affecting this population from their perspectives. Therefore, this study was informed by the paradigmatic framework of constructivism (Lincoln, Lynham, & Guba, 2011). Interview questions were intentionally constructed in a semi-structured, conversational tone that left room for participants to guide the interview from their own perspectives of experiences with food insecurity (Lincoln et al., 2011).

Methodology

We focused on the experiences of food insecurity among a particular group of people (TGNC living in the Southeast); consequently, we used an instrumental case study approach to focus more on the phenomena being investigated rather than on individual cases themselves (Baxter & Jack, 2008; Stake, 1995).

Research Team

The 3-person research team consisted of cisgender females who all identify as members of the LGBTQ community. The PI (JR) and co-author (JP) are both doctoral candidates, while JJ is the faculty advisor. All 3 team members' research focuses on health and/or food insecurity of marginalized populations, including LGBTQ people. JR conducted a majority of participant interviews (75%), while JP conducted 10%, and JJ conducted 15%. All interviewers underwent extensive training in interviewing and qualitative data collection, methods and analysis prior to this project.

Participants

Purposeful, criterion specific sampling (Stake, 1995) was used to recruit members of this hard-to-reach population (Abrams, 2010). Eligibility criteria were: speak and understand English, be over the age of 18, identify as TGNC, self-report issues of food insecurity within the past 12 months by completing the USDA-approved Food Security Module "Short Form" 6-item scale (United States Department of Agriculture, 2017c), and reside in 1 of the 12 Southeast states of the U.S.: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, or West Virginia.

Informed consent was obtained from all participants prior to participation in a pre-screening questionnaire that assessed level of food security as defined by the USDA food

security module (United States Department of Agriculture, 2017c). Pre-screening questionnaires were sent via email by the PI. Participants with a raw score of 2 through 6 (low to very low food security, or, food insecure) were eligible to participate. Those who scored 0 or 1 (high to marginal food security) would be excluded from participation. All individuals who contacted us to participate scored a 4 or greater on the USDA module. None were excluded based on scores.

Recruitment Strategy

Participants were recruited online via LGBT-centric Facebook groups and targeted Facebook advertisements. Advertisements targeted individuals who were ages 18-50, resided in the Southeast U.S., and had interests in LGBT-related topics. Each advertisement included a brief introduction to the study and PI contact information. In total, 2 paid advertisement campaigns were run over 12 days. Twenty-two people responded to recruitment requests. Twenty participants were interviewed and 2 were lost to follow-up between eligibility screening and scheduled interview. Three participants contacted us after recruitment was closed to participation; they were not included nor interviewed.

Study participation was voluntary. Each participant was assigned a unique identification number to maintain confidentiality. Participants were compensated with a \$25 electronic gift card for completing a qualitative interview.

Procedures

We used the COREQ 32-item checklist (Tong, Sainsbury, & Craig, 2007) to identify important study characteristics for reporting—including data collection, analysis, sampling methods, and theme development. Participants completed a one-time, semi-structured interview in person or via telephone. A semi-structured interview guide (Table 2.1) informed answers to the study's two research questions. Interview questions were developed based on research

questions, a pilot-test interview, known consequences of food insecurity in the general population, and constructs from minority stress theory. Based on our inclusion criteria, we knew participants were experiencing food insecurity on some level, therefore, presupposition questions (Patton, 2002) were developed to ensure potentially difficult or embarrassing life experiences were accurately recorded. To confirm interview guide quality and ensure questions were appropriate and sensitive to TGNC people, the PI pilot-tested the interview guide with a self-identified transgender male who scored a 6 for food insecurity.

Interviews were conducted between April and June 2017, ranged from 30-90 minutes in length, and were audio-recorded. Participants' pronouns, gender identity, and state of residence were recorded. Data collection concluded when saturation was achieved (Saunders et al., 2018).

Analysis

Following data collection from 20 interviews, qualitative transcripts were entered into QSR International's NVivo 11 for data management and analysis (Edhlund & McDougall, 2017). Data analysis followed a hybrid method that incorporated a data-driven inductive approach (Boyatzis, 1998) and a deductive template approach using thematically-grounded a priori codes (Crabtree & Miller, 1999). Four deductive codes (food security, food quality, physical health outcomes, and mental health outcomes) were developed a priori based on known consequences of food insecurity in the general population. The four deductive codes were applied to all sources in preliminary analysis conducted independently by two researchers (JR & JP).

Using conventional content analysis (Creswell, 1998), preliminary data analysis began with reading all data repeatedly to achieve immersion. Data were then analyzed deductively using a template approach per Crabtree and Miller (Crabtree & Miller, 1999). Researchers (JR & JP) also coded all transcripts inductively. The inductive coding process involved reading

transcripts line-by-line to identify unique respondent insights within the data and then encode these insights prior to interpretation (Boyatzis, 1998). The research team met weekly to discuss all coding, and specifically inductive codes, while transcripts were reviewed. Each code was discussed between researchers until any coding discrepancies were resolved.

Each member of the research team held various positions that placed us as either outsiders (e.g., identifying as cisgender, never having experienced food insecurity), insiders (e.g., having experienced sexual orientation-related discrimination, having experienced food insecurity), and/or allies (e.g., community food access activists, allies to TGNC people). Outsider positions allowed us to firmly place research participants as the “experts” of their own experiences (Berger, 2015). In contrast, insider and allied positions allowed us to approach data analysis with some knowledge about the topic and general experiences faced by participants. By consistently reflecting on our personal experiences during data analysis, we were able report unique experiences of TGNC participants as reflected by the data, rather than by our own experiences.

The final codebook described 4 deductive and 4 inductive codes, including a definition for each code and example quotes from the data, and is included as Table 2.2 (Creswell, 1998). Using Nvivo, a preliminary coding comparison query determined a high degree of agreement between coders (*Cohen’s kappa* [K] = .9651). Nvivo calculates percent agreement in the source data where users agree on each code’s content. An average percentage agreement was calculated for 8 codes across 20 sources, where each source was given equal weight (QSR International, 2018). Two overarching themes, “Experiences with Food Security” and “Health Outcomes” emerged from the coded data. A third researcher (JJ) reviewed the data to ensure that selected

text (data) appropriately represented codes, and that codes were appropriately assigned to themes.

Results

Sample

Twenty TGNC individuals participated in the study from eight Southeastern states. Not all Southeastern states were represented in the study because no TGNC individuals residing in Alabama, Arkansas, Louisiana, or Mississippi responded to study recruitment. Demographics of the study sample are summarized in Table 2.3.

Theme 1: Experiences with Food Security

This theme reports on TGNC people's experiences with food security, severity of their food security status, use of federal and local food assistance programs, and how employment status related to their level of food security. Five codes comprise this theme: Food security, food quality, federal food assistance, local food assistance, and employment status.

Food security. Quantitatively, participants reported low to very low food security based on responses to the USDA pre-screening module (United States Department of Agriculture, 2017c). Nineteen participants (95%) scored a 6 on the Food Security Module, indicating very low food security and 1 participant (5%) scored a 4, indicating low food security.

Participants reported not having enough food to eat and recalled frequently skipping daily meals. One participant noted, "There was days where we would go for a few days without food or even minimal—maybe a can of vegetables or something a day." (Participant 16, Transgender Male)

To supplement limited food, participants reported seeking food from no-cost sources, including dumpsters.

“We have dived dumpsters throughout the years many times, which usually produce something good, but most of the time, dumpsters are locked up.” (Participant 20, Transgender Male)

Participants also described competing monthly financial obligations. Paying utility bills, car payments and rent took priority; leaving participants with little income to secure adequate food.

“Rent is always paid cuz I don’t wanna be homeless. The car payments are usually made on time just cuz I don’t want to be embarrassed to have my car towed away and then I wouldn’t have any way to get to work. I have to prioritize these things. I don’t want to be homeless, definitely don’t want to be jobless.” (Participant 12, Genderqueer)

The burden of paying for housing, transportation, and food also made it difficult for participants to afford health-related costs, including monthly hormones. When faced with competing costs and constrained finances, hormones were often de-prioritized.

“[How] can I afford my T this month when I’m barely able to make my bills and I hardly have enough gas to get back and forth to work? Let alone I need to put milk in the fridge and get bread.” (Participant 13, Transgender Male)

Competing financial priorities also forced participants to choose between meeting daily needs, including food, and saving for gender-affirming surgeries.

“I’m gonna have to have another surgery. I was hoping that maybe I wouldn’t, but it’s becoming apparent to me that I need to. I hate buying food because every time I buy food I think about how it’s getting—it’s something I need, but it’s getting in the way of something else that I need.” (Participant 8, Transgender Male)

Together, participants’ narratives revealed complicated emotional and mathematical calculations where their most basic needs were pitted against each other. As meeting all of these needs was

financially impossible, participants consistently engaged in a process of prioritization, which often deemed securing adequate food a lower priority.

Food quality. When participants were able to access food, it was often nutritionally-void, processed foods. Participants reported buying the cheapest food available in an effort to have any food source at all.

“I went to the Dollar Store a lot, cuz they took my EBT card. I would just buy a lot of really cheap—like Top Ramen or canned things, pasta, just things that were cheap and that I could stretch out throughout the month as best I could.” (Participant 11, Genderqueer)

Participants were aware of the nutritional deficiencies in the food they were purchasing. However, given their limited financial capacity, many reported it came down to a choice between eating nutritionally deficient foods and not eating at all.

“I feel like a lot of times I was eating things that weren't very nutritious, because I could get 'em for \$0.99. You can get a sucker at the store for \$0.25 or whatever. Those kinda things don't sustain you. They're not giving me the right protein and vitamins. I feel like for a while, I felt nauseous a lot. All the time. I was sick all the time.” (Participant 17, Gender fluid)

Federal food assistance. Participants reported applying for Federal Assistance Programs, such as the Supplemental Nutrition Assistance Program (SNAP), but were often approved for very low monthly allowances.

“We applied for food stamps, but because we weren't married at the time and we didn't have any kids, we only got \$30.00 off of that, so we'd try and make the food stretch as long as we can by buying things in bulk like rice.” (Participant 2, Non-binary)

Others reported being denied assistance due to income earnings barely over the set allowances to qualify for federal food assistance. One participant recalled, “I’m not currently on them [food stamps]. I make 50 dollars too much to be on them right now.” (Participant 6, Non-binary)

Local food assistance. Several participants noted that local food pantries were not accessible to them in their communities. One participant stated, “If you’re not living in a homeless shelter, there’s not much access to food pantries.” (Participant 4, Transgender Male) Among participants who noted that food pantries were available and known, almost all reported that these resources were organized by local churches or faith-based organizations. Participants reported distress when deciding to use these food pantries, as they felt uncomfortable and unwelcomed by these institutions due to their TGNC identity.

“We had a couple food banks near us, but we were iffy about going to them. Pretty much all of the things in our area are run out of conservative churches, so my wife would have to wear a binder and put her hair up. I would also have to dress more feminine than I was comfortable with at that time and just keep our heads down, hope nobody noticed anything off.” (Participant 2, Non-binary)

Additionally, participants were hesitant to use food pantries because they felt that these resources should be reserved for more vulnerable community members who may be in desperate need.

“I felt like there were people who needed a lot more than I did. I felt like I owed it to them as much as myself to look for whatever options I could find that didn’t take away from people who are in greater need than I was.” (Participant 14, Transgender Female)

Employment status. Participants reported that food insecurity was directly related to inability to find steady employment that paid a living wage. Most participants reported being under- or unemployed, which substantially affected their ability to afford adequate food supplies.

“I’ve been constantly looking for work, but we have been on a strict rice and rice and salt diet so it’s not necessarily the best thing in the world right at the second. I have about 10 bucks every 22 days to spend on food.” (Participant 4, Transgender Male)

Several participants attributed their limited employment opportunities to employers’ negative responses to their gender identity. Participants described challenges in securing employment and active discrimination in the workplace, leading to job loss—whether due to being “asked to leave” or preemptive resignation.

“I had a job that I quickly lost, because I tried to come out as trans. They were not happy with that. I resigned.” (Participant 17, Gender fluid)

In response to lacking traditional employment opportunities, participants recalled finding alternate forms of income, including engaging in sex work, to make ends meet.

“I couldn’t find jobs for months on end, and that became a struggle to pay my rent and to find food, or not to find food, but to afford food. Ultimately, what I had to do was begin doing sex work in order to pay my bills, including buying food.” (Participant 6, Non-binary)

Theme 2: Health Outcomes

This theme documented how food insecurity was related to participants’ physical and mental health. Three codes were identified under this theme: Physical health outcomes, mental health outcomes, and social support.

Physical health outcomes. Participants reported suffering substantial, negative physical health outcomes due to high food insecurity, including frequent illnesses and uncontrolled weight gain.

“[I was] eating really unhealthy food, because it was cheaper. Gained weight, and felt sick and tired all the time. Your quality of life really suffers when you put unhealthy things into your body.” (Participant 13, Transgender Male)

Some participants reported that new and existing chronic conditions, including unmanaged hypertension and cholesterol, were exacerbated by the stress of food insecurity.

“I’ve had kidney failure multiple times in my life. I think it may be happening again. I’m drinking nothing but hard water right now. I don’t necessarily think it’s doing too well. I’m physically surviving. I know that you can essentially live off of rice, but I don’t feel like I’m doing the best. I’ve been getting colds often, which is strange. It’s not like the disease thing. I think it’s food related.” (Participant 4, Transgender Male)

Mental health outcomes. Participants also reported suffering negative mental health outcomes due to their high food insecurity, including depression, anxiety, and chronic stress.

“I was hungry 24/7. No one feels good when they're hungry. It was making me depressed. It was making me stressed. Because it was hard when you're hungry and you're trying to make it through all these things, and you're depressed, and your body isn't being given the right nutrition.” (Participant 17, Gender fluid)

Depression and stress interacted with participants’ daily lives. One participant described how severe anxiety and depression arising from food insecurity negatively affected them, their intimate partner, and their responsibilities to care for a minor child.

“We’ve both been really stressed out, really anxious, really depressed about it. There have been moments where we just sat and cried about it. Her son doesn’t, he doesn’t understand that he can’t eat everything on the house all the time because we don’t have the money to buy food all the time.” (Participant 12, Genderqueer)

Despite severe stress and poor mental health arising from food insecurity, participants reported a great deal of resiliency. Several participants described strategies used to buffer stress, including practicing mindfulness and breathing techniques. Participants described being optimistic that their situation would improve, even in times of great adversity.

“I guess we’re both pretty resilient. I grew up living kind of like that. It’s kind of revisiting a dark moment. We just try to continue to be positive and hope that she’ll get a job and now she has one luckily... We just try to remain positive and not let that affect her son and things like that, but we don’t always eat.” (Participant 12, Genderqueer)

Support systems. Participants reported high food insecurity caused them emotional distress that strained relationships with other members of their household. Stress that participants experienced with their intimate partners was of particular concern, as it attacked and weakened their mental health and primary social support system.

“I find myself getting upset and angry because I’m the primary money-maker in the house, if that’s what you call it. [My partner] and I have gotten into arguments over food like, ‘Oh, you’re eating too much,’ or ‘You didn’t let the milk last long enough’ or things like that.” (Participant 12, Genderqueer)

Conversely, several participants noted that the shared experience of food insecurity led them to grow closer to their partners and rely on each other during difficult times.

I feel like it's brought us closer together. I feel like kind of working through these issues together and being there for each other kind of immediately at low points in our life has created this bond and definitely kind of shown each other our true colors right from the get go. I think, in a way, it's made our relationship really strong... (Participant 17, Gender fluid)

Participants reported that relying on nuclear family members for financial support or food assistance was not always an option. Multiple participants described being rejected by and ostracized from family after coming out about their sexual orientation and/or gender identity.

“Her single mom kicked her out on her 18th birthday for being—I guess you could say—gay. Then, when I came out as trans, I haven't spoken to my family since then. We weren't able to get any sort of family support.” (Participant 20, Transgender Male)

Alternatively, participants leaned on “chosen family” or close friends. These individuals provided both emotional support and tangible resources, including food and connections to food assistance programs.

“I generally lean on my chosen family in times of high stress and coping with things that are hard, like not being able to afford food. That usually helps in terms of just alleviating the stress and also finding resources to get on things like food stamps or various things.” (Participant 6, Non-binary)

Discussion

Across existing studies, gender and socioeconomic inequality have been documented as intersectional social determinants of food insecurity (Chilton & Booth, 2007; De Marco, Thorburn, & Kue, 2009). TGNC participants in our study repeatedly described experiencing gender-based stigma that impacted their financial stability and, as a result, severely limited their ability to afford adequate food. It is well documented that TGNC people experience multi-level discrimination due to their gender identity (James, 2016). Approximately 63% of TGNC people report serious acts of discrimination—including joblessness, homelessness, denial of services, and violence—due to gender bias (James, 2016).

Participants in our study reported substantial challenges in finding steady employment that paid a living wage due to transphobia and gender bias. TGNC participants described multiple interpersonal and institutional minority stressors, including being turned down for job interviews, denied opportunities for promotion, and losing employment after coming out as transgender in the workplace. To make up for lost income and in the face of food insecurity, TGNC participants turned to “underground” sources of income, including sex work. Among vulnerable, food insecure populations, engaging in sex for money is a documented theme (Fielding-Miller, Mnisi, Adams, Baral, & Kennedy, 2014; Fitzgerald, Patterson, Hickey, Biko, & Tobin, 2015; Whittle et al., 2016). Reliance on sex work to increase food security is especially concerning, as the illegality and stigma associated with sex work further marginalizes food insecure and TGNC people and increases their risk for harm (Fitzgerald et al., 2015).

For food insecure people in the general population, local food pantries are widely utilized sources of food (Coleman-Jensen et al., 2011); however, the vast majority of U.S. food pantries are organized and operated by faith-based organizations (Zedlewski, 2003). Religiously affiliated food pantries presented a substantial barrier for TGNC people in our study. Participants feared experiencing community-level minority stress in the form of gender-based discrimination from “conservative” or “anti-LGBT” religious groups who organize food pantries. In turn, fear kept participants from seeking much-needed food assistance within their local communities. This finding contrasts qualitative findings among food insecure adults in which faith-based communities are reported as a source of regular food assistance (Chilton & Booth, 2007; De Marco et al., 2009). As reported by others (Miewald, Ibanez-Carrasco, & Turner, 2010), we also found that TGNC participants who accessed food pantries described going “stealth” and dressing in contrast to their gender identity in order to avoid transphobia. While going stealth facilitated

access to local food sources for participants in our study, it resulted in physical discomfort and psychological distress.

Participants also reported alternative food-seeking practices. These included searching for food in dumpsters, frequently skipping meals, or severely limiting dietary options. Similar strategies have been reported in the broader literature among low income and food insecure adults (Ahluwalia, Dodds, & Baligh, 1998; De Marco et al., 2009; Hamelin, Habicht, & Beaudry, 1999). Additionally, nuclear family food assistance was not always a viable option. As such, respondents reported relying on “chosen family”, or close friends, as sources for food assistance.

TGNC people in our study described feeling undeserving of local food assistance. Specifically, they were concerned that local food pantries were designed for more vulnerable community members. Participants reported purposefully not seeking local food assistance to avoid taking away critical resources from those in dire need. From our understanding, this is a unique finding. In other studies, participants experienced concern about taking food away from vulnerable groups when choosing to use food pantries; however, these concerns did not prevent use of these resources (De Marco et al., 2009).

One explanation for our finding is that in the context of a cissexist, binary gender identity system where “normal” is defined as either “man” or “woman,” TGNC people are seen as “abnormal” or “less than” because of their transgender or gender non-conforming identity (Stryker, 2004). This gender-based stigma may exacerbate or generate feelings of “unworthiness” among TGNC people who are also impoverished and food insecure, which may explain why participants in this study felt undeserving of food assistance. It may also be that feeling unworthy is an emotion faced by food insecure people in general.

Participants reported relying on nutritionally deficient food sources. This is concerning as these foods can contribute to poor physical health and chronic disease. Of particular concern were participants' reports of hypertension and high cholesterol, which they attributed to stress and inadequate nutrition arising from food insecurity. Recent population-based studies indicate that gender non-conforming, transgender females (Nokoff, Scarbro, Juarez-Colunga, Moreau, & Kempe, 2018), and transgender males (Downing & Przedworski, 2018) exhibited disparities in cardiovascular disease. While larger studies are needed, it may be that food insecurity is an important driver of cardiovascular disease risks.

Psychosocial consequences of food insecurity are not unique to TGNC people. Experiencing hunger, negotiating food assistance programs, and acquiring food are universal experiences cited as sources of stress among food insecure people in the general literature and in this study (Chilton & Booth, 2007; Hamelin et al., 1999; Whittle et al., 2017). However, for TGNC people, each source of food-related stress intersected with unique minority stressors arising from cissexism and transphobia. Multilevel gender-based discrimination and victimization by family members, at work, and in the local food assistance community were layered upon TGNC's people experience of food insecurity.

