Title

Conceptualizing Societal Stigma and its Association to Minority Stress, Health Care Mistreatment, and the Mental and Physical Symptoms of Gender Minority People

Author

Clark, Kristen Drew

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Conceptualizing Societal Stigma and its Association to Minority Stress, Health Care Mistreatment, and the Mental and Physical Symptoms of Gender Minority People

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Kristen D Clark

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Approved:

DocuSigned by:
Annesa Flentje — Annesa Flentje
BDD6E5E34BBE485...
Chair

DocuSigned by:
Jae Sevelius
[illegible]

DocuSigned by:
Sandra Weiss — Sandra Weiss
[illegible]

DocuSigned by:
Carol Dawson-Rose — Carol Dawson-Rose
FB5A885C7DC445F...

Committee Members

Dedication

I dedicate this dissertation to people of the transgender and gender minority community. Your experiences are deserving of not only acknowledgement, but action. I hope that this work has honored your experiences and has contributed towards the necessary progress to truly improve lives. It is my goal to continue my work and make meaningful change in not only health care, but also society.

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Clark, you have made every step of this process a joy. I hoped that achieving this milestone would be an investment in both myself and in you. I want you to know that whomever you grow to be, whatever brings you pride, and a sense of accomplishment, is worth the effort and dedication to bring it to life. You have the potential to accomplish whatever your heart desires and I will always be here to cheer you on and support you, just as you have done for me. But remember, you both will *always* be my greatest accomplishment.

Conceptualizing Societal Stigma and its Association to Minority Stress, Healthcare Mistreatment, and the Mental and Physical Symptoms of Gender Minority People

Kristen Drew Clark

Abstract

Gender minority people (GM; people whose gender differs from the sex that was assigned at birth) experience significant disparities in physical and mental health outcomes when compared to the general population. Exposure to minority stress, the excess and chronic stress that arises from stigma and prejudice that GM individuals are exposed to as a result of their marginalized status, has been posited to underlie the health disparities observed among GM people. Understanding the negative social attitudes (also termed societal stigma) that may underly minority stress is important to understanding sources of negative influence and structural barriers to health and well-being. However, measurement of societal stigma has been inconsistent in extant literature. The purpose of this dissertation is to evaluate potential proxy measures of societal stigma and to determine their relationship with minority stress reported by GM people and the presence of associated health outcomes. Study one examined societal stigma in relation to components of minority stress (*i.e.*, experienced stigma, anticipated stigma, internalized stigma, and concealment) to identify which proxy measure of societal stigma most closely relates to GM people's reports of minority stress. Study two tested the relationship between measures of societal stigma and their association to health care discrimination (a minority stressor). Study three assessed the relationship between exposure to stressors in health care and symptoms reported by GM people (*i.e.*, emotional distress and impaired physical functioning). Study one found that that living in a state with a more SGM friendly environment (measured by the State LGBT+ Business Climate Index) was associated with less experienced stigma ($\beta=-0.316$, $p=.024$) and less anticipated stigma ($\beta=-0.533$, $p<.001$). Residing in a metropolitan area was associated with less anticipated stigma ($\beta=-0.193$, $p<.001$) and greater outness ($\beta=0.053$, $p=.011$). Study two found that, within the same sample, none of the measures of societal stigma were associated with medical or mental health care mistreatment ($p>.05$). Study three found that participants who had reported at least one stressor in health care during the past 12 months had a 0.10 increase in symptoms of emotional distress ($\beta=0.14$, $p<.001$) and were 85% more likely to have at least one symptom of physical impairment ($OR=1.85$, $p<.001$). Improved measures are needed to capture societal stigma toward GM people and further evaluate its role in GM people's health. These results also suggest that GM people who report experiencing stressors in health care have more symptoms of emotional distress and greater odds of having a physical impairment. Improved measurement of societal stigma could contextualize where there may be variations localized societal stigma toward GM people. Further work to understand sources of societal stigma and evaluate strategies necessary to create affirming health care environments is critical to the health of GM people.