Yet, even facing compounded minority stress and extreme food insecurity, TGNC participants exhibited extraordinary resilience. Meyer (2015) describes resilience as the ability to successfully adapt and cope with acute and chronic minority stressors. It comprises multiple biopsychosocial processes that buffer the effects of stress and promote health (Charney, 2004). While their strategies to cope with stress varied, resilience was the thread that ran through each person's experience. As summed by one participant, "You have to gut yourself. It's an emotional thing that you have to dig through and find everything that you are and just come out and be

happy.” Despite cumulative minority stress, poverty, and food insecurity, TGNC participants were resilient and coped.

Limitations

This study attempted to capture the experiences of food insecure TGNC people in the Southeast U.S; however, not all Southeastern U.S. states were represented. One explanation is that TGNC people residing in states that were not represented are experiencing some of the worst contexts for food insecurity and gender-based discrimination (Coleman-Jensen et al., 2011; Movement Advancement Project, 2018). As such, they may have been less likely to participate given contextual stressors. Additionally, self-reported gender identity and level of food security were the only demographic characteristics collected in this study. Thus, it is impossible to determine whether TGNC people of diverse backgrounds are represented. Finally, the sample size ($n = 20$) for this study was small, but saturation was achieved.

Implications and Future Directions

Several public health solutions could be implemented in the Southeast U.S. to alleviate issues of food insecurity among TGNC people. Structurally, Federal or State level legislation must be established to protect TGNC people from employment discrimination. In much of the Southeast U.S., state laws do not guard against employment discrimination for TGNC individuals (Movement Advancement Project, 2018). Employment discrimination decreases opportunities for permanent, stable employment, thereby systematically and unjustly increasing risk for food insecurity among TGNC people.

Community-based solutions that increase access to safe and affirming resources for food insecure TGNC people are also warranted. Local food pantries could partner with LGBT community organizations to create TGNC-affirming food pantries and/or assist existing food

pantries in becoming TGNC-affirming. Through such partnerships, food pantry staff and leadership could be educated about food insecurity among TGNC people and trained in strategies to make food pantries safer for and more accessible to this population.

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Appendix Tables and Figures

Table 2.1. Semi-structured interview guide

<i>Warm Up</i> 1. To begin, as I mentioned earlier, my name is Jen. I identify as cisgender female, and I prefer the pronouns “she, her and hers.” What are your preferred pronouns? 2. How would you define your gender identity?
<i>Thank you. Before we move on, I wanted to provide the definition of food security so you have a better understanding of why I will be asking the questions included in this interview. “Household food security exists when all members living in your household have access to enough food for an active, healthy life at all times.”</i> 1. Given that definition, can you tell me about a time where you have struggled to afford enough food? 2. During times when you didn’t have enough food, how did you cope? 3. Tell me about a time when you feel your physical health may have suffered as a result of not being able to afford enough food. 4. Tell me about a time where you feel your mental health may have suffered as a result of not being able to afford enough food. 5. How do you think that your physical and mental health experiences influenced one another during the times when you weren’t able to afford enough food?
<i>I am now going to ask you a series of questions that aim to understand how your experiences with food security and how those experience relate to your daily life.</i> 1. Let’s talk a little bit about your monthly expenses. Thinking back on the last month, what were your five biggest expenses? 2. Some people have told us that hormones and other health care needs are a top priority and that at times these expenses are so high that they get in the way of being able to afford food. Have you had any similar experiences? 3. When you weren’t able to afford enough food, how did it affect your relationships at home? 4. Please tell me about your current employment status.
<i>Next, I am going to ask you a series of questions that are aimed at the community in which you live and how your community might better address food security issues for gender minority people.</i> 1. In which city and state do you currently live? 2. How accepting is your community of gender minority people? 3. Have you ever applied for government assistance benefits such as food stamps? 4. Tell me about your experiences with local food pantries. 5. Thinking about other [transgender, gender non-conforming] people in your community, how much of an issue do you think food security is for them? 6. How do you feel your community could better support [transgender, gender non-conforming] people struggling to feed themselves or their families?

Table 2.2. Sample codebook

Theme	Code	Sample Quote
Experiences with Food Security	Food Security	There was days where we would go for a few days without food or even minimal—maybe a can of vegetables or something a day.
	Food Quality	Luckily, I’ve got loads of macaroni and cheese stocked up—or ramen noodles or little things like that.
	Federal food assistance	Right now I’m getting food stamps. I just started getting them again. I was also on them about three years ago. I found it really hard to stretch them out throughout the month to make ends meet for food.
	Local food assistance	We could never actually get any food from the food pantry because the only food pantry we could get to was a Salvation Army. They’re not too fond of my kind.
	Employment Status	I had a job that I quickly lost, because I tried to come out as trans. They were not happy with that. I resigned.
Health Outcomes	Physical health outcomes	As far as specifically in the past, eating really unhealthy food, because it was cheaper. Gained weight, and felt sick and tired all the time. Your quality of life really suffers when you put unhealthy things into your body.
	Mental health outcomes	Stress is pretty negative on your body. You start losing sleep and being more agitated easily over things that wouldn't necessarily have agitated you before, if you've had enough food and not stressing about it.
	Support systems	I generally lean on my chosen family in times of high stress and coping with things that are hard, like not being able to afford food.

Table 2.3. Demographic characteristics of study sample ($n = 20$)

Gender Identities	N (%)
Gender fluid	2 (10%)
Gender non-conforming	1 (5%)
Genderqueer	2 (10%)
Non-binary	4 (20%)
Transgender female	3 (15%)
Transgender male	8 (40%)
States of Residence	
Florida	4 (20%)
Georgia	2 (10%)
Kentucky	3 (15%)
North Carolina	1 (5%)
South Carolina	2 (10%)
Tennessee	4 (20%)
Virginia	3 (15%)
West Virginia	1 (5%)

Chapter III

Facebook: Friend or Foe?: Using Facebook to Recruit Hard-to-Reach Populations

Abstract

Background. It is challenging to recruit gender minority people into health studies using traditional research recruitment methods. Social media can be a useful recruitment strategy for hard-to-reach, stigmatized populations; however it may also introduce risks for participant exposure to negative comments and feedback. The current project reports the challenges of using Facebook as a recruitment strategy for transgender and gender non-conforming (TGNC) individuals experiencing food insecurity.

Methods. Participants were recruited via targeted Facebook advertisements over two cycles in April and June 2017. Facebook advertisements targeted TGNC adults living in the Southeast U.S. During Cycle 1, researchers only used inclusion criteria to recruit the target population. During Cycle 2, inclusion and exclusion criteria were used.

Results. The Cycle 1 Facebook advertisement only specified inclusion criteria (no exclusion criteria) and reached 8,518 people, had 188 reactions, comments, and shares, but produced cyberbullying in the form of discriminatory and potentially distressing feedback from other Facebook members. The Cycle 2 advertisement specified both inclusion and exclusion criteria. It reached fewer people (6,976) and received 166 reactions, comments, and shares, but produced primarily positive feedback from Facebook members. Both advertisement recruitment cycles yielded similar numbers of study participants.

Conclusion. Facebook can be a useful tool to recruit hard-to-reach and stigmatized populations. However, researchers must consider potential harms of targeted Facebook advertisements in the forms of cyberbullying and digital harassment. To minimize harm to potential participants and research staff, researchers must develop detailed protocol for monitoring and responding to negative feedback on targeted Facebook advertisements.

Introduction

Between the years of 2008 and 2018, social media use in the United States (U.S.) increased from 21% to 69%. Today, nearly 7 of 10 Americans use social media to connect with others, engage with news content, and share information (Pew Research Center, 2018). Among the various social media platforms available, Facebook is the leading social network with 1.49 billion active members (Facebook Reports, 2018). In the U.S., 78% of adults age 30-49 and 64% of adults age 50-64 report using Facebook daily (Smith & Anderson, 2018).

Given the increased popularity of social media platforms, social science researchers are using social media to recruit potential participants into health, medical, and psychosocial research activity (Allison, 2009; Capurro et al., 2014; Thornton et al., 2016; Topolovec-Vranic & Natarajan, 2016; Whitaker, Stevelink, & Fear, 2017). A reliance on social media recruitment has grown as traditional recruitment methods (flyers, newspaper advertisements, mailings, and telephone, as examples) continue to experience barriers to successful study recruitment, especially for hard-to-reach or stigmatized groups (Allison, 2009; Carter-Harris, Ellis, Warrick, & Rawl, 2016; Yancey, Ortega, & Kumanyika, 2006). Facebook recruitment has proven to be a successful strategy used by researchers targeting a diverse range of participants including: Spanish-speaking Latino gay men (Martinez et al., 2014), Black women in high-HIV-prevalent urban areas (Jones, Lacroix, & Nolte, 2015), gay, partnered men (Mitchell, Lee, & Stephenson, 2016), long-term smokers (Carter-Harris et al., 2016), limited English proficient immigrants (Carlini, Safioti, Rue, & Miles, 2015), and adults suffering from depressive symptoms (Morgan, Jorm, & Mackinnon, 2013).

In their study recruiting long-term smokers for an online, cross-sectional survey, Carter-Harris and colleagues (2016) determined that the use of social media (Facebook) was a more

effective recruitment strategy than a traditional recruitment method (newspaper advertisement). Facebook produced more participants than the newspaper advertisement (311 versus 30) for much less cost per participant (\$1.51 versus \$40.80). More importantly, given the built-in level of anonymity and privacy that is conferred by social media, the use of Facebook may have increased participation from people that otherwise may not have responded to traditional recruitment efforts. Specifically, individuals who feared smoking-related stigma may have felt more comfortable engaging in an online setting rather than contacting and interacting with research staff (Carter-Harris et al., 2016).

While several studies have had success using Facebook to recruit a wide range of hard-to-locate and/or stigmatized populations, there is little evidence to suggest how Facebook can be used to recruit transgender and gender non-conforming (TGNC) people (individuals whose sex assigned at birth does not match their gender identity). Historically, TGNC people are underrepresented in peer-reviewed literature (Boehmer, 2002; Reisner et al., 2014). One contributing explanation is that most publicly available, population-based health surveillance surveys do not include questions on gender identity (Patterson, Jabson, & Bowen, 2017; Reisner et al., 2014). Therefore, researchers wishing to document and describe the health of this population must recruit TGNC people into research activities via convenience samples in community-based spaces (Hill et al., 2017; Marshall, Allison, Stewart, Thompson, & Archie, 2018; Rosentel, Hill, Lu, & Barnett, 2016). These spaces may include in-person via TGNC-inclusive organizations or groups, or via online venues, including social media (Vincent, 2018).

There is limited empirical evidence specifically regarding the possible positive or negative consequences of Facebook recruitment for highly-stigmatized groups. However, it is possible that TGNC people recruited into research studies via social media may be at risk for

gender-based digital harassment and abuse during recruitment. The relative anonymity provided by social media creates the potential for increased digital harassment, abuse, and cyberbullying of marginalized groups, including the TGNC population. In their study assessing cyberbullying among young adults worldwide, Myers and colleagues (2017) concluded that transgender participants experienced digital harassment at a significantly higher frequency than cisgender males and females ($x = .75, .25, .26; p < .001$, respectively). Similarly, in their study assessing digital harassment and abuse among adults in England and Australia, Powell and colleagues (2018) concluded that 63.3% of transgender participants reported being threatened with physical harm by another person via an online source, and 60% reported experiencing digital harassment in the forms of offensive posts about their gender and degrading messages about their gender identity and sexuality (Powell et al., 2018).

Study Purpose

The purpose of this research project was to investigate the utility, successes, challenges, and possible positive and negative consequences of using targeted Facebook advertisements as a strategy to recruit TGNC people into a research project.

Methods

The University of Tennessee Institutional Review Board approved all study procedures (UTK IRB-16-03275-XP).

Targeted Facebook Advertisements

For the purposes of this work, a Facebook “user” was defined as a person responsible for creating and distributing a targeted Facebook advertisement. A Facebook “member” was defined as an individual person (or group of people) with specific characteristics, who the desired population of the described Facebook advertisement. Facebook allows users with a publicly

visible community, business, or brand profile page to create advertisements focused to specific populations for specific periods of time for pre-determined budgets. These are called “targeted Facebook advertisements.” These can be, and are, used for recruiting participants into research activities. When designing a targeted Facebook advertisement, users may select attributes of Facebook members that the advertisement will be presented to and the length of time that the advertisement will run. The advertisement is then adjusted to these attributes and time parameters. Users can also set the budget to be spent for the duration of the advertisement (Facebook, 2019).

“Targeting the advertisement” means that the user selects the attributes that will define the core Facebook audience using five pre-established categories: location (specific countries, cities, geographical regions, or states); demographics (i.e.: age, gender, education, relationship status, job title); interests (i.e.: specific interests or hobbies); behaviors (i.e.: previous purchase history, device usage); and connections (members who like a specific Facebook page or event) (Facebook, 2019). These five attributes can also be used to exclude select Facebook members from viewing the advertisement based on researcher pre-defined criteria. The use of exclusion criteria can assist Facebook users in reducing visibility of the advertisement to Facebook members who do not meet recruitment eligibility guidelines. Exclusion criteria can be used to exclude Facebook members within specific geographical locations, political affiliations, age ranges, or relationship statuses, as examples.

Users can set the length of time that an advertisement will be visible on Facebook. Users may choose from a pre-determined list of 1, 7, or 14 days, or a custom end date for the advertisement. During this predetermined time, Facebook members targeted by the predefined attributes will be exposed to the advertisement in their newsfeed. A Facebook newsfeed is a list

of posts, stories, or advertisements that appear in the middle of a Facebook's member's screen (Carter-Harris, 2016). Within a newsfeed is where Facebook members choose stories, posts, or advertisements with which to engage.

After the advertisement's duration is determined, users are instructed to select a total budget for the advertisement. The overall total budget for the advertisement is determined solely by the Facebook user and can range from \$1.00 to an unlimited amount. While Facebook does not set a cap for the maximum expense of an advertisement, a minimum budget of \$1.00 per day of the advertisement's duration is required (Facebook, 2019). A combination of the core target audience characteristics, the duration of the advertisement, and the total budget, make up Facebook's algorithm for the total estimated number of Facebook members that will see an advertisement per day. Users then have the option to alter any of this content (who, when, or how much) to adjust the estimated total audience reach for the advertisement.

Once Facebook members are exposed to an advertisement in their newsfeed, they have the ability to interact with the advertisement via Facebook "engagements." Engagement on Facebook is when people perform actions on the content provided. Facebook members can engage with an advertisement by reacting to it (pressing the "like", "love", "haha", "sad," or "angry" reaction button built into Facebook), clicking on it, sharing it to their own private or public Facebook page, or commenting on it (Facebook, 2019).

Recruitment

Participants in this project were originally recruited via targeted Facebook advertisements for a project that investigated experiences of food insecurity among TGNC people living in the Southeast U.S. (Russomanno, Patterson, & Jabson, 2019). Using a public Facebook page designed to represent a public health research lab at a state university, two successive

recruitment cycles were conducted in April and June 2017. The same image and text (Figure 3.1) were used in both recruitment cycles, containing a brief introduction to the study and contact information for the study's principal investigator (PI).

Recruitment cycle 1. The Cycle 1 advertisement began on April 21, 2017, and ran continuously for 7 consecutive days. The total Cycle 1 advertisement budget was \$60 USD. When designing the Cycle 1 recruitment advertisement, select attributes were determined by the research team to further define our desired core target audience. The following attributes were selected within Facebook's 5 core target audience defining categories:

Location: Southeast United States: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia

Demographics: Adults age 18-50; male and female genders; identify as lesbian, gay, bisexual, or transgender (LGBT); Exclude no one

Interests: Include Facebook members with 24 unique interests; Exclude no one (see Table 3.1 for a complete list of defined included and excluded interests)

Behaviors: None defined

Connections: None defined

Based on these defined attributes, Facebook's algorithm determined the advertisement's estimated total reach to be between 10,000 – 28,000 Facebook members.

Recruitment cycle 2. The Cycle 2 advertisement began on June 1, 2017, and ran continuously for 5 consecutive days. The total Cycle 2 advertisement budget was \$50 USD. During Cycle 2, the following attributes were selected within Facebook's 5 core target audience defining categories:

Location: Southeast United States: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia

Demographics: Adults age 18-50; male and female genders; identify as LGBT; Exclude Facebook members with a Conservative political viewpoint and those who work for the Republican National Committee or the Republican Party

Interests: Include Facebook members with 10 unique interests; Exclude Facebook members with 5 unique interests (see Table 3.1 for a complete list of defined included and excluded interests)

Behaviors: None defined

Connections: None defined

Based on these defined attributes, Facebook's algorithm determined the advertisement's estimated total reach to be between 7,100 – 19,000 Facebook members.

Measures

Facebook member engagement with each recruitment advertisement cycle was measured by counting number and type of reactions, number of shares, and number and quality of comments. Facebook monitors these forms of engagement in real time for the duration of each recruitment cycle and provides counts and summaries of each form of engagement at the cycle's conclusion. Research team members were notified on their cellular phones each time there was engagement with the recruitment advertisement. Facebook notifications are updates that Facebook sends to users reflecting any activity on Facebook advertisements or posts with which the user is associated (Facebook, 2019). Once the advertisement's designated duration has concluded, Facebook produces a summary of the advertisement's overall results including the

total number of Facebook members reached by the advertisement and the number of specific engagements on the advertisement. After each cycle was completed, measures of engagement were downloaded from Facebook by the PI of the study.

Analysis

Summary and descriptive statistics were calculated using Facebook's auto-generated engagement activity for both recruitment cycles. Counts of specific reactions, shares, and comments were tallied and summarized for each advertisement cycle. Individual advertisement cycle counts were then entered into Microsoft Excel and compared between cycles. Open-ended comments posted by Facebook members in reaction to each advertisement were consistently and continuously monitored by research team members throughout each advertisement's duration.

Results

Summary Statistics

Table 3.2 summarizes engagement activity for both recruitment cycles. Figures 3.2 and 3.3 provide an overview of Cycle 1 and Cycle 2's summary statistics auto-generated by Facebook at the conclusion of both cycle's durations. TGNC participants were successfully recruited from both cycles. Seven participants were recruited from Cycle 1. Seven participants were also recruited from Cycle 2, with 3 additional people contacting the PI to participate after the study was closed to recruitment.

The Cycle 1 advertisement reached 8,518 Facebook members with 188 engagements (reactions, comments and shares). The Cycle 2 advertisement reached 6,976 Facebook members with 166 engagements. The Cycle 2 advertisement received more positive feedback from Facebook members than Cycle 1; Cycle 2 advertisement had a 40% increase in positive reactions (likes and loves; 67 in Cycle 1 vs. 94 in Cycle 2) and a 122% increase in post shares by

Facebook members compared to Cycle 1 (18 in Cycle 1 vs. 40 in Cycle 2). Compared to Cycle 1, Cycle 2 reached 178 more Facebook members on a daily basis due to the increase in advertisement post shares.

Negative Consequences of Targeted Facebook Advertisements

During recruitment Cycle 1, negative engagements were made by Facebook members on the advertisement's post including reactions of "haha" ($n = 9$), "angry" ($n = 3$), and "sad" ($n = 1$). There were also several negative, cyberbullying comments made by Facebook members. The comments were derogatory in nature, inflammatory, and potentially emotionally and mentally damaging to the TGNC community. As soon as negative comments and cyberbullying began during Cycle 1, research team members monitored the advertisement 24 hours a day, 7 days a week for any potential negative comments, reactions, or private messages. Hateful or negative comments made on the advertisement were immediately deleted by research team member.

When using targeted Facebook advertisements to recruit gay men into a 2015 research project, Mitchell and colleagues (2016) received negative feedback to their advertisement in three forms: public comments posted on the Facebook advertisement and on the study's public Facebook page, private messages sent to the Facebook study's page, and voicemail. When addressing their experiences of cyberbullying during recruitment with Facebook representatives, Mitchell and colleagues (2016) learned that any interests used as categories for targeted Facebook advertisements included Facebook members who had indicated both positive and negative views about a given interest. This means that Facebook members with negative views or opinions about a given interest may get inadvertently exposed to an advertisement. This unintended exposure creates a context in which negative-view Facebook members can engage with an advertisement, potentially creating a scenario in which these members feel compelled to

make negative comments and engage in cyberbullying toward the intended community (Mitchell et al., 2016).

In our study, the inadvertent exposure of the advertisement to negative-view Facebook members during Cycle 1 resulted in transphobic and discriminating comments on the advertisement. After the Cycle 1 experiences and applying similar exclusion criteria set forth by Mitchell and colleagues (2016), the aforementioned exclusion criteria was added to the Cycle 2 recruitment advertisement. After exclusion criteria was added to our Cycle 2 advertisement, the advertisement received much more favorable and positive interactions from Facebook members. During recruitment Cycle 2, negative engagements were minimal, receiving only 2 “haha” reactions. Comments made by Facebook members during Cycle 2 were positive and supportive of the TGNC community. An example of a positive comment thread received during Cycle 2 is included as Figure 3.4.

Discussion

The purpose of this research project was to investigate the utility, successes, challenges, and positive and negative consequences of using targeted Facebook advertisements as a strategy to recruit TGNC people into a research project. TGNC people were recruited into a research project using Facebook, therefore, Facebook was determined to be a successful recruitment tool for the TGNC population. However, using Facebook to recruit TGNC people also produced unanticipated negative consequences for potential project participants and research staff. During recruitment Cycle 1, negative engagements in the form of degrading and derogatory comments were made by Facebook members on the advertisement’s post. The comments were discriminatory in their messages and intent, which could have resulted in mental and emotional distress for potential study participants. The receipt of hateful and discriminatory comments is

consistent with previous studies by Myers (2017) and Powell (2018) where study participants who identified as transgender reported high rates of digital harassment and abuse in online settings. (Myers et al., 2017; Powell et al., 2018).

In addition to the potential damaging consequences for potential study participants, negative Facebook comments can also adversely affect research team members who serve in roles that are responsible for managing and monitoring the advertisement. For research team members who identify as members of or allies to the TGNC community and the Lesbian, Gay, Bisexual, Transgender, and Queer (LGBTQ) community, witnessing digital harassment and abuse can be especially damaging. In our study, the research team was comprised of three cisgender females who all identify as members of the LGBTQ community, and exposure to negative, hateful, and stigmatizing comments toward other members of the LGBTQ/TGNC community resulted in secondary trauma for team members.

Secondary traumatic stress (STS), or “compassion fatigue,” experienced by research staff is not widely addressed in published literature. Qualitative scholars (Rager, 2005a, 2005b), those engaged in feminist social work (Wahab, Anderson-Nathe, & Gringeri, 2014), and those who conduct research with trauma counselors or therapists (Jenkins & Baird, 2002) discuss STS as a common emotional response to engaging with challenging or emotionally-laden subjects or experiences. Researchers involved in the recruitment of stigmatized populations who witness and manage adverse events, including harassment and abuse, may experience similar instances of STS. For researchers engaged in difficult and challenging subject matter, STS can occur when team members are given the ability to see the world through their participants’ eyes (Rager, 2005b). In our study, team members were exposed daily to the digital harassment and abuse faced by TGNC community members. Researchers who have a personal connection to the

subject matter, or who have experienced their own personal trauma, are also at a high risk of experiencing STS (Baird & Kracen, 2006). To mitigate the potential effects of STS, weekly debrief sessions were held for all research team members to reflect and discuss emotional or mental reactions resultant from witnessing negative, degrading, and damaging Facebook advertisement comments.

Lessons Learned

With careful consideration and strategic planning, targeted Facebook advertisements can be a useful recruitment method. First, research team members must consider both inclusion and exclusion criteria across Facebook's five pre-established categories when selecting an audience for an advertisement. If careful attention is not paid to inclusion and exclusion criteria within these categories in advance of the advertisement's launch, potential research participants are at risk of digital harassment and abuse.

Second, a safety and monitoring protocol (The Social Media Recruitment Monitoring and Safety Protocol) should be developed prior to launching any recruitment process that uses targeted Facebook advertisement to recruit a highly-stigmatized population. The Social Media Recruitment Monitoring and Safety Protocol should, at a minimum, describe in detail the process for monitoring, responding to, and reporting and documenting interactions with targeted Facebook recruitment advertisements.

Monitoring. Protocol must include detailed expectations for which team member is responsible for monitoring the recruitment advertisement. It will also include detailed information about monitoring intervals, duration, and frequency of monitoring. Depending on the current social climate, sensitivity of the subject matter, and marginalized nature of the desired target audience, monitoring may vary. In our project, recruitment advertisements and comment

threads were monitored by research staff at all times, even during sleeping hours, to ensure potential study participants were not being threatened or harassed. A detailed monitoring log, outlining roles and responsibilities during set times should be scheduled in advance and discussed among team members to ensure appropriate distribution of workload, and support to research team members as needed.

Each team member should download the Facebook mobile application to their cellular telephones and set their individual preferences to receive advertisement notifications immediately after a comment, reaction, or share is made on the Facebook advertisement. This will ensure that all team members are notified immediately upon an engagement with the advertisement. For this option to work effectively, each team member will need to create their own individual Facebook profile. Team members without an individual Facebook profile will not be able to actively monitor or engage with Facebook advertisements.

Responding. Team members should develop a detailed protocol for how to respond to comments made on a Facebook advertisement. At all times, one team member should be the primary responder to comments made to Facebook posts. Schedules and shifts of team members should be determined and agreed to in advance of the advertisement recruitment cycle. Once determined, the primary responder should “hide” any negative or potentially damaging comments so they are no longer visible to other Facebook members, yet still visible to other research team members. Hiding a comment, rather than deleting it, will allow the research team time to record the comment and potentially block the Facebook member who made the comment from accessing the post in the future. An example of how to “hide” a comment in Facebook is included as Figure 3.5.

Research team members have an option to adjust Facebook advertisement settings to minimize damaging comments throughout an advertisement cycle. Figure 3.6 outlines options that are available to all Facebook users who have a public profile page. Under “settings” on each public Facebook page, users have the option to limit posts made by visitors on a page, select words that will automatically trigger Facebook to hide a comment, and set a profanity filter. Any Facebook comment containing these trigger words, or those using profanity, will automatically be hidden by Facebook, eliminating their visibility to the general public. Team members then have the option to review the comment and determine whether it should be made visible or deleted permanently from the advertisement.

Reporting. Research team members should work together to determine a protocol for reporting negative comments received on a Facebook advertisement. This protocol should include taking screen shots of the comment and saving the images in a secure, password-protected location for future reference. The PI of the study should also be notified by other research team members of any negative, damaging, or offensive comments made on the Facebook advertisement. A detailed log book of the event, time, and Facebook member who made the comment should be kept by the PI for future reference.

In summary, Facebook can be a useful tool when recruiting hard-to-reach, stigmatized populations. Targeted Facebook advertisements have the ability to reach large numbers of potential participants that otherwise may be hidden to research staff. However, for all the benefits that Facebook recruitment provides, there are negative consequences of this method. Careful consideration and detailed protocol developed in advance of targeted Facebook advertisements can help minimize and mitigate the risk to potential research participants and research team members.

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Appendix Tables and Figures

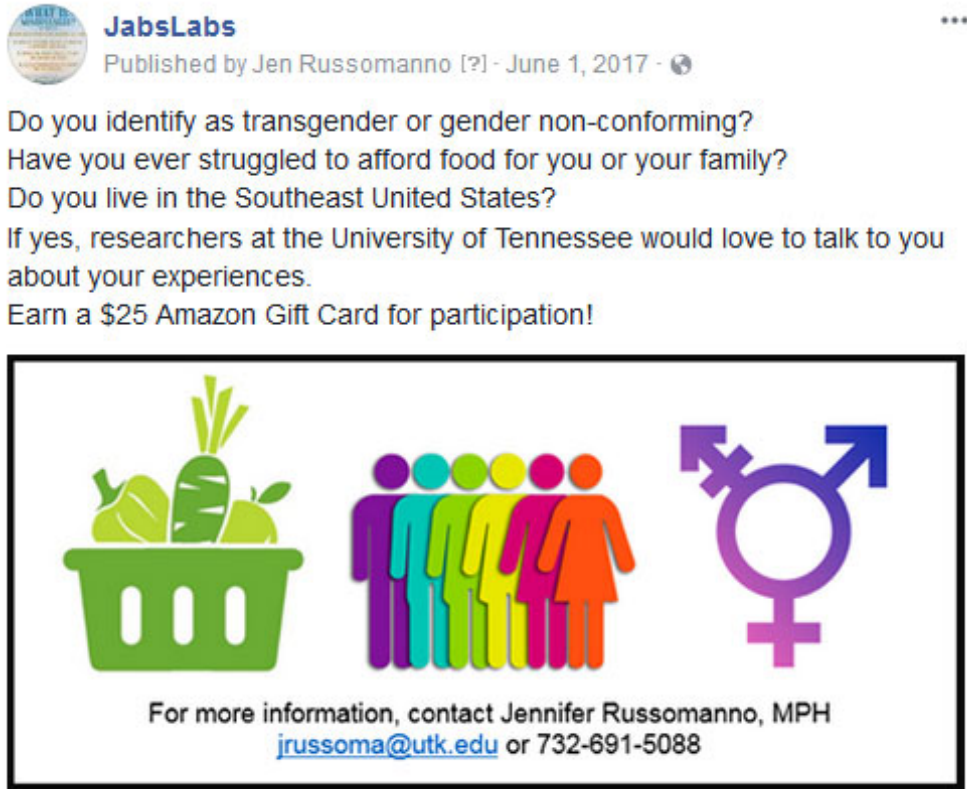


Figure 3.1. Targeted Facebook advertisement

Table 3.1. Inclusion and exclusion criteria for recruitment cycles 1 and 2

Cycle 1: Inclusion Criteria	Cycle 2: Inclusion Criteria
<i>Interests</i> (Demographic) - LGBT <i>Additional Interests</i> Coming Out Gay Pride Gay Times Gay, Lesbian, Bisexual, Transgender, Straight Alliance Gender Identity Genderqueer Homosexuality Human Rights Campaign Lesbian, Gay, Bisexual, Transgender Community Center LGBT Community LGBT Network LGBT Social Movements National Center for Transgender Equality Out Magazine Pink (LGBT magazine) Same-sex marriage Trans women Transgender Transgender activism Transgender Day of Remembrance Transgender Law Center Transgender Youth Transgenderism	<i>Interests</i> (Demographic) - LGBT <i>Additional Interests</i> Gay, Lesbian, Bisexual, Transgender, Straight Alliance Genderqueer Lesbian, Gay, Bisexual, Transgender Community Center National Center for Transgender Equality Trans women Transgender Transgender activism Transgender Day of Remembrance Transgender Law Center Transgenderism
Cycle 1: Exclusion Criteria	Cycle 2: Exclusion Criteria
None	<i>Demographics > Politics</i> U.S. Politics (Conservative) <i>Demographics > Work > Employers</i> Republican National Committee Republican Party <i>Interests > Additional Interests</i> Donald Trump Guns & Ammo Mike Pence Paul Ryan The Conservative

Table 3.2. Facebook engagements for recruitment cycles 1 and 2

Interactions	Cycle 1 (7 days) (n = 8,518)	Cycle 2 (5 days) (n = 6,976)	Difference
Total engagement (reactions, comments & shares)	188	166	-22
Positive Interactions			
Total “likes” 👍	65	87	22
Total “loves” ❤️	2	7	5
Total shares	18	40	22
Negative Interactions			
Total “haha” 😂	9	2	-7
Total “sad” 😞	1	0	-1
Total “angry” 😡	3	0	-3
Other interactions			
Total comments	91	30	-61
Total person reach per day	1217	1395	178



Figure 3.2. Cycle 1 advertisement Facebook summary report

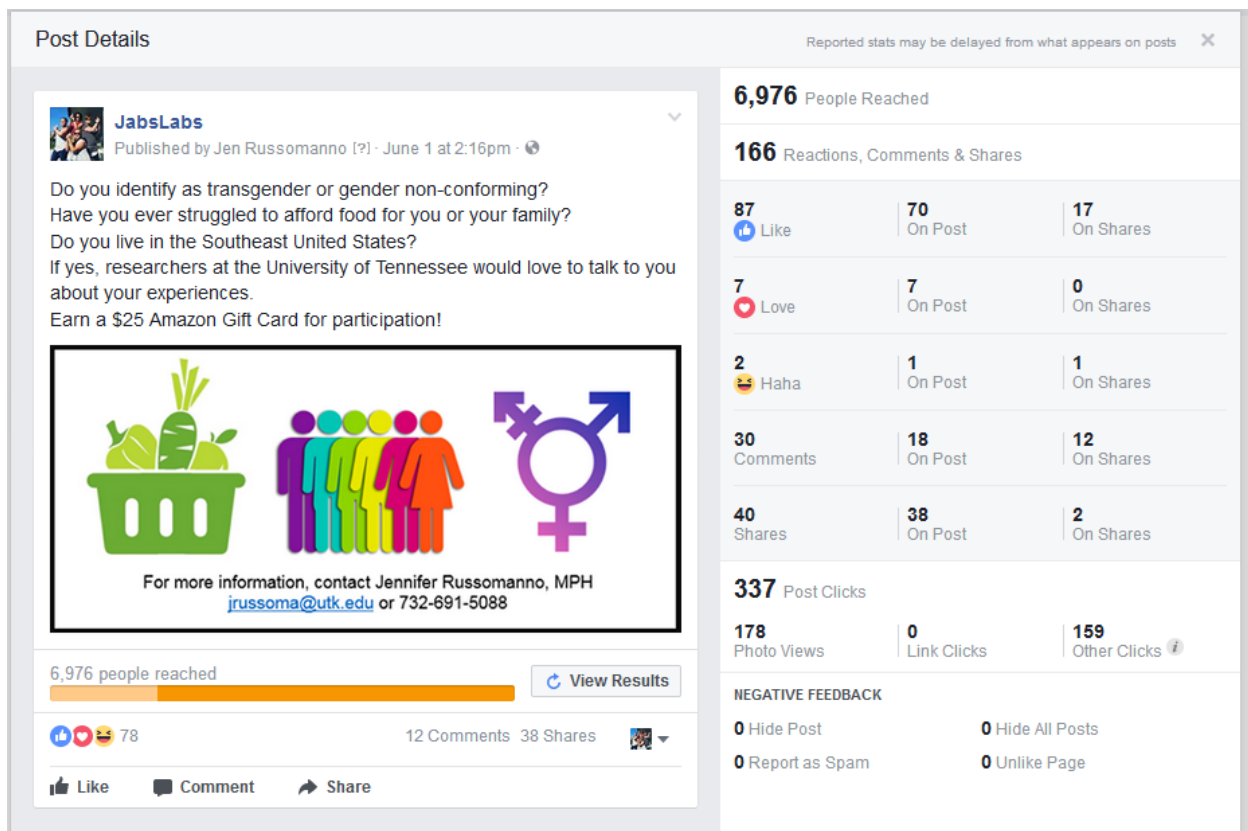


Figure 3.3. Cycle 2 advertisement Facebook summary report

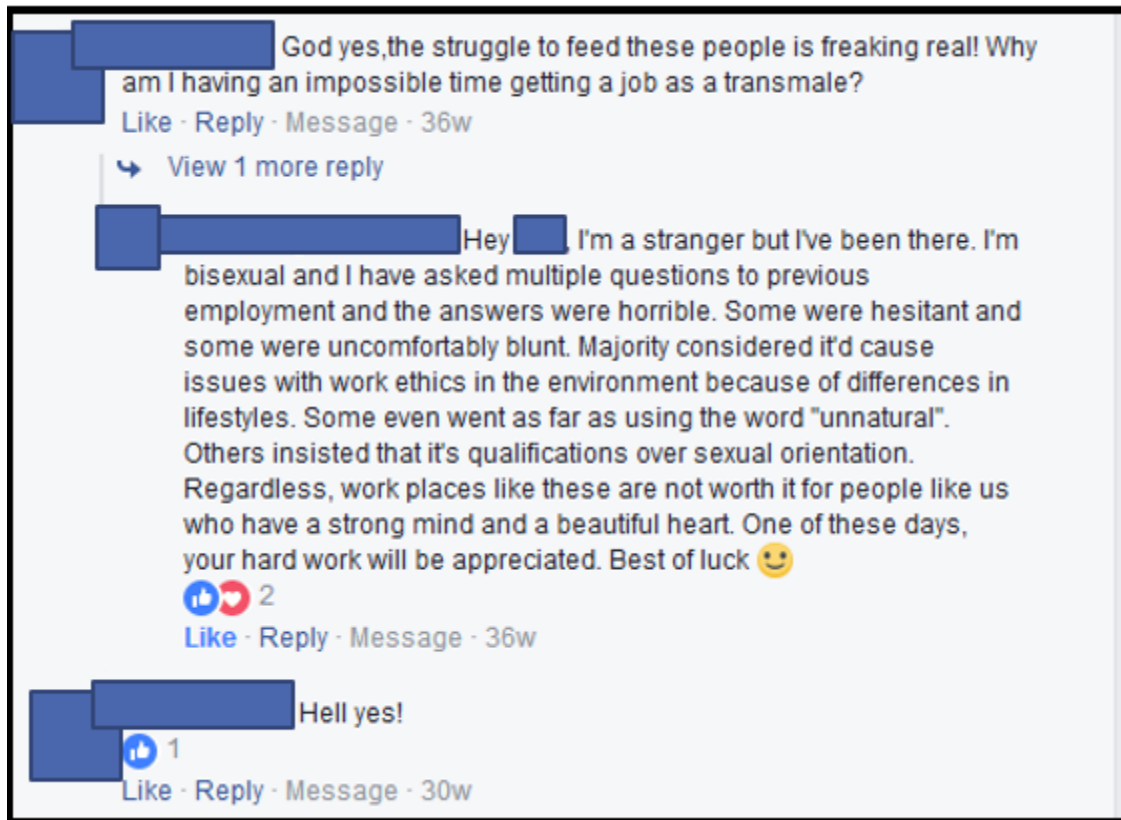


Figure 3.4. Sample supportive comment thread received during cycle 2

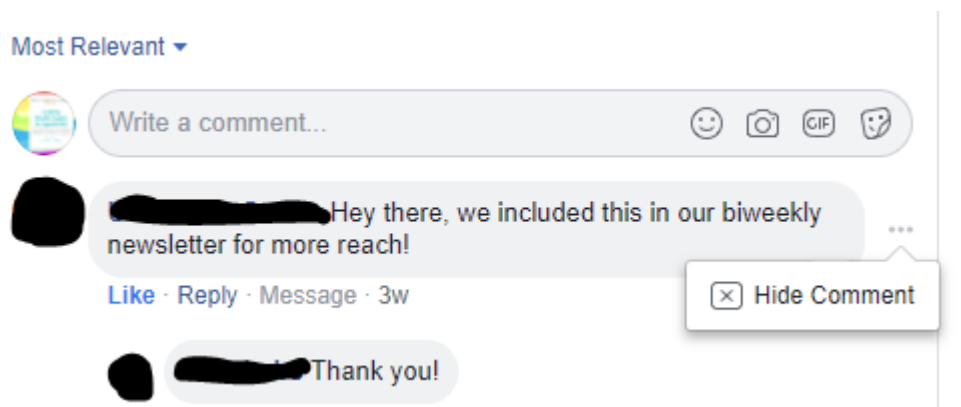


Figure 3.5. Hiding a Facebook comment

Page
Ad Center 1
Inbox 20+
Notifications 33
Insights
Publishing To...
More ▾
Settings
Help ▾

General

Messaging

Page Info

Templates and Tabs

Post Attribution

Notifications

Messenger Platform

Page Roles

People and Other Pages

Preferred Page Audience

Authorizations

Branded Content

Instagram

Featured

Crossposting

Page Support Inbox

Activity Log

Page Visibility
Page published
Edit

Visitor Posts
Choose who can publish to your Page timeline
Edit

Post and Story Sharing
Post sharing to Stories is On
Edit

Audience Optimization for Posts
The ability to select News Feed targeting and restrict the audience for your posts is turned on
Edit

Messages
People can contact my Page privately.
Edit

Tagging Ability
Only people who help manage my Page can tag photos posted on it.
Edit

Others Tagging this Page
People and other Pages can tag my Page.
Edit

Page Location for Effects
Other people can use your Page's location for photo and video frames and effects.
Edit

Country Restrictions
Page is only shown to people in United States
Edit

Age Restrictions
Page is shown to everyone.
Edit

Page Moderation
Posts containing these words are blocked:
fag, dick, faggot, shemale, fags, faggots, tranny, butch, shim, dyke, freak, freaks
Edit

Profanity Filter
Set to strong
Edit

Similar Page Suggestions
Choose whether your Page is recommended to others
Edit

Page Updates
Page posts are automatically published when you update Page info, reach milestones, receive reviews and more.
Edit

Post in Multiple Languages
Ability to write posts in multiple languages is turned on
Edit

Translate Automatically
Your posts may show translations automatically for people who read other languages
Edit

Comment Ranking
Most relevant comments are shown for my Page by default.
Edit

Content Distribution
Downloading to Facebook is allowed.
Edit

Download Page
Download Page
Edit

Merge Pages
Merge duplicate Pages
Edit

Remove Page
Delete your Page
Edit

Figure 3.6. Public Facebook page settings

Chapter IV

Food Insecurity and Food Pantry Use among Transgender and Gender Non-conforming People in the Southeast United States

Abstract

Purpose. Nearly nothing is known about food insecurity in the transgender and gender non-conforming (TGNC) community. Most national population-based surveys do not include information on gender identity, rendering this population nearly invisible to public health professionals. However, TGNC people face high rates of poverty, joblessness, and homelessness, which are primary drivers of food insecurity in the general population. This study investigated food insecurity among TGNC individuals living in the Southeast United States (U.S.), documented the experiences had by TGNC people when they utilize Federal and local food assistance resources, and determined how gender-related minority stressors and community resilience were related to food insecurity and the use of local food assistance resources.