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Chapter 1

Introduction

Problem Statement

Gender minority (GM; individuals whose gender is not aligned with that traditionally associated with the sex that was assigned to them at birth) people experience significant disparities in physical and mental health outcomes, such as a higher prevalence of suicidal ideation and attempts (Reisner et al., 2014; Thoma et al., 2019) and HIV (Becasen et al., 2019) when compared to the general population. Exposure to minority stress, the excess, chronic stress that arises from stigma and prejudice that individuals are exposed to as a result of their marginalized status (Meyer, 2003), has been posited to underlie the health disparities observed among GM people (Figure 1.1; Hendricks & Testa, 2012; Testa et al., 2012). Stress exposure has also been linked to the worsening of symptoms related to chronic conditions and the development of physical and emotional symptoms that may inhibit one's functional status (Covassin & Bay, 2012; Gulewitsch et al., 2013; Lupien et al., 2018; Miodrag & Hodapp, 2011).

One method of examining the likelihood that a person who is GM will be exposed to chronic stress, and subsequently be at greater risk for poor health outcomes and greater symptom burden, is to examine societal stigma as a predictor. Societal stigma, in the context of sexual and gender minority (SGM; people who are not solely heterosexual and/or whose gender is not aligned with that traditionally associated with the sex that was assigned to them at birth, respectively) health, has been defined as the degree to which society approves of SGM people (Hasenbush et al., 2014). However, societal stigma has predominantly been measured indirectly through proxy measures, such as state-level policies pertaining to sexual minority people its association to mental health outcomes (Hatzenbuehler et al., 2009) or the percentage of a state that voted Republican in a previous election and its association to health access among GM people (White Hughto et al., 2016a). At the individual level, societal stigma has been assessed through reports of stressors in health care settings as related to negative social attitudes toward GM people, which have been tied to health care avoidance (Glick et al., 2018; Mizock & Mueser, 2014; Stroumsa et al., 2019). While these proxy variables have been found to be associated with the health and health access of SGM people, they are not a direct measure of the societal attitudes toward GM people as they rely on indirect indicators of those attitudes (*i.e.* voting behavior, policy, self-report). A more direct measure of societal stigma would reflect attitudes toward GM people at the time of measure and may better account for the experiences of minority stress and symptoms among GM people, but this does not currently exist.

Background

Stigma has been defined as the stereotyping, "othering", and marginalization of a group of people in a manner that results in restricted access to resources, reduced social standing, and internalization of these processes (Link & Phelan, 2001). Stigma has been operationalized into three main constructs: structural stigma, interpersonal stigma, and internalized (or individual) stigma. Structural stigma is defined as social norms, laws, and policies that influence the social, economic, and personal wellbeing of the marginalized group (Hatzenbuehler et al., 2010). It has been most commonly operationalized as the latter portion of that definition, the laws and policies that influence the social, economic, and personal wellbeing of GM people (King et al., 2020). Interpersonal stigma is defined as experiences of stigma such as discrimination, victimization, mistreatment, and rejection due to one's marginalized status (White Hughto et al., 2015). Lastly, internalized (or individual) stigma is defined as the internalization of stigma, or negative beliefs, attitudes, and shame about one's marginalized identity (White Hughto et al., 2015). Societal stigma, as defined in this dissertation, is the degree to which society approves of GM people, which encompasses the concept of social norms (Hasenbush et al., 2014; Figure 1.1). However, societal stigma has not been included as a separate construct in the current literature on the components of stigma among any population (Link & Phelan, 2001; White Hughto et al., 2015). Evaluation of societal stigma as a distinct construct is needed, because whether the broader, dominant society accepts or denies the existence and rights of a marginalized group influences the policies, resources, and behaviors, and individual-level beliefs that follow (*i.e.,* structural stigma, interpersonal stigma, and internalized stigma).