Methods. In January and February 2019, a cross-sectional, online survey was conducted with TGNC people living in the Southeast U.S., recruited via targeted Facebook advertisements.

Results. In total, 105 TGNC people completed the survey. Results indicated that a large majority of survey respondents experienced food insecurity (80.5%), few utilized Federal (19%) and local (22%) food assistance resources, and high levels of both minority stress and community resilience were reported by survey respondents. Minority stress indices were not related to food insecurity or the use of local food pantries. However, community resilience measures were related to the use of local food pantries.

Conclusion. TGNC people living in the Southeast U.S. experienced food insecurity, unstable housing, low wages, and social stigma. Multi-level public health solutions are required to address issues of food insecurity in the TGNC population. Structurally, Federal or State level legislation must be established to protect TGNC people from social stigma and discrimination. Community-

wide, TGNC-friendly community organizations should partner with local food pantries to ensure a safe, affirming environment is being created for TGNC people in need of food assistance.

Introduction

In the United States (U.S.), 1 of every 8 people (or 42 million) is food insecure (United States Department of Agriculture, 2017b). Food security is defined as access by all people at all times to enough food for an active, healthy life and, at minimum, includes: (1) the availability of nutritionally adequate and safe foods, and (2) the assured ability to acquire food in a socially acceptable way (United States Department of Agriculture, 2014). People who are able to meet these standards on a daily basis are considered food secure, and those that cannot are considered food insecure (United States Department of Agriculture, 2014). Food insecurity in the U.S. has been identified by the Centers for Disease Control and Prevention (CDC), the U.S. Department of Agriculture (USDA), and the Office of Disease Prevention and Health Promotion as a pressing public health challenge, as it contributes to hunger, obesity, chronic disease, and poor overall health (Gregory & Coleman-Jensen, 2017; Office of Disease Prevention and Health Promotion, 2019; Seligman, Laraia, & Kushel, 2010; United States Department of Agriculture, 2017b).

Food insecurity disproportionately affects certain groups of people, including those living in poverty, people who are under or unemployed, and the homeless (Seligman et al., 2010; The United States Conference of Mayors, 2016; United States Department of Agriculture, 2017b). Transgender and gender non-conforming (TGNC) people (individuals whose sex assigned at birth does not match their gender identity) are a diverse group of people who experience some of the worst contexts for these drivers of food insecurity. Based on the 2015 U.S. Transgender Survey (USTS) (James, 2016), TGNC people are 4 times more likely than cisgender (non-transgender) people to have incomes below \$10,000/year. They are 3 times more likely to be unemployed, and 2.5 times more likely to experience homelessness in their lifetimes when compared to their cisgender counterparts (James, 2016).

In addition to economic and structural risk factors, TGNC people face the burden of minority stress in the form of discrimination, stigma, and marginalization as a result of their non-cisgender identities. Minority stress is a unique form of stress that exists in addition to the daily hassles and life events experienced by all people (Meyer, 1995). Minority stress is chronic and ongoing, cumulative, and institutional, as it is built into how organizations and social phenomena function and exists beyond the control of the individual or subgroup it targets (Meyer, 1995).

Minority stress is multi-level and can affect TGNC people's internal perceptions of themselves, their relationships with peers, family members and community members, their integration and acceptance into community groups, clubs or religious institutions, and their rights as dictated by governmental laws and legislation (Hasenbush, Flores, Kastanis, Sears, & Gates, 2014; Meyer, 1995, 2015). Although TGNC can experience multilevel stressors beyond their control, this group is also resilient. Meyer (2015) refers to this resilience as community resilience, or *minority coping*. Community resilience is a sense that individuals can overcome life challenges and obstacles with the assistance of close community networks and support. For TGNC people with strong community or social support, community resilience may serve as a protective factor to experiences of minority stress. Multi-level minority stressors and community resilience are likely to intersect with food insecurity, as they may contribute to or protect against the negative consequences of food insecurity in the TGNC population. However, whether these intersections exist remains an untested empirical question.

Where a person lives can also influence their experiences with food insecurity, minority stress, and community resilience. Of the 12 Southeast U.S. states (Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia), 9 have food insecurity rates above the national average (United States

Department of Agriculture, 2017a). It is estimated that over 380,000 TGNC people live in the Southeast U.S. (Flores, Herman, Gates, & Brown, 2017). TGNC people living in these states may be particularly at risk for increased stigma, marginalization, and discrimination due to the region's socio-politically conservative and religious climate (Hunger Free America, 2017; Movement Advancement Project, 2018). Given the known relationships between systematic discrimination and poverty (DeFilippis, 2016; Lin & Harris, 2009; Sawhill, 1976; Sivanandan, 2001), TGNC people living in this region face high risk contexts for food insecurity.

The Lesbian, Gay, Bisexual (LGB) Social and Political Climate Index detects approximate levels of social stigma, defined as “societal-level conditions, cultural norms, and institutional practices that constrain the opportunities, resources, and wellbeing for stigmatized populations” (Hatzenbuehler et al., 2014). The index is based on four key measures of attitudes about the rights of Lesbian, Gay, Bisexual, and Transgender (LGBT) people and beliefs about LGBT people: approval of marriages for same-sex couples, approval of adoption rights for same-sex couples, approval for laws that protect against lesbians and gay men from employment discrimination, and beliefs that homosexuality are a sin. Scores range from 40-92, with an average nationwide score of 60 (Hasenbush et al., 2014) where higher scores indicate less social stigma and low scores indicate more social stigma. Among the 12 Southeast U.S. states, the average social index score is 50, indicating a high level of social stigma toward LGBT people in this region (Hasenbush et al., 2014). Additionally, none of the 12 Southeast U.S. states have employment or non-discrimination laws in place for LGBT people (Hasenbush et al., 2014), which could result in elevated risk factors for food insecurity among TGNC people. High levels of social stigma combined with non-supportive legal climates decrease the safety, economic

stability, and acceptance of LGBT people living in these states (Hasenbush et al., 2014) and systematically increase risks for food insecurity.

In the general population, local food assistance programs, such as food pantries, are valuable resources to food insecure people. In a typical month, food pantries across the U.S. serve approximately 12.5 million people (Briefel, Jacobson, & Tiehen, 2003). However, it is not known if TGNC people use food pantries or what their experiences are with these local food assistance programs. In our exploratory qualitative study with 20 food insecure TGNC people living in the Southeast U.S., participants recalled feeling uncomfortable and unwelcome at local food pantries because of their gender identity. They described faith-based food pantries as being unaccepting of TGNC people, and, in turn, participants did not utilize these resources even in times of great need (Russomanno, Patterson, & Jabson, 2019).

A majority of U.S. food pantries (67%) are run by faith-based institutions (Briefel et al., 2003), which could pose a great threat to food insecure TGNC people. State Religious Freedom Restoration Acts (RFRA), or “religious freedom laws” allow institutions to deny services to select community members based on religious beliefs (National Conference of State Legislatures, 2017). These laws can translate to local faith-based food pantries, resulting in the potential denial of services to TGNC people and further jeopardizing food access to this already vulnerable population (Hunger Free America, 2017). Currently, 9 of the 12 Southeastern U.S. states (Alabama, Arkansas, Florida, Kentucky, Louisiana, Mississippi, South Carolina, Tennessee, and Virginia) have enacted RFRA laws, with similar legislation proposed in the remaining 3 Southeastern states: Georgia, North Carolina and West Virginia (National Conference of State Legislatures, 2017; Rewire News, 2018). However, there is little evidence

suggesting how TGNC people living in states without non-discrimination laws utilize local food assistance resources.

Study Purpose

Despite growing national attention to food insecurity rates and health consequences in the general population, nearly nothing is known about food insecurity or food access in the TGNC community. A dearth of information in this area prevents public health professionals from providing sustainable solutions that can improve food security and food access in this grossly-understudied population. The purpose of this study was to: (1) document food insecurity experiences had by TGNC individuals living in the Southeast U.S., (2) document the experiences had by TGNC people when they utilize Federal and local food assistance resources, and (3) determine how gender-related minority stressors and community resilience are related to food insecurity and the use of local food assistance resources.

Methods

The University of Tennessee Institutional Review Board approved all study procedures (UTK IRB-18-04907-XP).

Recruitment

From January to February 2019, an online survey of TGNC people living in the Southeast U.S. was conducted. Participants were recruited online via targeted Facebook advertisements. Previous studies suggest that the use of targeted Facebook advertisements is a successful method to recruit members of the LGBT population into research projects (Mitchell, Lee, & Stephenson, 2016; Russomanno et al., 2019). Two successive recruitment cycles were conducted. Both advertisements targeted individuals who had interests in LGBT and TGNC-related topics, resided in the Southeast U.S. (Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana,

Mississippi, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia), and were ages 18-65 years.

The first advertisement (Figure 4.1) included a brief introduction to the study, contact information, a direct link to the survey, and text and images related to food pantry usage and the TGNC community. The first advertisement ran for 14 consecutive days (January 28 – February 10, 2019) with an estimated reach of 9,022 Facebook members. The second advertisement (Figure 4.2) also included a brief introduction to the study, contact information, and a direct link to the survey, but included alternate text, images, and symbols that focused more on the TGNC community as a whole. The second advertisement ran for 10 consecutive days (February 18-28, 2019) with an estimated reach of 6,813 Facebook members.

Eligibility

Eligibility criteria required potential survey participants to: (1) agree to participate via informed consent, (2) live in 1 of the 12 Southeast U.S. states, (3) be over age 18, and (4) self-identify as TGNC. Eligibility was determined with a 4-item pre-screening questionnaire. Responses were required on each item prior to moving on to the full survey instrument. Upon clicking on the survey link embedded in the Facebook advertisement, respondents were directed to an online informed consent form with response options of “agree to participate” or “decline to participate.” Respondents who selected “decline to participate” were considered ineligible to participate, and were directed to the survey completion page. Respondents who selected “agree to participate” were directed to the next pre-screening item, “In which Southeastern U.S. state do you currently live?” This item contained the 12 Southeastern U.S. states as possible responses, plus an alternate response: “I do not live in one of the states listed above.” Respondents who

selected this alternate response were considered ineligible to participate, and were directed to the survey completion page.

Respondents who selected one of the 12 Southeastern U.S. states were then directed to the next pre-screening item: “Are you 18 years of age or older?” Respondents who selected “no” were considered ineligible to participate, and were directed to the survey completion page. Respondents who selected “yes” were directed to the final pre-screening eligibility item (James, 2016): “This is a survey for people who are transgender, trans, or non-binary. Transgender, trans, non-binary are all gender identities that a person may hold. These identities are experienced when one’s personal sense of gender identity and sex assigned at birth, do not match. It doesn’t matter if the person has undertaken gender affirmation process, transition or if one plans to.” Respondents who selected “this survey does not apply to me” were considered ineligible to participate, and were directed to the survey completion page. Those that selected “this survey applies to me” were directed to the full survey instrument.

Survey participation was voluntary and confidential. Each respondent was assigned a unique identification number to maintain confidentiality. Respondents who desired could provide a valid name and email address to be entered to win 1 of 4 randomly-selected \$50 electronic gift cards. Names and email addresses were not associated with survey responses.

Participation. As depicted in the flow diagram (Figure 4.3), 742 people clicked on the survey link embedded in the Facebook advertisement. Of those who clicked on the survey link, 166 (22.4%) agreed to participate after reviewing the consent form. Of those who agreed to participate, 19 (11.4%) either did not meet eligibility criteria ($n=16$) or left the survey prior to the first question of the full survey ($n=3$). Of the 147 respondents who moved on to the full survey,

79 responses (53.7%) were collected from the first Facebook recruitment advertisement, and 68 responses (46.3%) were collected from the second Facebook advertisement.

Measures

The complete survey instrument is included as Appendix B. The cross-sectional survey was conducted online via Qualtrics and divided into 4 parts: (1) food security; (2) use of local and Federal food assistance programs; (3) gender-related stress and resilience measures; and (4) demographic information.

Food security. Food security was assessed using the USDA “6-item” Short Form Food Security Module (United States Department of Agriculture, 2017c), included as Figure 4.4. The 6-item food security module is approved by and deemed an acceptable measure of household food security by the USDA (United States Department of Agriculture, 2017c). The measure identifies food insecure households and households with very low food security with reasonably high specificity and sensitivity and minimal bias compared with the larger, more robust USDA 18-item U.S. Household Food Security Survey Module (United States Department of Agriculture, 2017c). The Cronbach’s alpha (α) for the scale ranges from 0.74 to 0.93 (Keenan, Olson, Hersey, & Parmer, 2001).

USDA-recommended scoring guidelines (United States Department of Agriculture, 2017c) were used to code responses to the module. In the first 2 items, “The food that I bought just didn’t last, and I didn’t have money to get more,” and “I couldn’t afford to eat balanced meals,” response options included: “often true; sometimes true, never true; do not know; prefer not to answer.” Responses of “often true” or “sometimes true” were coded as “1,” and “never true” responses were coded as “0.” In item 3, respondents were asked “In the last 12 months, since last January, did you ever cut the size of your meals or skip meals because there wasn’t

enough money for food?” Response options included “yes; no; do not know; prefer not to answer.” All “yes” responses were coded as “1,” and all “no” responses were coded as “0.”

Respondents who responded “yes” to Item 3 were directed to a follow-up question (Item 4), “How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?” Responses of “almost every month” or “some months but not every month” were coded as “1,” and “only 1 or 2 months” responses were coded as “0.” Respondents who selected “no” or “do not know” to Item 3 were re-directed to Item 5, bypassing Item 4.

In items 5 and 6, beginning with “In the last 12 months, since last January,” respondents were asked if they ever ate less than they felt they should because there wasn't enough money for food and if they were ever hungry but didn't eat because there wasn't enough money for food. Response options included “yes; no; do not know; prefer not to answer.” Responses of “yes” were coded as “1,” and “no” responses were coded as “0.” All “do not know” and “prefer not to answer” responses to any module item were coded as missing.

USDA-recommended scoring guidelines (United States Department of Agriculture, 2014) were used to calculate participant food security scores. First, scores from the 6 items were summed, with a total possible individual score of 0-6. Next, scores were collapsed into 4 categories: 0=high food security (coded as 0), 1=marginal food security (coded as 1), 2-4=low food security (coded as 2), or 5-6=very low food security (coded as 3). These 4 categories were then collapsed into 2 overarching categories used in analyses: food secure (raw score 0-1; coded as 0) and food insecure (raw score 2-6; coded as 1). The last item in this section of the survey was designed to capture alternate, non-traditional, socially-unacceptable resources respondents utilized to secure food (such as stealing or scavenging for food).

Local and Federal food assistance programs. To assess respondents' use of local and Federal food assistance resources, a series of 8 items were included. Two survey items were designed to capture participant's experiences with the Federal Supplemental Nutrition Assistance Program (SNAP). Respondents were asked: "Do you currently, or have you in the past 12 months, received assistance through SNAP (formerly known as food stamps)?" Response options included: "yes, I/we currently receive SNAP assistance; "Yes, I/We have received SNAP assistance in the past 12 months, but do not currently receive assistance" or "No, I/We have not received SNAP assistance in the past 12 months." Respondents who indicated any "yes" response were presented a follow-up item: "On average, how much SNAP assistance did/do you receive monthly?" Response options included: "Less than \$50; \$50 - \$99; \$100 – \$149; \$150 - \$199; or "\$200 or more."

Six items were included to capture respondents' experiences with local food pantries. Four of these items were designed to quantitatively assess these experiences. The first item, "Do you currently, or have you in the past 12 months, use local food assistance programs such as food pantries," included three possible responses: "Yes, I/we currently use them;" "Yes, I/we have used them in the past 12 months, but do not currently;" or "No, I/we do not use them and have not used them in the past 12 months." Respondents who indicated they do not currently or have not in the past 12 months used food pantries were presented with a follow-up question: "Why do you not currently use local food pantries (select all that apply.)" Response options included: "I do not need to use these resources at this time;" "I do not feel comfortable using these resources;" and "I did not know these resources existed," among others. Respondents were also asked who organized their local food pantries. Response options included: "church or faith-based organization;" "charitable, non-profit organization (such as Second Harvest);" or "a

college or local university,” among others. Lastly, respondents were asked to rate the welcoming nature of local food pantries for TGNC people using a 5-point Likert-like scale ($0 = \textit{extremely unwelcoming}$, $4 = \textit{extremely welcoming}$), with higher scores indicating a more welcoming environment. Two open-ended questions were included to qualitatively capture participant’s experiences with these resources: “In your own words, please describe how your local food pantry is *welcoming/unwelcoming* to transgender or gender non-conforming people.”

Gender-related stress and resilience. Gender-related stress and resilience were assessed using the Gender Minority Stress and Resilience (GMSR) Measure (Testa, Habarth, Peta, Balsam, & Bockting, 2015), included as Appendix C. The GMSR assesses the experiences of external and internal gender minority stress in the TGNC population, as well as gender minority resilience (Testa et al., 2015). The GMSR consists of 58 items, divided into 9 subscales (*gender-related discrimination, gender-related rejection, gender-related victimization, non-affirmation of gender identity, internalized transphobia, negative expectations for the future, nondisclosure, pride, and community connectedness*). The Cronbach’s alphas obtained on the original subscales ranged from .61 (*gender-related discrimination*) to .93 (*negative expectations for the future*) (Gliem & Gliem, 2003; Testa et al., 2015).

For the first 17 items (subscales: *gender-related discrimination, gender-related rejection, gender-related victimization*), response options included “never; yes, before age 18; yes, after age 18; and yes, in the past year.” Respondents could select more than one response (for example, a participant could select both *yes, after age 18* and *yes, in the past year* if both were true). Per GMSR-scoring guidelines, any “yes” response was coded as “1,” and the never response was coded as “0.” Sample items within these subscales included: “I have had difficulty finding housing or staying in housing because of my gender identity or expression” (*gender-*

related discrimination), “I have been rejected or made to feel unwelcome by a religious community because of my gender identity or expression” (*gender-related rejection*), and “I have been threatened with physical harm because of my gender identity or expression” (*gender-related victimization*).

Items within the subscales of *non-affirmation of gender identity*, *internalized transphobia*, *pride*, and *community connectedness* were scored on a 5-point Likert scale (0 = *strongly disagree*, 4 = *strongly agree*). Sample items within these subscales included: “I have difficulty being perceived as my gender” (*non-affirmation of gender identity*), “I resent my gender identity or expression” (*internalized transphobia*), “My gender identity or expression makes me feel special and unique” (*pride*), “I feel part of a community of people who share my gender identity.” (*community connectedness*). Two items in the *community connectedness* subscale, “I’m not like other people who share my gender identity” and “I feel isolated and separate from other people who share my gender identity” were reversed coded, per GMSR-scoring guidelines.

In two of the GMSR subscales, *negative expectations for the future* and *nondisclosure*, the wording of items vary. Prior to responding to these subscales, respondents were presented with a survey item: “Do you currently live in your affirmed gender* all or almost all of the time? (*Your affirmed gender is the one you see as accurate for yourself.)” Respondents who indicated they live in their affirmed gender all or almost all of the time were presented with the terminology of “gender history” in these two subscales; respondents who indicated that they do not live in their affirmed gender all or almost all of the time were presented with the terminology of “gender identity” in these two subscales. Sample items within these subscales included: “If I express my gender IDENTITY/HISTORY, others wouldn’t accept me” (*negative expectations*

for the future), and “Because I don’t want others to know my gender IDENTITY/HISTORY, I change the way I walk, gesture, sit, or stand” (*nondisclosure*). Items within these 2 subscales were scored on a 5-point Likert scale (*0 = strongly disagree, 4 = strongly agree*). Individual items were summed for each of the 9 subscales, with each subscale having its own individual overall score. Higher scores indicated a higher degree of agreement with the items included in that subscale.

Demographics. Demographic variables included in the survey were: *state of residence*, *gender identity* (Trans Student Educational Resources, 2018), *age* (Centers for Disease Control and Prevention, 2018), *geographic location* (urban, suburban, rural), *marital status* (Centers for Disease Control and Prevention, 2018), *race* (Centers for Disease Control and Prevention, 2018), *ethnicity* (Centers for Disease Control and Prevention, 2018), *education* (Centers for Disease Control and Prevention, 2018), *employment status* (Centers for Disease Control and Prevention, 2018), *household income* (Centers for Disease Control and Prevention, 2018), *housing stability* (United States Interagency Council on Homelessness, 2017), and *number of children in the household* (Centers for Disease Control and Prevention, 2018). Respondents were permitted to manually type in their age (in years), which was then collapsed into 5 categories: 18-24, 25-34, 35-44, 45-54, and 55+. Under education, respondents were able to select from the following choices: (1) never attended school or only attended kindergarten, (2) grades 1-8, (3) grades 9-11, (4) grade 12 or GED, (5) college 1-3 years, or (6) college 4 or more years. These responses were collapsed into 4 categories: (1) less than high school, (2) high school graduate, (3) some college, and (4) college graduate. The remaining demographic variables were left in their original state. All “prefer not to answer” responses to demographic variables were coded as missing.

Pilot test. To ensure survey quality and that questions were appropriate and sensitive to the priority population, the survey was pilot tested with a self-identified transgender male who resided in Knoxville, Tennessee. The pilot tester provided positive feedback about the survey questions and did not suggest any alterations or improvements to the survey experience. Therefore, survey questions were left in their original forms and were not modified prior to public launch.

Statistical Analysis

Sample size. There is a dearth of peer-reviewed literature on food insecurity among TGNC people. Therefore, a pre-hoc power analysis could not be conducted to determine the necessary sample size needed to detect an effect. It was determined that a minimum of 100 survey respondents were needed for addressing research questions and detecting an association between variables if one was present, using logistic regression analyses, as recommended by statistical experts (Long, 1997).

Descriptive and bivariate statistics: Food security. To describe food security among TGNC people in the southeast (Research Question 1), frequency and percentage of survey respondents experiencing food insecurity were calculated. Independent sample t-tests assessed differences in food security status by age and education, both treated as continuous variables. The original continuous version of the age variable (AGE), rather than the collapsed age variable (AGE_FINAL), was used in the independent t-test. Chi square analyses tested for differences in food security by marital status and geographic location, both treated as categorical variables. Counts and percentages of respondents' use of alternate sources for food were also calculated.

Descriptive and bivariate statistics: Local and Federal food assistance. To document the experiences had by TGNC people when they utilize Federal and local food assistance

resources (Research Question 2), frequencies and percentages of survey respondents who received SNAP benefits and utilized local food pantries were calculated. Independent sample t-tests assessed differences in food pantry usage by age and education, both treated as continuous variables. The original continuous version of the age variable (AGE), rather than the collapsed age variable (AGE_FINAL), was used in the independent t-test. Chi square analyses tested for differences in food pantry usage by marital status and geographic location, both treated as categorical variables.

Chi square analyses tested for differences in SNAP receipt by food security status. Chi square analyses were also utilized to test for differences in the use of local food pantries, by food security status and SNAP status. Frequencies and percentages calculated the welcoming nature of local food pantries, by organization type. The 2 open-ended questions: “In your own words, please describe how your local food pantry is *welcoming/unwelcoming* to transgender or gender non-conforming people.” were qualitatively analyzed for overarching themes.

Descriptive statistics: Gender-related minority stress. Mean GMSR subscale scores were tallied for all survey respondents.

Descriptive statistics: Demographics. Frequencies and percentages for all demographic variables were calculated: state of residence, gender identity, geographic location (urban, suburban, rural), age, marital status, race, ethnicity, education, employment status, housing stability, household income, and number of children in the household.

Multivariable analysis. To determine how minority stressors and resilience relate to food security and the use of food pantries (Research Question 3), binary logistic regression analyses were calculated to test associations between GMSR subscale scores and (1) food pantry usage and (2) food security. Six binary logistic regression models were calculated with

adjustment for participant's age, education, marital status and geographic location. The six regression models calculated were: (1) food pantry usage by the 7 full-sample GMSR subscales; (2) food pantry usage by the 2 partial-sample GMSR subscales (*negative expectations for the future* and *nondisclosure*) for the "gender history" participant subgroup; (3) food pantry usage by the 2 partial-sample GMSR subscales for the "gender identity" participant subgroup; (4) food security by the 7 full-sample GMSR subscales; (5) food security by the 2 partial-sample GMSR subscales for the "gender history" participant subgroup; and (6) food security by the 2 partial-sample GMSR subscales for the "gender identity" participant subgroup. For all binary regression analyses, GMSR subscale scores were treated as continuous variables, demographic variables were treated as categorical, and dependent variables (food security and food pantry usage) were dichotomized. Food security was coded as 0 (food secure) or 1 (food insecure). Food pantry usage was coded as 0 (never user) or 1 (ever user).

First, food security was regressed on demographic variables (age, education, marital status, geographic location) and the 7 full-sample GMSR subscale scores (*gender-related discrimination, gender-related rejection, gender-related victimization, non-affirmation of gender identity, internalized transphobia, pride and community*.) Next, food pantry usage was regressed on demographic variables (age, education, marital status, geographic location) and the 7 full-sample GMSR subscale scores. Nested regression models were conducted, with categorical demographic variables included in Block 1 and continuous full-sample GMSR subscale scores in Block 2.

For the GMSR subscales of *negative expectations for the future* and *nondisclosure*, binary logistic regression analyses were run on each unique participant subgroup. First, food security was regressed on demographic variables (age, education, marital status, geographic

location) and the 2 GMSR subscale scores for the participant subgroup who indicated they lived in their affirmed gender all or almost all of the time (“gender history.”) Next, food pantry usage was regressed on demographic variables (age, education, marital status, geographic location) and the 2 GMSR subscale scores on the same participant subgroup. Binary logistic regression analyses using the same independent and dependent variables were repeated for the participant subgroup who indicated they did not live in their affirmed gender all or almost all of the time (“gender identity.”) Nested regression models were conducted, with categorical demographic variables included in Block 1 and continuous GMSR subscale scores of *negative expectations for the future* and *nondisclosure* in Block 2.

Missing data. As recommended (Acock, 2005; Peng, Harwell, Liou, & Ehman, 2006), respondents were excluded from analyses if they were missing more than 20% of survey items. There were no obvious patterns of missingness within excluded cases, therefore, cases were considered missing completely at random (MCAR). Under conditions where data are MCAR, complete removal of cases with 20% or more missing data will not produce biased estimates to the remaining data (Peng et al., 2006). For this project, 42 cases were excluded due to MCAR, leaving 105 cases to be included in the final analyses. Of the remaining cases, 51.4% ($n=54$) originated from the first recruitment cycle, and 48.6% ($n=51$) originated from the second recruitment cycle. The percent of excluded cases differed by recruitment cycle $\chi^2(2, n=147) = 11.02, p = .001$. A majority of excluded cases (78.6%) were from the Cycle 2 recruitment advertisement. However, the percent of excluded cases did not differ by geographical location $\chi^2(2, n=147) = 3.54, p = .17$ or food security status $\chi^2(2, n=116) = .83, p = .36$. No other variables were available from those who were excluded to compare.

Respondents who were missing fewer than 20% of survey items had item-level missing data handled by multiple imputation or mean substitution based on the percent of data missing (Acock, 2005; Parent, 2013; Peng et al., 2006). In the remaining 105 cases, there were varying levels of missing data at the item level ranging from 17.1% (food security) to 0% (state of residence; geographic location; number of children in household). Given the higher level of missingness in the food security variable, multiple imputation (MI) was conducted. The rate of missing information in the food security variable did not exceed 50%, therefore, based on published guidelines, 5 imputations were used in the MI model (Rubin, 2004; Schafer, 1999). The predictive variables used to impute food security in the model were: receipt of SNAP benefits and use of local food pantries. These two variables were chosen as predictor variables based on their association with food insecurity in the general population (Bhattarai, Duffy, & Raymond, 2005; Daponte, Lewis, Sanders, & Taylor, 1998).

For variables with low level missing data (<4%), mean substitution was utilized (Parent, 2013). Previous studies suggest that mean substitution is comparable to more complex methods at when low levels of missingness are present (Parent, 2013; Peng et al., 2006). A summary of missing data values on GMSR subscales, food security, and demographic variables is included as Table 4.1.

All analyses were conducted using IBM SPSS Statistics Version 25 (IBM Corp., 2017).

Results

Participants

Table 4.2 describes survey participant's demographic characteristics. All 12 Southeastern U.S. states were represented in the sample. The majority of respondents resided in Tennessee (26.7%), Georgia (17.1%), and Florida (13.3%). Most respondents were white (85.6%), non-

Hispanic (94.2%), employed or self-employed (55.1%), and had at least some college education (79.6%). The mean age was 27.4 years ($SD = 8.6$). Respondents identified across a range of gender identities; the majority identified as non-binary (40%), transgender male (30.5%), and/or genderqueer (26.7%).

Food Insecurity Experiences (Research Question 1)

Food insecurity was identified among 80.5% of respondents ($n=70$). Among those who were food insecure, 20% ($n=14$) reported low food security, and 80% ($n=56$) reported very low food security. The remaining 19.5% of respondents ($n=17$) were food secure. Among those who were food secure, 64.7% ($n=11$) reported high food security and 35.3% ($n=6$) reported marginal food security. The percent of food insecure respondents did not differ by recruitment cycle $\chi^2(2, n=105) = .30, p = .58$.

Table 4.3 summarizes the independent sample t-tests used to test for differences in food security by age and education. Food insecure respondents ($M = 26.21, SD = 7.45$) were younger than food secure respondents ($M = 32.15, SD = 11.30, t(293) = 2.61, p=.01$). Food insecure respondents ($M = 1.94, SD = 0.82$) also had a lower degree of education than food secure respondents ($M = 2.65, SD = 0.49, t(309) = 3.27, p<.001$).

Table 4.4 summarizes the chi square analyses used to test for differences in food security by marital status and geographic location. The percent of food insecure respondents differed by marital status $\chi^2(2, n=105) = 7.30, p = .026$. A majority of food insecure survey respondents (54.1%) were members of an unmarried couple. The percent of food insecure respondents did not differ by geographic location $\chi^2(2, n=105) = 3.29, p = .19$.

Respondents were asked to disclose all alternate sources (other than traditional grocery stores, restaurants or convenient stores) utilized to secure food (Table 4.5). Food insecure

respondents reported extreme measures to secure food including: scavenging from grocery store or restaurant dumpsters, stealing food from friends or family, and stealing food from restaurants, grocery stores, or convenient stores. Consuming low-cost, energy dense foods such as fast food and processed or packaged products was more common among food insecure respondents (86.6%) than food secure respondents (47.8%).

Utilizing Federal and Local Food Assistance Resources (Research Question 2)

Federal food assistance. A majority of survey respondents reported never receiving SNAP benefits ($n=85$, 81%). Fifteen respondents (14.3%) reported currently receiving SNAP benefits, while 5 (4.8%) reported previously receiving SNAP benefits, but were not currently receiving them. Of respondents who ever received SNAP benefits ($n=20$), monthly benefit amounts ranging from less than \$50 (9.5%) to \$200 or more (42.9%) were reported. The percent of food insecure respondents did not differ by SNAP benefit status $\chi^2(2, n=105) = 3.27, p = .19$.

Local food assistance. A majority of respondents ($n=78$, 74.3%) reported never using local food pantries. Respondents reported not using local food pantries because they did not feel food pantries were meant for them (41%), they did not need to use food pantries at the present time (33.3%), they did not feel comfortable using food pantries (28.6%), they did not feel welcome (18.6%), they did not know food pantries existed in their community (12.4%), and/or they did not have transportation (11.4%). Respondents reported a variety of organizations operated food pantries in their community including churches or faith-based organizations (50.5%), charitable or non-profit organizations (27.6%), and local college or universities (8.6%). The majority of respondents stated that local food pantries were neither welcoming nor unwelcoming (53.5%). Only 13.1% of respondents stated local food pantries were somewhat or

extremely welcoming to TGNC people, and 33.3% stated local food pantries were somewhat or extremely unwelcoming to TGNC people.

Independent sample t-tests used to test for differences in food pantry usage by age and education did not yield significant results. Food pantry “ever users” ($M = 28.62$, $SD = 10.38$) did not differ from “never users” ($M = 26.94$, $SD = 7.94$, $t(102) = -.86$, $p = .39$) by age. Additionally, food pantry “ever users” ($M = 2.00$, $SD = .88$) did not differ from “never users” ($M = 2.10$, $SD = .80$, $t(103) = .56$, $p = .58$) by education. Chi square analyses used to test for differences in food pantry usage by marital status and geographic location were also non-significant. The percent of respondents who used food pantries did not differ by marital status $\chi^2(2, n=105) = .39$, $p = .82$ or by geographic location $\chi^2(2, n=105) = .88$, $p = .64$.

Chi square analyses used to test for differences in food pantry usage by SNAP status and food security status returned non-significant results. The percent of respondents who used food pantries did not differ by SNAP status $\chi^2(2, n=105) = 4.90$, $p = .08$. Additionally, the percent of respondents who used food pantries did not differ by food security status $\chi^2(1, n=105) = 3.19$, $p = .07$.

Table 4.6 summarizes open-ended participant responses regarding the welcoming nature of local food pantries to TGNC people. Qualitative responses indicated that respondents felt unwelcome at local food pantries due to their TGNC status, particularly at pantries operated by a church or faith-based organization. One participant stated, “People are required to sit through a church service, and the pastor has spoken against homosexuality, which made me uncomfortable.” Another recalled, “It is Christian based and that tends not to go well for us here.” Respondents also suggested that food pantries may be unwelcoming due to the socio-conservative climate of the Southeast U.S. states. One participant stated, “I’m in the Bible Belt,

they say we do not exist or are mentally challenged.” Another recalled, “Tennessee resents people like us. That’s fact.” A third participant stated, “We are surrounded by hate and transphobes.”

Gender-related Minority Stressors and Community Resilience (Research Question 3)

Gender-related minority stress. Table 4.7 summarizes the GMSR mean and Cronbach’s alpha scores for all subscales. Survey respondents had scores above the mean in all subscales with the exception of *gender-related victimization* ($M = 2.54$, $SD = 1.93$) and *internalized transphobia* ($M = 15.51$, $SD = 8.81$). The highest scores were received in *gender-related rejection* ($M = 4.07$, $SD = 1.48$) and *non-affirmation of gender identity* ($M = 18.83$, $SD = 5.77$). In response to the question, “Do you currently live in your affirmed gender all or almost all of the time,” 74 respondents (70.5%) stated they lived in their affirmed gender all or almost all of the time and were presented with the terminology of “gender history” in the subscales of *negative expectations for the future* and *nondisclosure*. Thirty-one respondents (29.5%) stated they did not live in their affirmed gender all or almost all of the time and were presented with the terminology of “gender identity” in the aforementioned subscales. Scale alphas in this study sample ranged from .55 for *gender-related rejection* to .90 for *non-affirmation of gender identity* and *internalized transphobia*.

GMSR and food pantry usage. In the first regression model (Table 4.8), food pantry usage was regressed on the 7 full-sample GMSR subscale scores and participant’s age, education, marital status and geographic location. The two resilience GMSR subscales, *Pride* and *Community connectedness* were significantly associated with the use of local food pantries. There was a positive relationship between the GMSR *Pride* subscale and the use of food pantries (aOR = 1.11, 95% CI 1.02, 1.22, $p=.02$) with adjustment for respondents’ age, education, marital

status and geographic location. Respondents who were more self-assured in their gender identity were 11% more likely to use food pantries than those who were less-assured. There was also a negative relationship between the GMSR *Community connectedness* subscale and the use of food pantries (aOR = 0.89, 95% CI 0.79, 1.00, $p=.05$). Respondents who felt a greater connection to the TGNC community were 11% less likely to use food pantries than those that were less connected to the TGNC community. No significant relationships were found between any of the remaining full-sample GMSR subscale scores and food pantry usage, when adjusting for age, education, marital status and geographic location.

In the second regression model (Table 4.9), food pantry usage was regressed on the GMSR subscale scores of *negative expectations for the future* and *nondisclosure* for respondents that that live in their affirmed gender all or almost all of the time (“gender history”) and participant’s age, education, marital status and geographic location. No significant relationships were found between *negative expectations for the future* and *nondisclosure* subscale scores and the use of food pantries for this participant subgroup, when adjusting for age, education, marital status and geographic location. In the third regression model (Table 4.10), food pantry usage was regressed on the GMSR subscale scores of *negative expectations for the future* and *nondisclosure* for respondents that that do not live in their affirmed gender all or almost all of the time (“gender identity”) and participant’s age, education, marital status and geographic location. No significant relationships were found between *negative expectations for the future* and *nondisclosure* subscale scores and the use of food pantries for this participant subgroup, when adjusting for age, education, marital status and geographic location.

GMSR and food security. In the fourth regression model (Table 4.11), food security was regressed on the 7 full-sample GMSR subscale scores and participant’s age, education,

marital status and geographic location. No significant relationships were found between any full-sample GMSR subscale scores and food security, when adjusting for age, education, marital status and geographic location. In the fifth regression model (Table 4.12), food security was regressed on the GMSR subscale scores of *negative expectations for the future* and *nondisclosure* for respondents that live in their affirmed gender all or almost all of the time (“gender history”) and participant’s age, education, marital status and geographic location. No significant relationships were found between *negative expectations for the future* and *nondisclosure* subscale scores and food security for this participant subgroup, when adjusting for age, education, marital status and geographic location. In the sixth regression model (Table 4.13), food security was regressed on the GMSR subscale scores of *negative expectations for the future* and *nondisclosure* for respondents that do not live in their affirmed gender all or almost all of the time (“gender identity”) and participant’s age, education, marital status and geographic location. No significant relationships were found between *negative expectations for the future* and *nondisclosure* subscale scores and food security for this participant subgroup, when adjusting for age, education, marital status and geographic location.

Discussion

This study set out to: (1) document food insecurity experiences had by TGNC individuals living in the Southeast U.S., (2) document the experiences had by TGNC people when they utilize Federal and local food assistance resources, and (3) determine how gender-related minority stressors and community resilience are related to food insecurity and the use of local food assistance resources. Post hoc power analysis calculated using the University of California San Francisco Clinical and Translational Science Institute Sample Size Calculator (University of California San Francisco, 2019) indicated that with the sample size ($n = 105$), using our GMSR

scale and applying the widest 95% CI and widest standard deviation (95% CI: 13.8, 17.2; sd = 8.81), the statistical analysis had .80 power to detect an association if one was present.

Results indicated that a large majority of survey respondents experienced food insecurity (80.5%), few respondents utilized Federal (19%) and local (22%) food assistance resources, and high levels of both minority stress and community resilience were reported by survey respondents. Minority stress indices were not related to food insecurity or the use of local food pantries. However, community resilience measures were related to the use of local food pantries.

Over 80% of survey respondents in this study were experiencing food insecurity. There is very little information about food insecurity in the TGNC population, and what is known is limited by data collection measures; is focused on a larger, broader LGBT community; and does not center on transgender and gender diverse populations. In their study assessing food insecurity in the LGBT community using national, population-based data, Brown and colleagues (2016) found that 27% of LGBT adults experienced a time in the last year when they did not have enough money to feed themselves or their families. However, there are two gaps in Brown and colleagues' study (2016) that do not allow for a true assessment of food insecurity in the transgender population. This study utilized 4 population-based surveys to assess food insecurity in the LGBT community: Gallup Daily Tracking Survey (June-December 2014), The National Survey of Family Growth (2011-2013), American Community Survey (2014), and The National Health Interview Survey (2014). Only 1 of these surveys (Gallup Daily Tracking Survey) assessed transgender inclusive gender identity. The remaining three surveys only assessed sexual orientation (LGB). The Gallup Survey assessed gender identity through the survey item, "Do you personally identify as lesbian, gay, bisexual or transgender?" (Brown et al., 2016). By combining all "LGBT" people into a single identity measure, it is impossible to determine how many of the

food insecure participants reported by Brown and colleagues identify as transgender, and therefore the proportion of TGNC people who experience food insecurity.

In addition to problems with measuring transgender inclusive gender identity, there are issues with how food security is measured; most surveys do not use a USDA-approved multi-item measure to assess food security. The Gallup Survey only included one item to assess food security (not having enough money to buy the food needed for oneself or one's family) (Brown et al., 2016). A single measure does not accurately assess food security, a dynamic and complex phenomena made up of multiple factors including: access to food, whether food supplies are regular and consistent, and whether available food is healthy and filling (Brown et al., 2016).

The 2011 National Transgender Discrimination Survey (NTDS) (James, 2011) is one of the most comprehensive data sources on transgender health in the U.S. and is the only transgender-specific data source to stratify survey results by U.S. regions. Over the course of 6 months, the NTDS recruited survey participants through transgender-specific or trans-related organizations and listserves in the U.S. The final tally of NTDS respondents was 6,456, of which, 1,120 resided in the Southeast U.S. The NTDS classified the "Southeast U.S." as all 12 states identified in this study, plus Texas (James, 2011).

The NTDS provides important evidence concerning structural, economic, and health challenges faced by transgender people in the U.S. Results from this study could be related to food insecurity in the TGNC population as economic factors (including unemployment, homelessness, and poverty) have been linked with food insecurity in the general population (The United States Conference of Mayors, 2016; United States Department of Agriculture, 2017b). NTDS findings indicated that 14% of Southeast U.S. respondents had yearly incomes between \$1 and \$9,999, and 14% experienced unstable housing in the past year due to their gender

identity/expression (James, 2011). This study's results are similar to these findings. Nineteen percent of survey respondents reported yearly incomes of less than \$10,000, and 12.7% experienced unstable housing within the past two years.