Structural, interpersonal, and internalized stigma largely represent the outcome of societal stigma as societal stigma is a driver of these constructs. However, there is currently no available measure of societal stigma. Variables used to measure structural or interpersonal stigma may be indicative of societal stigma and could serve as a proxy the construct. For example, conservative political views may be considered a proxy for societal stigma. Conservative political views have been associated with reduced health care access among GM people (Shires et al., 2019; White Hughto et al., 2016b). Political views may be reflective of one's attitudes and the election of candidates that embrace those attitudes can, in turn, lead to federal, state, or municipal policies, a type of structural stigma. These structural policies may in turn affect access to resources and impact the rights of GM people (Flores, 2015; Jones et al., 2018). However, the use of elections as a measurement of societal stigma is problematic, as voters may prioritize any number of issues that are not specific to GM people, and thus may not be directly representative of their attitudes toward GM people. While candidate platforms demonstrate that *candidate's* attitude toward a marginalized group (Acosta, 2020), this may not be an accurate measurement of the *voter'*s attitude toward GM people. This misalignment of policy and voter attitudes occurred in 2017 when conservative legislators attempted to pass laws to restrict bathroom access among GM people despite a majority of Americans opposing these policies (Jones, et al., 2017). Even as recent as in 2021, conservative candidates have been more supportive of policies that are harmful to GM people, such as laws banning GM youth from sports or barring them from gender affirming health care access (Avery, D., 2021). However, these examples are established at the state level and therefore may not represent the attitudes of people within the communities where some GM people live, work, and engage most frequently. If this measure is to be demonstrative of societal stigma, there is a large gap between state level representation and individual communities. For example, 53% of voters in Texas chose the Republican candidate in the 2020 United States (US) election (Federal Election Commission, 2020); however, 72% of voters in Travis County, Texas chose the Democratic candidate (County Clerk, 2020). As we have seen in relation to policies related to restricting GM youth from sports and denying gender affirming health care access, these policies are led by conservative legislators. Therefore, GM people residing in Travis County may have a very different experiences than those in other parts of Texas. Similarly, the use of US region has been associated with differences in experiences of structural and interpersonal stigma (Dy et al., 2016; Reif et al., 2017; White Hughto et al., 2016b), but also lacks the nuance of community-level-measurement. The use of variables such as the population density where a person from a marginalized community resides have been associated with interpersonal stigma in the form of discrimination and mistreatment in health care interactions (Bradford et al., 2013; Patterson et al., 2019; Sharma et al., 2019). Lower population density has also been associated with transphobic and homophobic attitudes (Patterson et al., 2019; Sharma et al., 2019) , or societal stigma. Lower population density has also been associated with decreased access to housing and bathrooms that align with one’s gender, or are gender neutral (Seelman, 2014), a form of structural stigma. These variables could be indicative of attitudes in a community or localized area and, therefore, could be interpreted as an indication of societal stigma in lower population density areas. Further comparison of state- and community-level measures of societal stigma is needed to determine which is the most appropriate method to represent this construct.

Individual-level measures of societal stigma that have been applied by researchers also prove challenging when used as a broad proxy measure of societal stigma. For example, discrimination within health care settings reported by GM people has been associated with reports of delayed care seeking. Delayed care seeking has, in turn, been tied to poor health outcomes (Glick et al., 2018; Mizock & Mueser, 2014). While discrimination, a type of interpersonal stigma, may be driven by societal stigma, measurement in the aforementioned studies relies upon self-report from the victims and does not directly convey the attitudes of those who discriminated against the GM participants. While self-report measures of discrimination are one way to try and capture the underlying construct of societal stigma, they are problematic due to the reporting and perception bias that is introduced (Lewis et al., 2015). Further, it is difficult to tie those interpersonal experiences to broader community or population level attitudes. Therefore, variables measured at the individual level of societal stigma, such as self-reported discrimination experiences, may identify geographically meaningful differences, but the concerns of bias reduce their efficacy as a broader proxy measure of societal stigma.

Societal stigma has considerable implications for the health and health access of GM people through its role as a measure of stress exposure (Glick et al., 2018; Hatzenbuehler et al., 2015; Mizock & Mueser, 2014; Shires et al., 2019; White Hughto et al., 2016b). While symptom experiences among GM people have not been previously studied, chronic stress has been connected to the worsening of symptoms in the general population, such as symptoms related to chronic conditions, physical ability, and emotional status (Covassin & Bay, 2012; Gulewitsch et al., 2013; Lupien et al., 2018; Miodrag & Hodapp, 2011). Through the integration of a measure of societal stigma, the role of one's environment and its association with health outcomes and symptoms among GM people may be viewed more closely and in a more nuanced manner. Therefore, the purpose of this dissertation is to assess the currently available measures of societal stigma in the exigent scientific literature among GM people and to examine its relationship to exposure to minority stress, health care mistreatment (*e.g.,* stressors in health care), and the symptom experience of GM people.