In their study assessing health outcomes of LGBT people in various regions of the U.S., Hasenbush and colleagues (Hasenbush et al., 2014), found that a high percentage of LGBT people living in states without anti-discrimination protection laws had at least some college education. They concluded that LGBT people living in states without legislative protections (including all of the Southeast U.S. states) may seek higher educational advantages to bolster their employment prospects in response to workplace discrimination that might be encountered in these areas (Hasenbush et al., 2014).

Results of this study are similar to findings published by Hasenbush. Despite low annual incomes reported by survey respondents, a majority (79.6%) had some higher level education. Of those that reported having at least some college education, 41.5% were college graduates. This could confirm hypotheses made by others, suggesting that marginalized people living in states with high levels of social stigma seek higher educational attainment in an effort to combat potential discrimination in workplace settings.

Previous studies suggest that TGNC people experience high levels of harassment (Beemyn & Rankin, 2011), employment discrimination (Bradford, Reisner, Honnold, & Xavier, 2013), and community discrimination (Bradford et al., 2013; Factor & Rothblum, 2007) due to their TGNC status. In their study assessing gender-related discrimination among transgender people in Virginia, Bradford and colleagues (Bradford et al., 2013) found that 41% of their sample reported experiencing gender-related discrimination in one or more of the following areas: health care, employment, and housing. Results from this study are similar. Above-the-

mean scores were received in 3 of the GMSR subscales assessing minority stress and social stigma: *gender-related discrimination*, *gender-related rejection* and *non-affirmation of gender identity*, indicating that survey respondents were experiencing high levels of social stigma, rejection, and discrimination in their communities.

Strong social and community support can provide TGNC people with invaluable tangible and intangible resources, which can assist in-need community members coping with stressful life events, including food insecurity (Meyer, 2015). Community resilience is a sense that individuals can overcome life challenges and obstacles with the assistance of close community networks and support. For TGNC people with strong community or social support, community resilience may serve as a protective factor to experiences of social stigma and minority stress (Meyer, 2015).

Results from this study suggest that community resilience may have played an important role in the use of local food assistance resources. The more connected survey respondents felt to the TGNC community, the less likely they were to use local food assistance resources. Survey respondents with strong connections to their local TGNC community may have felt a greater sense of comfort seeking resources from, or asking for assistance from, their own community of TGNC people or from LGBT/TGNC-affirming organizations, rather than relying on local food assistance programs designed for the general public. Conversely, TGNC people residing in communities without a strong LGBT or TGNC presence may be more likely to utilize food pantries designed for the general public as TGNC-affirming resources might not be available or accessible to them.

In addition to community resilience, personal pride may also serve as a protective factor to minority stress and social stigma. In their qualitative study of transgender people of color residing in a large metropolitan city in the Southeast U.S., Singh and McKleroy (2011) found

that participants with a higher sense of pride were better able to overcome barriers of transphobia and racism within their communities than those with a lower sense of pride. Participants in Singh and McKleroy's study also suggested that a stronger sense of pride in their gender identity allowed them to more easily "bounce back" from hard economic times (Singh & McKleroy, 2011). Results from this study also showed that resilience in the GMSR subscale of *Pride* was positively associated with the use of local food pantries. TGNC people who feel prideful of their gender identity may be better equipped to overcome potential issues of discrimination or transphobia when securing food than those who may feel less proud of their gender identity.

Limitations

This study has limitations; first, survey respondents were purposively recruited via convenience sampling through targeted Facebook advertisements. TGNC people who responded to our study recruitment advertisement may be different than those in the general TGNC population, and this sampling bias limits the generalizability of results. Additionally, while every Southeastern U.S. state was represented in our survey, several states (Arkansas, South Carolina, and West Virginia) had very low response rates. Therefore, results from this survey should not be generalized to all TGNC people residing in the Southeast U.S. A vast majority of survey respondents were white, non-Hispanic. Thus, it is impossible to determine whether the experiences reported by survey respondents apply to TGNC people of diverse racial or ethnic backgrounds living in the Southeast U.S.

Additionally, two of the GMSR subscales (*gender-related discrimination* and *gender-related rejection*) received Cronbach's alpha scores below the general range of acceptability ($\alpha = .60$ and $\alpha = .55$, respectively) (Gliem & Gliem, 2003; Tavakol & Dennick, 2011). These scores suggest low internal consistency among these two subscales with the study sample. However,

they are also similar to previous studies utilizing the GMSR (Testa et al., 2015; Testa et al., 2017). In their study assessing suicidal ideation in TGNC people using the GMSR, Testa and colleagues (2017) reported alpha scores of .61 for the *gender-related discrimination* subscale and .71 for the *gender-related rejection* subscale. The GMSR is a relatively new scale and additional research should be done in the future concerning improving its reliability with diverse groups of TGNC people.

Future Directions

Several multi-level public health solutions could be implemented to alleviate issues of food insecurity and food access in the TGNC population. Federally, national population-based surveys assessing food security in the general population should be required to capture gender identity so public health professionals can have a more accurate assessment of how widespread issues of food insecurity are for this population. Structurally, Federal or State level legislation must be established to protect TGNC people from social stigma and discrimination. Federally and within the Southeast U.S. states, laws do not guard against discrimination for TGNC individuals (Hasenbush et al., 2014; Movement Advancement Project, 2018). RFRA laws actively allow institutions to deny services to TGNC community members based on religious beliefs. These discriminatory laws can further jeopardize access to community food resources for food insecure TGNC people.

Community-wide solutions also need to be implemented to ensure food insecure TGNC people have safe, accessible resources for food. TGNC people who were more connected to the surrounding TGNC community were less likely to use food pantries, while TGNC people who felt a deep sense of pride in their gender identity were more likely to use these resources. Given these results, one possible solution could be for TGNC/LGBT-friendly community organizations

to partner with local food pantries to ensure a safe, affirming environment is being created for TGNC people in need of food assistance. TGNC/LGBT community organizations could promote information about TGNC-affirming food pantries to food insecure TGNC people. In addition, given that a lack of awareness of food assistance resources and limited transportation options were reported as barriers to food pantry usage among survey respondents, local food pantries and LGBT community organizations could work together to provide “pop-up” food pantries in places that are safe, affirming, and easily accessible to TGNC people in need.

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Appendix A Tables and Figures



Figure 4.1. Facebook recruitment advertisement 1



Figure 4.2. Facebook recruitment advertisement 2

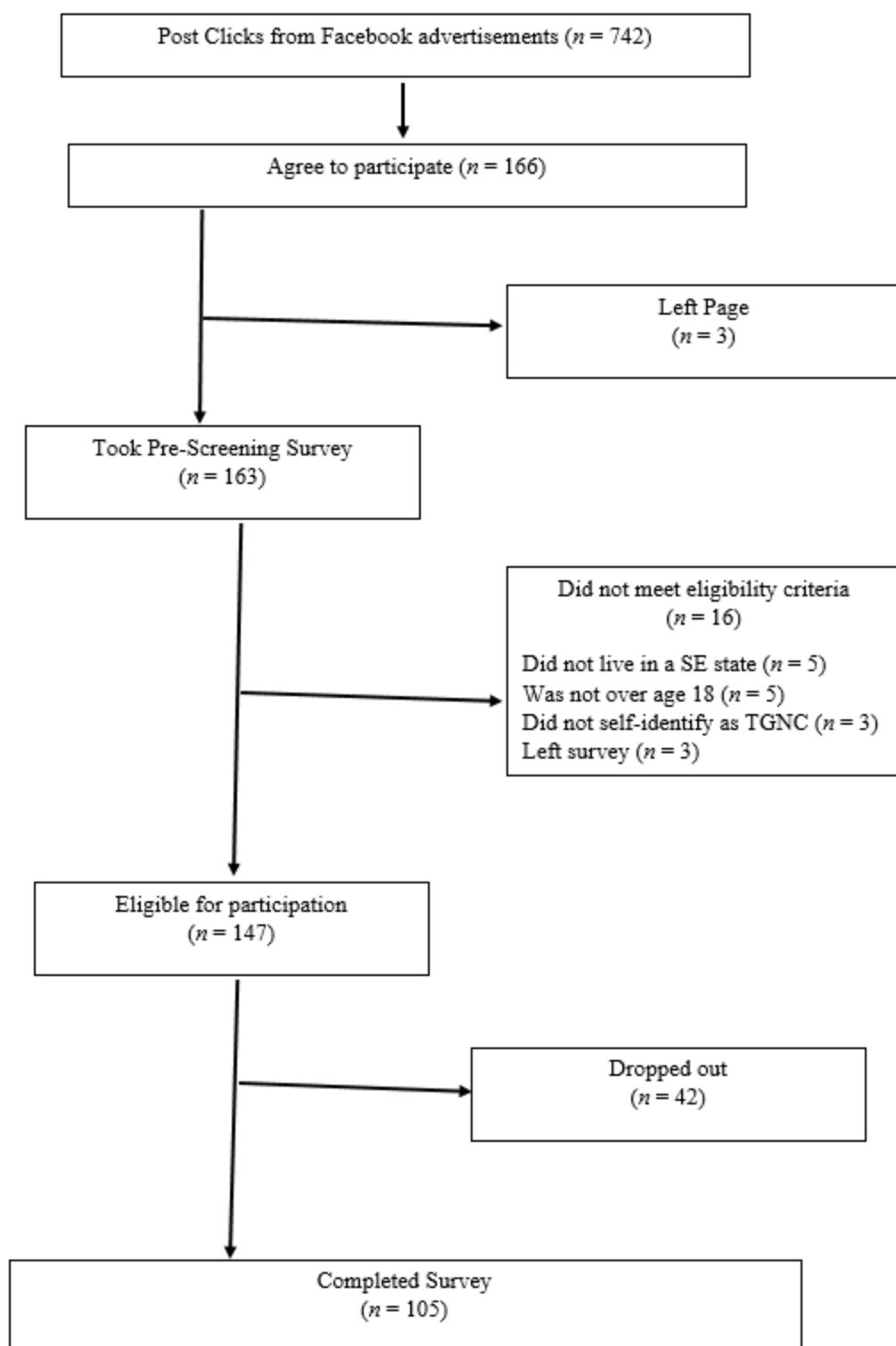


Figure 4.3. Survey completion flow diagram

The first statement is, “The food that (I/we) bought just didn’t last, and (I/we) didn’t have money to get more.” Was that often, sometimes, or never true for (you/your household) in the last 12 months?

- ☐ Often true
- ☐ Sometimes true
- ☐ Never true
- ☐ DK or Refused

“(I/we) couldn’t afford to eat balanced meals.” Was that often, sometimes, or never true for (you/your household) in the last 12 months?

- ☐ Often true
- ☐ Sometimes true
- ☐ Never true
- ☐ DK or Refused

In the last 12 months, since last (name of current month), did (you/you or other adults in your household) ever cut the size of your meals or skip meals because there wasn’t enough money for food?

- ☐ Yes
- ☐ No (Skip AD1a)
- ☐ DK (Skip AD1a)

[IF YES ABOVE, ASK] How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?

- ☐ Almost every month
- ☐ Some months but not every month
- ☐ Only 1 or 2 months
- ☐ DK

In the last 12 months, did you ever eat less than you felt you should because there wasn’t enough money for food?

- ☐ Yes
- ☐ No
- ☐ DK

In the last 12 months, were you every hungry but didn’t eat because there wasn’t enough money for food?

- ☐ Yes
- ☐ No
- ☐ DK

Figure 4.4. USDA “6-item” short form food security module

Table 4.1. Missing data analysis

	N	Missing	
		Count	%
GMSR Subscales			
Gender-related discrimination	105	0	0
Gender-related rejection	105	0	0
Gender-related victimization	105	0	0
Non-affirmation of gender identity	104	1	1.0
Internalized transphobia	103	2	1.9
Pride	105	0	0
Negative Expectations for the future (GH*)	73	1	1.3
Negative Expectations for the future (GI**)	30	1	3.2
Nondisclosure (GH)	74	0	0
Nondisclosure (GI)	31	0	0
Community	105	0	0
Categorical and Demographic Variables			
State of residence	105	0	0
Food security	87	18	17.1
Receipt of SNAP	104	1	1.0
Use of food pantries	104	1	1.0
Age	104	1	1.0
Marital status	102	3	2.9
Geographic location	105	0	0
Income	93	12	11.4
Race	104	1	1.0
Ethnicity	104	1	1.0
Education	103	2	1.9
Housing stability	102	3	2.9
Number of children	105	0	0

*GH = Gender history; **GI = Gender identity

Table 4.2. Demographic characteristics of survey respondents

	n	%
State of Residence (n=105)		
Alabama	7	6.7
Arkansas	2	1.9
Florida	14	13.3
Georgia	18	17.1
Kentucky	10	9.5
Louisiana	4	3.8
Mississippi	4	3.8
North Carolina	7	6.7
South Carolina	3	2.9
Tennessee	28	26.7
Virginia	7	6.7
West Virginia	1	1.0
Gender Identity (select all that apply)		
Agender	10	9.5
Bigender	3	2.9
Gender expansive	2	1.9
Gender fluid	19	18.1
Gender non-conforming	14	13.3
Genderqueer	28	26.7
Non-binary	42	40.0
Pangender	1	1.0
Transgender female	13	12.4
Transgender male	32	30.5
Two-spirit	4	3.8
Other	4	3.8
Geographical Area (n=105)		
Urban	38	36.2
Suburban	45	42.9
Rural	22	21.0
Age (n=104)		
18-24	51	49.0
25-34	38	36.5
35-44	7	6.7
45-54	6	5.8
55+	2	1.9
Marital Status (n=102)		
Married	17	16.7
Single	36	35.3
A member of an unmarried couple	49	48.0
Race (n=104)		
White	89	85.6

Table 4.2 continued

	n	%
Race (continued) (n=104)		
Black or African American	4	3.8
Asian	1	1.0
American Indian	1	1.0
Middle Eastern	0	0.0
Mixed Race	7	6.7
Other	2	1.9
Ethnicity (n=104)		
Spanish/Latin(x)	6	5.8
Non-Spanish/Latin(x)	98	94.2
Education (n=103)		
Less than high school	5	4.9
High school diploma or GED	16	15.5
Some college	48	46.6
College graduate	34	33.0
Employment (select all that apply)		
Employed for wages	61	56.0
Self-employed	20	18.3
Out of work for <1 year	13	11.9
Out of work for >1 year	4	3.7
Homemaker	8	5.4
Student	30	20.4
Retired	2	1.4
Unable to work	8	5.4
Stable Housing (n=102)		
Yes	89	87.3
No	13	12.7
Income (n=93)		
Under \$10,000	28	19.0
\$10,000 - \$19,999	23	15.6
\$20,000 - \$29,999	16	10.9
\$30,000 - \$39,999	10	6.8
\$40,000 - \$49,999	11	7.5
\$50,000 - \$74,999	3	3.2
\$75,000 - \$99,999	0	0.0
Over \$100,000	2	2.2
# of Children in household (n=105)		
0	81	77.1
1	12	11.4
2	7	6.7
3	4	3.8
4 or more	1	1.0

Table 4.3. Independent sample t-test: food security by age and education (n=105)

	N	Mean	SD	Std Error Mean	95% CI	t	df	sig (2-tailed)
Age								
Food Secure	20	32.15	11.30	2.53				
Food Insecure	85	26.21	7.45	0.81	1.40 9.95	2.61	293.00	0.01
Education								
Food Secure	20	2.65	0.49	0.11				
Food Insecure	85	1.94	0.82	0.09	0.26 1.06	3.27	308.86	0.00

Table 4.4. Chi square analysis: food security by marital status and geographic location (n=105)

	Count (Column %)	
	Food secure	Food insecure
Marital status		
Single	7 (33.3)	10 (11.9)
Married	8 (38.1)	28 (33.3)
Member of unmarried couple	6 (28.6)	46 (54.8)*
Geographic location		
Urban	7 (35)	31 (36.5)
Suburban	6 (30)	39 (45.9)
Rural	7 (35)	15 (17.6)

*p<.05; **p<.01; ***p<.001

Table 4.5. Alternate sources (other than traditional grocery stores, restaurants or convenient stores) utilized to secure food

	Total N	Count (Row %)	
		Food secure	Food insecure
Family members	55	8 (14.5)	47 (85.5)
Friends or “chosen family”	54	5 (9.2)	48 (88.8)
Free food sources (grocery store/restaurant dumpsters)	21	1 (4.8)	20 (95.2)
Steal food from friends or family	5	0 (0)	5 (100)
Steal food from grocery stores, restaurants, or convenient stores	15	0 (0)	15 (100)

Table 4.6. Open-ended comments regarding the welcoming nature of food pantries

<i>In your own words, please describe how your local food pantry is welcoming to transgender or gender non-conforming people.</i>
• They are very welcoming. Just very nice to everyone. • I believe it's more of a “what they don't know won't hurt them” situation; if they don't know that I/someone am/is trans or gender-non-conforming, then there isn't a problem. • I imagine the one at the college I work at is much more welcoming than the religious pantry located nearest me. • It is run by my college, which is accepting to the LGBT community. • They did not care either way or didn't notice. • We don't know; my girlfriend and I are both pre-op and stealth (I present female and she presents male in public). • Food Not Bombs is very welcoming • Second Harvest is supported by the UU church, and they support TGNC people. • The food pantry is at my local church (ORUUC) but offers this to anyone in need in the local community. I felt welcoming and like they treated me like they would anyone else that came to them for assistance.
<i>In your own words, please describe how your local food pantry is unwelcoming to transgender or gender non-conforming people.</i>
• Everybody stares, whispers of “what is that”, “she’s just confused” • We aren't the normal racist "Christians" that seem to be the majority here. • Hateful angry passive aggressive or just aggressive. Refusing prejudice and making remarks towards the community Spectrum. Often times I met with threats of violence or hateful looks and am treated unfairly among places like the food pantry or food stamp office to a point to where paperwork has been manipulated, dodged, thrown away, or edited • We are surrounded by hate and transphobes • People are required to sit through a church service, and the pastor has spoken against homosexuality, which made me uncomfortable. • Tells us we are going to hell or there's only two genders and go seek medical assistant • Transgender people not allowed • The area I live in is very bigoted, and the community harbors hate for lgbtqia folks. • I'm in the Bible Belt, they say we do not exist or are mentally challenged • It is Christian based and that tends not to go well for us here. • Tennessee resents people like us. That's fact. • It's in a church and not one of the ones I know tends to be lgbt friendly • FISH pantries may be staffed by trans/homophobic volunteers • I haven't experienced being unwelcome at my local food pantry but I feel unwelcome by most religious based organizations and many organizations in general in this area unless I know they're LGBTQ friendly and welcoming.