Theoretical Framework

This dissertation is framed using a model that integrates two theories, the Social Ecological Model as a framework for where stigma exists and the Minority Stress Model as the mechanism by which stigma begets stress among GM people.

The Social Ecological Model provides the overarching structure for understanding the concept of societal stigma in relation to the individual. The Social Ecological Model purports that humans are strongly influenced by their environments and, therefore, the social structures across numerous levels have an effect on the individual (Bronfenbrenner, 1994; Faber & Manstetten, 2009). These levels, or strata, represent environmental influences that may be as indirect as policies at the federal level (Macrosystem), or as closely situated as the community, family, and friends surrounding the individual (Microsystem; Darling, 2007)

The Minority Stress Model (Figure 1.1) describes the mechanism by which chronic stress occurs among SGM people (Hendricks & Testa, 2012; Meyer, 1995). The Minority Stress Model describes stress exposure to the individual as falling into four categories: Distal stressors (*e.g*., experiences of discrimination), Anticipated Stigma (*e.g*., the expectation that one will be treated poorly), Internalized Stigma (*e.g*., negative feelings about one's SGM identity), & Concealment (*e.g*., concealing ones SGM identity). This additional stress compounds to the point of constituting chronic stress and results in health disparities (Meyer, 1995). Societal stigma can be considered a direct and an indirect source of the types of stress experienced by GM people. Examination of societal stigma may allow one to pinpoint more subtle shifts in the trajectory of stress exposure among GM people.

Purpose and Aims

Aim 1 **:** Examine the currently available measures of societal stigma and their relationship to components of the minority stress model in a diverse national sample, after controlling for demographic factors (*e.g*., age, income, education, race/ethnicity, sex assigned at birth).

The purpose of this aim will be addressed in Chapter 2 of this dissertation and will examine these proxy measures of societal stigma to identify which is most closely associated with the minority stressors reported in a sample of GM adults.

Aim 2**:** Compare the relationship between the selected proxy variables for societal stigma (Aim 1) and health care mistreatment, after controlling for demographic factors (*e.g.,* age, income, education, race/ethnicity) in a diverse national sample of GM adults.

Hypotheses:

1. At least one proxy variable for societal stigma (*i.e.,* lower State LGBT+ Business Climate Index scores, living in a lower population density area, and lower access to

GM inclusive health care) will be associated with care refusal and/or lower quality care in medical or mental health care settings

2. Differences in stressors reported in health care will be evident between gender identity groups.

The purpose of this aim will be addressed in Chapter 3 of this dissertation. This aim will examine whether the identified measures of societal stigma are associated with specific distal stressors, namely health care mistreatment in a sample of GM people.

Aim 3: Determine the relationship between exposure to stressors in health care interactions and symptoms reported by GM people (emotional distress and impaired physical functioning), after controlling for socioeconomic factors (*e.g.*, age, income, education, race/ethnicity).

Hypotheses:

1. A greater number of stressors reported in health care interactions will be associated with more severe symptoms of emotional distress and more symptoms of impaired physical functioning

2. Some stressors may be more strongly related to more severe or frequent symptoms than other stressors.

Aim 4: Evaluate the potential role of gender identity as a moderator between health care stressors and symptoms of both emotional distress and impaired physical functioning.

Hypothesis: Gender expansive people will show a stronger relationship between the stressors they report and the severity or frequency of their symptoms than will transgender men and transgender women.

The purposes of aims 3 and 4 will be addressed in Chapter 4 of this dissertation. These aims will examine specific distal stressors, namely stressors in health care, and their association with symptoms of emotional distress and symptoms of physical impairment in a sample of GM people.