Table 4.7. Gender minority stress and resilience (GMSR) measure summary statistics

Subscale	N	Min	Max	Mean (<i>SD</i>)	α
Gender-related discrimination	105	0	5	2.77 (1.45)	.60
Gender-related rejection	105	0	6	4.07 (1.48)	.55
Gender-related victimization	105	0	6	2.54 (1.93)	.79
Non-affirmation of gender identity	105	0	24	18.83 (5.77)	.90
Internalized transphobia	105	0	32	15.51 (8.81)	.90
Pride	105	0	32	18.48 (7.85)	.88
Negative Expectations for the future (Gender history)	74	0	36	23.29 (8.06)	.89
Negative Expectations for the future (Gender identity)	31	0	36	28.57 (5.92)	.86
Nondisclosure (Gender history)	74	0	20	12.13 (6.25)	.88
Nondisclosure (Gender identity)	31	0	20	12.87 (5.43)	.83
Community connectedness	105	0	20	12.19 (4.94)	.83

Table 4.8. Binary logistic regression predicting likelihood of food pantry usage by full-sample GMSR subscale scores, when adjusting for geographic location, marital status, age and education
 $X^2(18, 105) = 15.99$ $p = .59$

	aOR	95.0% C.I.		p
Block 1				
Geographic location				0.50
Urban	ref			
Suburban	0.86	0.27	2.73	0.80
Rural	0.41	0.09	1.83	0.24
Marital status				0.51
Married	ref			
Single	0.41	0.08	2.14	0.29
A member of an unmarried couple	0.70	0.14	3.48	0.66
Age				0.32
18-24	ref			
25-34	0.52	0.12	2.30	0.39
35-44	1.74	0.23	13.39	0.60
45-54	2.13	0.17	26.70	0.56
55+	12.20	0.36	415.00	0.16
Education				0.81
Less than high school	ref			
High school graduate	0.56	0.05	6.03	0.64
Some college	0.90	0.10	7.87	0.92
College graduate	0.52	0.04	6.41	0.61
Block 2				
GMSR Subscales (full sample)				
Gender-related discrimination	0.89	0.54	1.47	0.66
Gender-related rejection	0.78	0.49	1.26	0.31
Gender-related victimization	1.19	0.80	1.79	0.39
Non-affirmation of gender identity	0.98	0.88	1.09	0.71
Internalized transphobia	1.01	0.94	1.09	0.76
Pride	1.11	1.02	1.22	0.02*
Community	0.89	0.79	1.00	0.05*
Constant	1.55			0.85

Table 4.9. Binary logistic regression predicting likelihood of food pantry usage by “gender history” subgroup GMSR subscale scores, when adjusting for geographic location, marital status, age and education $X^2 (13, 74) = 10.75$ $p = .63$

	aOR	95.0% C.I.		p
Block 1				
Geographic location				0.19
Urban	ref			
Suburban	0.47	0.13	1.69	0.25
Rural	0.23	0.05	1.18	0.08
Marital status				0.29
Married	ref			
Single	0.26	0.04	1.57	0.14
A member of an unmarried couple	0.60	0.12	3.15	0.55
Age				0.64
18-24	ref			
25-34	1.28	0.27	6.10	0.76
35-44	3.88	0.37	40.62	0.26
45-54	3.44	0.31	37.95	0.31
55+	8.39	0.24	289.84	0.24
Education				0.38
Less than high school	ref			
High school graduate	0.52	0.04	7.43	0.63
Some college	0.33	0.03	3.56	0.36
College graduate	0.10	0.01	1.80	0.12
Block 2				
GMSR Subscales (gender history)				
Negative expectations for the future	1.01	0.93	1.09	0.79
Nondisclosure	0.95	0.86	1.05	0.32
Constant	6.46			0.30

Table 4.10. Binary logistic regression predicting likelihood of food pantry usage by “gender identity” subgroup GMSR subscale scores, when adjusting for geographic location, marital status, age and education $X^2 (11, 31) = 8.84$ $p = .64$

	aOR	95.0% C.I.		p
Block 1				
Geographic location				1.00
Urban	ref			
Suburban	109315561.98	0.00	.	1.00
Rural	1208242.75	0.00	.	1.00
Marital status				1.00
Married	ref			
Single	0.00	0.00	.	1.00
A member of an unmarried couple	0.00	0.00	.	1.00
Age				1.00
18-24	ref			
25-34	0.00	0.00	.	1.00
35-44	393521.09	0.00	.	1.00
45-54	.	.	.	.
55+	.	.	.	.
Education				1.00
Less than high school	ref			
High school graduate	0.00	0.00	.	1.00
Some college	8.40	0.00	.	1.00
College graduate	688866934.43	0.00	.	1.00
Block 2				
GMSR Subscales (gender identity)				
Negative expectations for the future	0.74	0.28	1.99	0.55
Nondisclosure	1.12	0.76	1.65	0.57
Constant	0.00			1.00

Table 4.11. Binary logistic regression predicting food security by full-sample GMSR subscale scores, when adjusting for geographic location, marital status, age and education $X^2(11, 105) = 24.62$ $p = .01$

	aOR	95.0% C.I.		p
Block 1				
Geographic location				0.96
Urban	ref			
Suburban	3.18	0.25	40.60	0.35
Rural	0.33	0.04	2.45	0.27
Marital status				0.46
Married	ref			
Single	1.35	0.15	11.85	0.79
A member of an unmarried couple	6.05	0.57	64.61	0.13
Age				0.85
18-24	ref			
25-34	0.44	0.03	5.77	0.52
35-44	2.48	0.13	46.37	0.54
45-54	1.18	0.04	35.24	0.92
55+	0.00	0.00	0.00	1.00
Education				0.99
Less than high school	ref			
High school graduate	0.03	0.00	.	1.00
Some college	0.00	0.00	.	1.00
College graduate	0.00	0.00	.	1.00
Block 2				
GMSR Subscales (full sample)				
Gender-related discrimination	1.98	0.78	5.01	0.14
Gender-related rejection	0.69	0.32	1.50	0.34
Gender-related victimization	1.98	0.92	4.28	0.08
Non-affirmation of gender identity	1.20	0.99	1.47	0.07
Internalized transphobia	0.96	0.80	1.14	0.62
Pride	0.99	0.83	1.18	0.90
Community	1.01	0.82	1.24	0.92
Constant	49.53			1.00

Table 4.12. Binary logistic regression predicting food security by “gender history” subgroup
GMSR subscale scores, when adjusting for geographic location, marital status, age and education
 $X^2 (13, 74) = 24.06$ $p = .03$

	aOR	95.0% C.I.		p
Block 1				
Geographic location				0.42
Urban	ref			
Suburban	0.76	0.13	4.26	0.75
Rural	0.31	0.04	2.28	0.25
Marital status				0.44
Married	ref			
Single	1.78	0.24	13.12	0.57
A member of an unmarried couple	3.67	0.50	27.02	0.20
Age				0.69
18-24	ref			
25-34	1.05	0.09	11.71	0.97
35-44	9.39	0.18	484.87	0.26
45-54	1.58	0.07	35.34	0.77
55+	0.00	0.00	0.00	1.00
Education				0.37
Less than high school	ref			
High school graduate	1.49	1.49	1.49	1.00
Some college	0.00	0.00	.	1.00
College graduate	0.00	0.00	.	1.00
Block 2				
GMSR Subscales (gender identity)				
Negative expectations for the future	1.02	0.93	1.12	0.70
Nondisclosure	1.05	0.90	1.22	0.53
Constant	1954.70			1.00

Table 4.13. Binary logistic regression predicting food insecurity by “gender identity” subgroup
GMSR subscale scores, when adjusting for geographic location, marital status, age and education
 $X^2 (13, 31) = 14.90$ $p = .09$

	aOR	95.0% C.I.		p
Block 1				
Geographic location				0.88
Urban	ref			
Suburban	2.69	0.06	121.89	0.61
Rural	0.00	0.00	.	1.00
Marital status				1.00
Married	ref			
Single	19802548591554600.00	0.00	.	1.00
A member of an unmarried couple	1.66	0.00	.	1.00
Age				1.00
18-24	ref			
25-34	199167325.41	0.00	.	1.00
35-44	0.00	0.00	.	1.00
45-54	.	.	.	.
55+	.	.	.	.
Education				1.00
Less than high school	ref			
High school graduate	703211100616344.00	0.00	.	1.00
Some college	0.00	0.00	.	1.00
College graduate	0.03	0.00	.	1.00
Block 2				
GMSR Subscales (gender identity)				
Negative expectations for the future	0.00	0.00	.	0.98
Nondisclosure	1686860089569510000.00	0.00	.	0.98
Constant	0.00	0.00		0.99

Appendix B

Final Survey Instrument

In which Southeastern U.S. state do you currently live?

- ☐ Alabama
- ☐ Arkansas
- ☐ Florida
- ☐ Georgia
- ☐ Kentucky
- ☐ Louisiana
- ☐ Mississippi
- ☐ North Carolina
- ☐ South Carolina
- ☐ Tennessee
- ☐ Virginia
- ☐ West Virginia
- ☐ I do not live in one of the states listed above

Skip To: End of Survey If In which Southeastern U.S. state do you currently live? = I do not live in one of the states listed above

Are you 18 years of age or older?

- ☐ Yes
- ☐ No

Skip To: End of Survey If Are you 18 years of age or older? = No

This is a survey for people who are transgender, trans, or non-binary. Transgender, trans, non-binary are all gender identities that a person may hold. These identities are experienced when one's personal sense of gender identity and sex assigned at birth, do not match. It doesn't matter if the person has undertaken gender affirmation process, transition or if one plans to.

- ☐ This survey applies to me.
- ☐ This survey does not apply to me.

Skip To: End of Survey If This is a survey for people who are transgender, trans, or non-binary. Transgender, trans, non-bi... = This survey does not apply to me.

What sex were you assigned at birth, on your original birth certificate?

- ☐ Male
- ☐ Female

What is your current gender identity? (select all that apply)

- ☐ **Agender** (a person who identifies as having no gender)
- ☐ **Bigender** (a person whose gender identity is a combination of two genders)
- ☐ **Gender expansive** (a person whose gender is stretching society's notions of gender)
- ☐ **Gender fluid** (a person who does not identify themselves as having a fixed gender)
- ☐ **Gender non-conforming** (a person whose gender expression differs from a given society's norms for males and females)
- ☐ **Genderqueer** (a person who does not subscribe to conventional gender distinctions but identifies with neither, both, or a combination of male and female genders)
- ☐ **Non-binary** (a person who identifies as a gender other than female/male or woman/man)
- ☐ **Pangender** (a person whose gender identity is comprised of many genders)
- ☐ **Transgender female** (a person who is assigned male at birth but identifies as a woman)
- ☐ **Transgender male** (a person who is assigned female at birth but identifies as a man)
- ☐ **Two-Spirit** (a person who embodies both a masculine and feminine spirit)
- ☐ **Other** (not listed above) _____

Page Break

Which of the following best describes the area you live in?

- ☐ Urban (A city or metropolitan area)
- ☐ Suburban (A residential area on the outskirts of a city)
- ☐ Rural (Outside city: living in the country)

Page Break

These next questions are about the food eaten in your household in the last 12 months and whether you were able to afford the food you need.

"The food that I bought just didn't last, and I didn't have money to get more."

Was that often, sometimes, or never true for you in the last 12 months?

- ☐ Often true
- ☐ Sometimes true
- ☐ Never true
- ☐ Do not know
- ☐ Prefer not to answer

"I couldn't afford to eat balanced meals."

Was that often, sometimes, or never true for you in the last 12 months?

- ☐ Often true
- ☐ Sometimes true
- ☐ Never true
- ☐ Do not know
- ☐ Prefer not to answer

In the last 12 months, since January 2018, did you or other adults in your household ever cut the size of your

meals or skip meals because there wasn't enough money for food?

- ☐ Yes
- ☐ No
- ☐ Do not know
- ☐ Prefer not to answer

Skip To: FS3a If In the last 12 months, since January 2018, did you or other adults in your household ever cut the... = Yes
Skip To: FS4 If In the last 12 months, since January 2018, did you or other adults in your household ever cut the... = No
Skip To: FS4 If In the last 12 months, since January 2018, did you or other adults in your household ever cut the... = Do not know
Skip To: FS4 If In the last 12 months, since January 2018, did you or other adults in your household ever cut the... = Prefer not to answer

How often did this happen --almost every month, some months but not every month, or in only 1 or 2 months?

- ☐ Almost every month
- ☐ Some months but not every month
- ☐ Only 1 or 2 months
- ☐ Do not know
- ☐ Prefer not to answer

In the last 12 months, did you ever eat less than you felt you should because there wasn't enough money to buy food?

- ☐ Yes
 - ☐ No
 - ☐ Do not know
 - ☐ Prefer not to answer
-

In the last 12 months, were you ever hungry but didn't eat because you couldn't afford enough food?

- ☐ Yes
 - ☐ No
 - ☐ Do not know
 - ☐ Prefer not to answer
-



Click here to exit the survey

Skip To: End of Survey If = Click here to exit the survey

Page Break

The next set of questions asks about your use of Federal and local food assistance programs.

Do you currently, or have you in the past 12 months, received assistance through the Supplemental Nutrition Assistance Program (SNAP) (formerly known as food stamps)?

- ☐ Yes, I/We currently receive SNAP assistance
- ☐ Yes, I/We have received SNAP assistance in the past 12 months, but do not currently receive assistance
- ☐ No, I/We have not received SNAP assistance in the past 12 months
- ☐ Prefer not to answer

Skip To: SNAP Money If Do you currently, or have you in the past 12 months, received assistance through the Supplemental... = Yes, I/We currently receive SNAP assistance
Skip To: SNAP Money If Do you currently, or have you in the past 12 months, received assistance through the Supplemental... = Yes, I/We have received SNAP assistance in the past 12 months, but do not currently receive assistance
Skip To: Pantries If Do you currently, or have you in the past 12 months, received assistance through the Supplemental... = No, I/We have not received SNAP assistance in the past 12 months

On average, how much in SNAP assistance did/do you receive monthly?

- ☐ Less than \$50
 - ☐ \$50 - \$99
 - ☐ \$100 - \$149
 - ☐ \$150 - \$199
 - ☐ \$200 or more
-

Page Break

Do you currently, or have you in the past 12 months, use local food assistance programs such as food pantries?

- ☐ Yes, I/We currently use them
- ☐ Yes, I/We have used them in the past 12 months, but do not currently
- ☐ No, I/We do not use them and have not used them in the past 12 months
- ☐ Prefer not to answer

Skip To: Pantries-NO If Do you currently, or have you in the past 12 months, use local food assistance programs such as f... = No, I/We do not use them and have not used them in the past 12 months
Skip To: Organizer If Do you currently, or have you in the past 12 months, use local food assistance programs such as f... = Yes, I/We currently use them

Skip To: Pantries-NO If Do you currently, or have you in the past 12 months, use local food assistance programs such as f... = Yes, I/We have used them in the past 12 months, but do not currently
Skip To: Organizer If Do you currently, or have you in the past 12 months, use local food assistance programs such as f... = Prefer not to answer

Why do you not currently use local food pantries? (select all that apply)

- ☐ I do not need to use these resources at this time
 - ☐ I do not feel these resources are meant for me
 - ☐ I do not feel comfortable using these resources
 - ☐ I do not have transportation to these resources
 - ☐ I do not feel welcome at these resources
 - ☐ I did not know these resources existed
 - ☐ None of these resources are available to me in my community
 - ☐ Other, please describe _____
 - ☐ Prefer not to answer
-

Who is the organizer of your local food pantry? (if more than one pantry exists in your community, select all that apply)

- ☐ Church or faith-based organization
 - ☐ Charitable, non-profit organization (such as Second Harvest)
 - ☐ A local college or university
 - ☐ I am not aware of any food pantries in my community
 - ☐ I do not know who organizes my local food pantry
 - ☐ Prefer not to answer
-

Overall, how welcoming do you feel your local food pantry is to transgender or gender non-conforming people?

- ☐ Extremely welcoming
- ☐ Somewhat welcoming
- ☐ Neither welcoming nor unwelcoming
- ☐ Somewhat unwelcoming
- ☐ Extremely unwelcoming

In your own words, please describe how your local food pantry is **welcoming** to transgender or gender non-conforming people.

In your own words, please describe how your local food pantry is **unwelcoming** to transgender or gender non-conforming people.

What other resources do you use to secure food for you and/or your family? (select all that apply)

- ☐ Family members
- ☐ Friends or "chosen family"
- ☐ Low-cost food sources (examples: fast food; processed or packaged products)
- ☐ Free food sources (example: grocery store/restaurant dumpsters)
- ☐ Steal food from friends or family
- ☐ Steal food from grocery stores, restaurants, or convenient stores
- ☐ I do not need to seek alternate resources for food
- ☐ Other _____
- ☐ Prefer not to answer



Click here to exit the survey

Page Break

The next set of questions relate to experiences you may have faced related to discrimination and coping strategies.

Please check all that apply (for example, you may check both after age 18 and in the past year columns if both are true).

	Never	Yes, before age 18	Yes, after age 18	Yes, in the past year
I have had difficulty getting medical or mental health treatment (transition-related or other) because of my gender identity or expression	☐	☐	☐	☐
Because of my gender identity or expression, I have had difficulty finding a bathroom to use when I am out in public.	☐	☐	☐	☐
I have experienced difficulty getting identity documents that match my gender identity.	☐	☐	☐	☐
I have had difficulty finding housing or staying in housing because of my gender identity or expression.	☐	☐	☐	☐
I have had difficulty finding employment or keeping employment, or have been denied promotion because of my gender identity or expression.	☐	☐	☐	☐



Click here to exit the survey

Page Break

Please check all that apply (for example, you may check both after age 18 and in the past year columns if both are true).

	Never	Yes, before age 18	Yes, after age 18	Yes, in the past year
I have had difficulty finding a partner or have had a relationship end because of my gender identity or expression.	☐	☐	☐	☐
I have been rejected or made to feel unwelcome by a religious community because of my gender identity or expression.	☐	☐	☐	☐
I have been rejected by or made to feel unwelcome in my ethnic/racial community because of my gender identity or expression.	☐	☐	☐	☐
I have been rejected or distanced from friends because of my gender identity or expression.	☐	☐	☐	☐
I have been rejected at school or work because of my gender identity or expression.	☐	☐	☐	☐
I have been rejected or distanced from family because of my gender identity or expression.	☐	☐	☐	☐



Click here to exit the survey

Please check all that apply (for example, you may check both after age 18 and in the past year columns if both are true).

	Never	Yes, before age 18	Yes, after age 18	Yes, in the past year
I have been verbally harassed or teased because of my gender identity or expression. (For example, being called "it")	☐	☐	☐	☐
I have been threatened with being outed or blackmailed because of my gender identity or expression.	☐	☐	☐	☐
I have had my personal property damaged because of my gender identity or expression.	☐	☐	☐	☐
I have been threatened with physical harm because of my gender identity or expression.	☐	☐	☐	☐
I have been pushed, shoved, hit, or had something thrown at me because of my gender identity or expression.	☐	☐	☐	☐
I have had sexual contact with someone against my will because of my gender identity or expression.	☐	☐	☐	☐



Click here to exit the survey

Please indicate how much you agree with the following statements.

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
I have to repeatedly explain my gender identity to people or correct the pronouns people use.	☐	☐	☐	☐	☐
I have difficulty being perceived as my gender.	☐	☐	☐	☐	☐
I have to work hard for people to see my gender accurately.	☐	☐	☐	☐	☐
I have to be "hypermasculine" or "hyperfeminine" in order for people to accept my gender.	☐	☐	☐	☐	☐
People don't respect my gender identity because of my appearance or body.	☐	☐	☐	☐	☐
People don't understand me because they don't see my gender as I do.	☐	☐	☐	☐	☐



Click here to exit the survey

Page Break

Please indicate how much you agree with the following statements.

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
I resent my gender identity or expression.	☐	☐	☐	☐	☐
My gender identity or expression makes me feel like a freak.	☐	☐	☐	☐	☐
When I think of my gender identity or expression, I feel depressed.	☐	☐	☐	☐	☐
When I think about my gender identity or expression, I feel unhappy.	☐	☐	☐	☐	☐
Because my gender identity or expression, I feel like an outcast.	☐	☐	☐	☐	☐
I often ask myself: Why can't my gender identity or expression just be normal?	☐	☐	☐	☐	☐
I feel that my gender identity or expression is embarrassing.	☐	☐	☐	☐	☐
I envy people who do not have a gender identity or expression like mine.	☐	☐	☐	☐	☐



Click here to exit the survey

Please indicate how much you agree with the following statements.

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
My gender identity or expression makes me feel special and unique.	☐	☐	☐	☐	☐
It is okay for me to have people know that my gender identity is different from my sex assigned at birth.	☐	☐	☐	☐	☐
I have no problem talking about my gender identity and gender history to almost anyone.	☐	☐	☐	☐	☐
It is a gift that my gender identity is different from my sex assigned at birth.	☐	☐	☐	☐	☐
I am like other people but I am also special because my gender identity is different from my sex assigned at birth.	☐	☐	☐	☐	☐
I am proud to be a person whose gender identity is different from my sex assigned at birth.	☐	☐	☐	☐	☐
I am comfortable revealing to others that my gender identity is different from my sex assigned at birth.	☐	☐	☐	☐	☐

I'd rather have people know everything and accept me with my gender identity and gender history.

☐ ☐ ☐ ☐ ☐



Click here to exit the survey

Page Break

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

- ☐ Yes, I live in my affirmed gender most or all of the time
- ☐ No, I don't live in my affirmed gender most or all of the time

Skip To: Q48 If Do you currently live in your affirmed gender all or almost all of the time? (*Your affirmed ge... = Yes, I live in my affirmed gender most or all of the time*

Skip To: Q50 If Do you currently live in your affirmed gender all or almost all of the time? (*Your affirmed ge... = No, I don't live in my affirmed gender most or all of the time*

Display This Question:

If Do you currently live in your affirmed gender all or almost all of the time? (*Your affirmed ge... = Yes, I live in my affirmed gender most or all of the time
Please indicate how much you agree with the following statements.*

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
If I express my gender identity, others wouldn't accept me.	☐	☐	☐	☐	☐
If I express my gender identity, employers would not hire me.	☐	☐	☐	☐	☐
If I express my gender identity, people would think I am mentally ill or "crazy."	☐	☐	☐	☐	☐
If I express my gender identity, people would think I am disgusting or sinful.	☐	☐	☐	☐	☐
If I express my gender identity, most people would think less of me.	☐	☐	☐	☐	☐
If I express my gender identity, most people would look down on me.	☐	☐	☐	☐	☐
If I express my gender identity, I could be a victim of crime or violence.	☐	☐	☐	☐	☐
If I express my gender identity, I could be arrested or harassed by police.	☐	☐	☐	☐	☐
If I express my gender identity, I could be denied good medical care.	☐	☐	☐	☐	☐

Display This Question:

If Do you currently live in your affirmed gender all or almost all of the time? (*Your affirmed ge... = Yes, I live in my affirmed gender most or all of the time*

Please indicate how much you agree with the following statements.

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
Because I don't want others to know my gender identity, I don't talk about certain experiences from my past or change parts of what I will tell people.	☐	☐	☐	☐	☐
Because I don't want others to know my gender identity, I modify my way of speaking.	☐	☐	☐	☐	☐
Because I don't want others to know my gender identity, I pay special attention to the way I dress or groom myself.	☐	☐	☐	☐	☐
Because I don't want others to know my gender identity, I avoid exposing my body, such as wearing a bathing suit or nudity in locker rooms.	☐	☐	☐	☐	☐
Because I don't want others to know my gender identity, I change the way I walk, gesture, sit, or stand.	☐	☐	☐	☐	☐

Display This Question:

If Do you currently live in your affirmed gender all or almost all of the time? (*Your affirmed ge... = No, I don't live in my affirmed gender most or all of the time*

Please indicate how much you agree with the following statements.

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
If I express my gender history, others wouldn't accept me.	☐	☐	☐	☐	☐
If I express my gender history, employers would not hire me.	☐	☐	☐	☐	☐
If I express my gender history, people would think I am mentally ill or "crazy."	☐	☐	☐	☐	☐
If I express my gender history, people would think I am disgusting or sinful.	☐	☐	☐	☐	☐
If I express my gender history, most people would think less of me.	☐	☐	☐	☐	☐
If I express my gender history, most people would look down on me.	☐	☐	☐	☐	☐
If I express my gender history, I could be a victim of crime or violence.	☐	☐	☐	☐	☐
If I express my gender history, I could be arrested or harassed by police.	☐	☐	☐	☐	☐
If I express my gender history, I could be denied good medical care.	☐	☐	☐	☐	☐

Display This Question:

If Do you currently live in your affirmed gender all or almost all of the time? (*Your affirmed ge... = No, I don't live in my affirmed gender most or all of the time*

Please indicate how much you agree with the following statements.

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
Because I don't want others to know my gender history, I don't talk about certain experiences from my past or change parts of what I will tell people.	☐	☐	☐	☐	☐
Because I don't want others to know my gender history, I modify my way of speaking.	☐	☐	☐	☐	☐
Because I don't want others to know my gender history, I pay special attention to the way I dress or groom myself.	☐	☐	☐	☐	☐
Because I don't want others to know my gender history, I avoid exposing my body, such as wearing a bathing suit or nudity in locker rooms.	☐	☐	☐	☐	☐
Because I don't want others to know my gender history, I change the way I walk, gesture, sit, or stand.	☐	☐	☐	☐	☐

End of Block: Default Question Block

Start of Block: Community connectedness

Please indicate how much you agree with the following statements.

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
I feel part of a community of people who share my gender identity.	☐	☐	☐	☐	☐
I feel connected to other people who share my gender identity.	☐	☐	☐	☐	☐
When interacting with members of the community that shares my gender identity, I feel like I belong.	☐	☐	☐	☐	☐
I'm not like other people who share my gender identity.	☐	☐	☐	☐	☐
I feel isolated and separate from other people who share my gender identity..	☐	☐	☐	☐	☐



Click here to exit the survey

End of Block: Community connectedness

Start of Block: Demographics

The next set of questions are related to your personal characteristics. Please answer all of the questions honestly, as this will help us better understand the answers you provided above.

What is your age?

Are you...?

- ☐ Married
 - ☐ Single
 - ☐ A member of an unmarried couple
 - ☐ Prefer not to answer
-

Which of the following best describes your race?

- ☐ White
 - ☐ Black or African American
 - ☐ Asian
 - ☐ American Indian
 - ☐ Middle Eastern
 - ☐ Mixed race
 - ☐ Other
 - ☐ Prefer not to answer
-

Are you Hispanic, Latino/a, or Spanish Origin

- ☐ Yes
 - ☐ No
 - ☐ Prefer not to answer
-

What is the highest grade or year of school you completed?

- ☐ Never attended school or only attended kindergarten
 - ☐ Grades 1-8 (Elementary school or middle school)
 - ☐ Grades 9-11 (some high school)
 - ☐ Grade 12 or GED (high school graduate)
 - ☐ College 1 year - 3 years (some college or technical school)
 - ☐ College 4 years or more (college graduate)
 - ☐ Prefer not to answer
-

Are you currently...?

- ☐ Employed for wages
 - ☐ Self-employed
 - ☐ Out of work for 1 year or more
 - ☐ Out of work for less than 1 year
 - ☐ A homemaker
 - ☐ A student
 - ☐ Retired
 - ☐ Unable to work
 - ☐ Prefer not to answer
-

In the past two months, have you been living in stable housing that you own, rent, or stay in as part of a household?

- ☐ Yes
 - ☐ No
 - ☐ Prefer not to answer
-

What is your current **household** income, in U.S. dollars?

- ☐ Under \$10,000
 - ☐ \$10,000-\$19,999
 - ☐ \$20,000-\$29,999
 - ☐ \$30,000-\$39,999
 - ☐ \$40,000-\$49,999
 - ☐ \$50,000-\$74,999
 - ☐ \$75,000-\$99,999
 - ☐ Over \$100,000
 - ☐ Prefer not to answer
-

How many children under the age of 18 currently live in your household?

- ☐ 0
- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4 or more
- ☐ Prefer not to answer

End of Block: Demographics

Appendix C

Gender Minority Stress and Resilience Measure

Gender-related discrimination

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

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

Gender-related rejection

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

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

Gender-related victimization

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

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

Non-affirmation of gender identity

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

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

Internalized transphobia

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

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

Pride

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

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

Question to determine appropriate wording for items regarding negative expectations for the future and

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

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

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

Negative expectations for the future

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

1. If I express my gender IDENTITY/HISTORY, others wouldn't accept me.
2. If I express my gender IDENTITY/HISTORY, employers would not hire me.
3. If I express my gender IDENTITY/HISTORY, people would think I am mentally ill or "crazy."
4. If I express my gender IDENTITY/HISTORY, people would think I am disgusting or sinful.
5. If I express my gender IDENTITY/HISTORY, most people would think less of me.
6. If I express my gender IDENTITY/HISTORY, most people would look down on me.
7. If I express my gender IDENTITY/HISTORY, I could be a victim of crime or violence.
8. If I express my gender IDENTITY/HISTORY, I could be arrested or harassed by police.
9. If I express my gender IDENTITY/HISTORY, I could be denied good medical care.

Nondisclosure

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

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

Community connectedness

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

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

Note. Scale names are included for researcher information only; they are not intended to be shared with participants responding to the questionnaire.

Wording for items regarding negative expectations for the future and nondisclosure varies. Respondents endorsing that they live in their affirmed gender all or almost all of the time are presented with the word "history"; respondents indicating that they do not live in their affirmed gender all or almost all of the time are presented with the word "identity."

Chapter V

Conclusion

Food insecurity in the United States (U.S.) has been identified as a pressing public health problem, as it contributes to hunger, obesity, chronic disease, and poor overall health (Gregory & Coleman-Jensen, 2017; United States Department of Agriculture, 2017). Despite increased national attention to addressing issues of food insecurity in the general population, nearly nothing is known about food insecurity in the transgender and gender non-conforming (TGNC) community. National population-based surveys do not include information on gender identity, rendering this population nearly invisible to public health professionals.

Results from the 2015 U.S. Transgender Survey (USTS) suggest that TGNC people face disproportionately high rates of the known primary drivers of food insecurity in the general population including homelessness, poverty, and joblessness (James, 2016; The United States Conference of Mayors, 2016; United States Department of Agriculture, 2017). Given these extreme economic hardships, food insecurity should be considered an urgent issue for TGNC people. Data from this project sought to uncover and address issues of food insecurity in this otherwise “hidden” population.

In my first manuscript (Chapter II), qualitative interviews were conducted with 20, food insecure TGNC people living in the Southeast U.S. In this study, I found that participants were suffering from severe food insecurity and poverty. Study participants reported facing multi-level discrimination that contributed to their food insecurity including being denied gainful employment, feeling rejected from and unwanted at local food assistance resources, and being unfairly targeted by discriminatory state and Federal laws because of their TGNC status. Interview participants recalled going to extreme measures to locate food including scavenging in

dumpsters, stealing from friends, family and grocery stores, and bartering for vegetables at local farmers' markets. As a result of the intersections of multi-level minority stressors, daily stress from un- and underemployment, and inadequate food supplies, study participants reported deteriorating physical and mental health, and weakened support systems.

My second manuscript (Chapter III) documented the use of targeted Facebook advertisements as a recruitment strategy for hard-to-reach, highly stigmatized populations. Results from this study suggested that the use of targeted Facebook advertisements can be a successful recruitment strategy for TGNC people. However, there were also negative consequences that arose from using this recruitment method, including gender-based digital harassment and abuse to potential study participants. For researchers considering using targeted Facebook advertisements as a recruitment strategy for highly-stigmatized populations, careful consideration and detailed protocol must be applied and followed to minimize the risk and harm to potential study participants.

In my third manuscript (Chapter IV), I expanded upon Manuscript 1's qualitative results by further investigating issues of food insecurity, minority stress, community resilience, and the use of local food pantries in a broader population of TGNC people living in the Southeast U.S. through an online, cross-sectional survey. Overall, 105 TGNC people completed the survey, with participant representation from all 12 Southeastern states. Results from this study indicated that a majority of study participants (80.5%) were experiencing food insecurity.

Consistent with the qualitative results from Manuscript 1, food insecure participants reported extreme measures to secure food, including scavenging from grocery store or restaurant dumpsters (24.4%), stealing food from friends or family (6%), and stealing food from restaurants, grocery stores, or convenient stores (18%). Additionally, a large majority of survey

participants (74.3%) reported not using local food pantries as emergency food resources. When participants were asked why they did not utilize local food pantries, 41% reported they did not feel food pantries were meant for them, 33.3% did not need to use food pantries at the present time, 28.6% did not feel comfortable using food pantries, 18.6% did not feel welcome, 12.4% did not know food pantries existed in their community, and 11.4% did not have transportation to local food pantries. While quantitative survey responses suggested a majority of participants were indifferent about the welcoming nature of local food pantries (neither welcoming nor unwelcoming), open-ended qualitative responses suggested participants felt unwelcome at local food pantries due to their TGNC status, particularly at pantries operated by a church or faith-based organization.

Additionally, in Manuscript III, I further explored the intersections of minority stress, community resilience, food security, and the use of local food pantries using the validated Gender Minority Stress and Resilience (GMSR) measure (Testa, Habarth, Peta, Balsam, & Bockting, 2015). While no significant associations were found between the GMSR subscales and food security, the two subscales designed to measure resilience in the TGNC population (*Pride* and *Community connectedness*) were significantly associated with the use of local food pantries. There was a significant positive relationship between the GMSR *Pride* subscale and the use of food pantries (aOR = 1.11, 95% CI 1.02, 1.22, $p=.02$) when adjusting for participants' age, education, marital status and geographic location. Participants who were prouder of their gender identity were 11% more likely to use food pantries than those who were less proud. There was a significant negative relationship between the GMSR *Community* subscale and the use of food pantries (aOR = 0.89, 95% CI 0.79, 1.00, $p=.05$) when adjusting for the aforementioned demographic characteristics. Participants who felt a greater connection to the TGNC community

were 11% less likely to use food pantries than those that were less connected to the TGNC community.

Overall, this dissertation documented that TGNC people living in the Southeast U.S. are experiencing food insecurity. Qualitatively, interview participants reported severe food insecurity. One participant recalled, “We have been on a strict rice and rice and salt diet so it’s not necessarily the best thing in the world right at the second. I have about 10 bucks every 22 days to spend on food.” Quantitatively, 80.5% of survey participants were food insecure. There is very little information about food insecurity in the TGNC population, and what is known is limited by data collection measures, is focused on a larger, broader Lesbian, Gay, Bisexual and Transgender (LGBT) community, and does not center on transgender and gender diverse populations. In their study assessing food insecurity in the LGBT community using national, population-based data, Brown and colleagues (2016) found that 27% of LGBT adults experienced a time in the last year when they did not have enough money to feed themselves or their families.

However, there are two gaps in Brown’s study that do not allow for a true assessment of food insecurity in the transgender population. This study utilized 4 population-based surveys to assess food insecurity in the LGBT community: Gallup Daily Tracking Survey (June-December 2014), The National Survey of Family Growth (2011-2013), American Community Survey (2014), and The National Health Interview Survey (2014). However, only 1 of these surveys (Gallup Daily Tracking Survey) assess transgender inclusive gender identity. The remaining three surveys only included items related to sexual orientation (LGB) and did not assess transgender identity inclusive gender identity. The Gallup Survey assessed gender identity through the survey item, “Do you personally identify as lesbian, gay, bisexual or transgender?”

(Brown et al., 2016). By combining all “LGBT” people into a single identity measure, it is impossible to determine how many of the food insecure participants reported by Brown and colleagues identify as transgender.

In addition to problems with measuring transgender inclusive gender identity, there are issues with how food security is measured in the few existing studies about food insecurity among TGNC people; most surveys do not use the gold standard for assessing food security. The Gallup Survey only included one item to assess food security (not having enough money to buy the food needed for oneself or one’s family) rather than using a USDA-approved multi-item food security measure (Brown et al., 2016). A single measure does not accurately assess food security, a dynamic and complex phenomena made up of multiple factors including: access to food, whether food supplies are regular and consistent, and whether available food is healthy and filling (Brown et al., 2016).

The 2011 National Transgender Discrimination Survey (NTDS) (2011) is one of the most comprehensive data sources on transgender health in the U.S. and is the only transgender-specific data source to stratify survey results by U.S. regions. Over the course of 6 months, the NTDS recruited survey participants through transgender-specific or trans-related organizations and listserves in the U.S. The final tally of NTDS respondents was 6,456, of which, 1,120 resided in the Southeast U.S. The NTDS classified the “Southeast U.S.” as all 12 states identified in this study, plus Texas (James, 2011).

The NTDS provides important evidence concerning structural, economic, and health challenges faced by transgender people in the U.S. Results from this study could be related to food insecurity in the TGNC population as economic factors (including unemployment, homelessness, and poverty) have been linked with food insecurity in the general population (The

United States Conference of Mayors, 2016; United States Department of Agriculture, 2017). NTDS findings indicated that 14% of Southeast U.S. respondents had yearly incomes between \$1 and \$9,999, and 14% experienced unstable housing in the past year due to their gender identity/expression (James, 2011). Qualitative and quantitative results from my studies are similar to these findings. Qualitatively, participants reported extreme difficulty finding and maintaining stable employment, limiting their monthly incomes and financial capacities for food. As a result of a limited monthly income, interview participants reported experiencing homelessness and unstable living conditions, often relying on family or friends for temporary housing relief. Quantitatively, 19% percent of my survey participants reported yearly incomes of less than \$10,000/year, and 12.7% indicated they had experienced unstable housing within the past two years.

High social stigma in states where TGNC people reside can adversely affect the actual and perceived safety, acceptance, and security experienced by TGNC. The LGB Social and Political Climate Index detects approximate levels of social stigma within communities, states, and regions (Hatzenbuehler et al., 2014). Index scores have a possible range of 40-92, with higher scores indicating less social stigma toward the LGBT community (Hasenbush, Flores, Kastanis, Sears, & Gates, 2014). Among the 12 Southeast U.S. states included in my study, the mean Index score was 50, indicating a high level of social stigma toward LGBT people in this region (Hasenbush et al., 2014).

Previous studies suggest that TGNC people experience high levels of harassment (Beemyn & Rankin, 2011), employment discrimination (Bradford, Reisner, Honnold, & Xavier, 2013), and community discrimination (Bradford et al., 2013; Factor & Rothblum, 2007) due to their TGNC status. In their study assessing gender-related discrimination among transgender

people in Virginia, Bradford and colleagues (2013) found that 41% of their sample reported experiencing gender-related discrimination in one or more of the following areas: health care, employment, and housing. Results from my studies are similar. Interview participants described being rejected from religious and community institutions, discriminated by community members and family members, and victimized by acts of overt violence and harassment due to their TGNC status. Quantitatively, above-the-mean scores were received in 3 of the GMSR subscales assessing minority stress and social stigma: *gender-related discrimination*, *gender-related rejection* and *non-affirmation of gender identity*, indicating that survey participants were experiencing high levels of minority stress and social stigma within their communities. Additionally, negative and discriminatory comments were received on our targeted Facebook advertisement, resulting in the digital harassment and abuse of potential study participants.

Strong social and community support can provide TGNC people with invaluable tangible and intangible resources, which can assist in-need community members coping with stressful life events, including food insecurity (Meyer, 2015). Community resilience is a sense that individuals can overcome life challenges and obstacles with the assistance of close community networks and support. For TGNC people with strong community or social support, community resilience may serve as a protective factor to experiences of social stigma and minority stress (Meyer, 2015).

Qualitative and quantitative study results suggest that community resilience played an important role in securing food supplies and locating food assistance resources. Qualitatively, interview participants reported relying on friends or “chosen family” in times of great need. One participant recalled, “I generally lean on my chosen family in times of high stress and coping with things that are hard, like not being able to afford food. That usually helps in terms of just alleviating the stress and also finding resources to get on things like food stamps or various

things.” Additionally, survey participants with strong connections to their local TGNC community were less likely to use community food pantries than those without strong connections to this community. These results indicate that participants who integrated themselves to their local TGNC community may have felt a greater sense of comfort seeking resources from, or asking for assistance from, their own community of TGNC people or from LGBT/TGNC-affirming organizations, rather than relying on local food assistance programs designed for the general public. Conversely, TGNC people residing in communities without a strong LGBT or TGNC presence may be more likely to utilize food pantries designed for the general public as TGNC-affirming resources might not be available or accessible to them.

In addition to community resilience, personal pride may also serve as a protective factor to minority stress and social stigma. In their qualitative study of transgender people of color, residing in a large metropolitan city in the Southeast U.S., Singh and McKleroy (2011) found that participants with a higher sense of pride were better able to overcome barriers of transphobia and racism within their communities than those with a lower sense of pride. Participants in Singh and McKleroy’s study also suggested that a stronger sense of pride in their gender identity allowed them to more easily “bounce back” from hard economic times (Singh & McKleroy, 2011).

I also found that pride played an important role for TGNC people utilizing local food assistance resources. Qualitatively, interview participants who were less prideful of their gender identity expressed feeling guilty or undeserving of food assistance. As one participant recalled, “...[I feel] guilty that [I am] taking something for free instead of working for it. Then, trans people already have this voice in their head that they’re not worth much anyway, so getting us to love ourselves and take care of ourselves is sometimes pretty difficult.” Quantitatively, the

resilience GMSR subscale of *Pride* was positively associated with the use of local food pantries. These results suggest that TGNC people who feel prideful of their gender identity may be better equipped to overcome potential issues of discrimination, and internal or external transphobia when securing food than those who may feel less proud of their gender identity.

Future Directions

Based on the experiences of TGNC people in my studies, several multi-level public health solutions could be implemented to alleviate issues of food insecurity in this population. Federally, national population-based surveys assessing food security in the general population should be required to capture gender identity so public health professionals can have a more accurate assessment of how widespread issues of food insecurity are for this population. Additionally, given that under- and unemployment was a driving factor for food insecurity in my qualitative study, Federal, state or regional level legislation could be established to protect TGNC people from employment discrimination. Partnerships should be formed between public health professionals, advocates for TGNC health and wellness, and regional and state politicians to help raise the awareness of and need for state- and local-level workplace anti-discrimination policies as a strategy to reduce or eliminate food insecurity among TGNC people.

Community-wide solutions also need to be implemented to ensure food insecure TGNC people have safe, accessible resources for food. TGNC people who were more connected to the surrounding TGNC community were less likely to use food pantries, while TGNC people who felt a deep sense of pride in their gender identity were more likely to use these resources. Given these results, one possible solution could be for TGNC/LGBT-friendly community organizations to partner with local food pantries to ensure a safe, affirming environment is being created for TGNC people in need of food assistance. TGNC/LGBT community organizations could

promote information about TGNC-affirming food pantries to food insecure TGNC people. In addition, given that a lack of awareness of food assistance resources and limited transportation options were reported as barriers to food pantry usage among both interview and survey participants, local food pantries and LGBT community organizations could work together to provide “pop-up” food pantries in places that are safe, affirming, and easily accessible to TGNC people in need.

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Vita

Jennifer Russomanno was born to parents Nancy and Leon Russomanno in Toms River, New Jersey. Jennifer grew up in Toms River, New Jersey where she attended Toms River High School East. After graduating high school in 1997, she attended Fairleigh Dickinson University in Madison, New Jersey. She obtained a Bachelor of Arts in Electronic Filmmaking and Digital Video Design from Fairleigh Dickinson University in 2001. After a successful career in event and corporate meeting planning, she entered the Public Health graduate program at the University of Tennessee in Knoxville, Tennessee in 2014. Upon obtaining a Master's degree in Public Health in 2016, she accepted a doctoral position in the Department of Public Health at the University of Tennessee, Knoxville. Jennifer also received her Certified Health Education Specialist (CHES) certification in 2016. In 2019, she graduated with a Doctor of Public Health degree (DrPH). She is the co-owner/operator of a farm in New Market, Tennessee, 2 Chicks and a Farm, where she and her partner grow naturally-grown produce for community consumption. In the coming years, Jennifer will continue her role on the farm while simultaneously pursuing a career in community health education.