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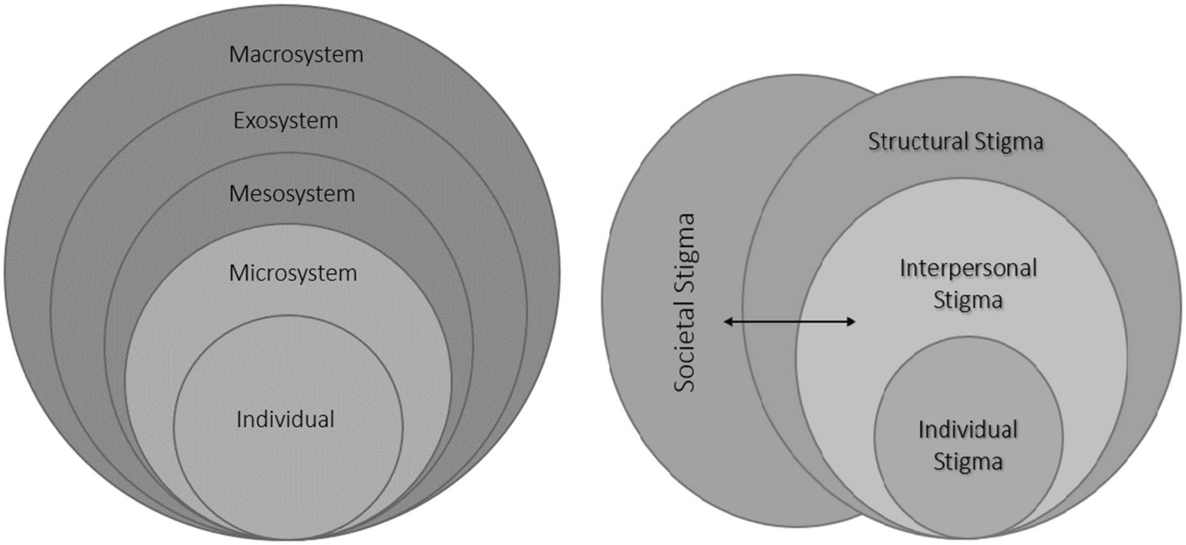

Figure 1.1 Societal Stigma in relationship to constructs of stigma within the social ecological model (Bronfenbrenner, 1994; White Hughto et al., 2015)

Chapter 2

Measures of Societal Stigma and Their Association to Components of Minority Stress Among Gender Minority People

** The PRIDE Study team will be included as co-authors for manuscript submission

Kristen D. Clark, MSN[1], Jae M. Sevelius, PhD[2,3], Carol Dawson-Rose, PhD[1], Sandra J. Weiss, PhD[4], Torsten B. Neilands, PhD[2], Annesa Flentje, PhD[1,6,7]

[1]Department of Community Health Systems, School of Nursing, University of California San Francisco, San Francisco, CA

[2]Center for AIDS Prevention Studies, Department of Medicine, University of California, San Francisco, CA

[3]Center of Excellence for Transgender Health, Department of Medicine, University of California, San Francisco, CA

[4]Department of Community Health Systems, UCSF Depression Center, University of California, San Francisco, CA

[5]Division of Prevention Science, University of California, San Francisco, California, USA.

[6]Alliance Health Project, Department of Psychiatry and Behavioral Sciences, School of Medicine, University of California, San Francisco

[7]The PRIDE Study/PRIDEnet, Stanford University School of Medicine

Corresponding Author:

Kristen D. Clark, PhD candidate, MSN, RN

University of California, San Francisco

School of Nursing Department of Community Health Systems

2 Koret Way, San Francisco, CA 94143

Email: kristen.clark@ucsf.edu

Telephone: 415-476-1435

Abstract

Background: Understanding the underlying negative social attitudes towards gender minority (GM; people whose gender identity does not align with that commonly associated with the sex they were assigned at birth) people is important to understanding GM people's exposure to sources of minority stress, such as experienced stigma, anticipated stigma, concealment of one's GM identity, and internalized stigma. However, no measure of societal stigma currently exists. Therefore, we sought to examine which proxy measures of societal stigma are most closely related to GM people's reports of minority stress.

Methods: We tested variables related to societal stigma (State LGBT+ Business Climate Index [SLBCI], state policy environment tally, region, county population density, Google Trend search data, and state voting behaviors) and their relationship with measures of minority stress in a structural equation model with a sample of GM participants from The Population Research in Identity and Disparities for Equality (PRIDE) Study ($N = 1988$).

Results: Global fit statistics demonstrated good model fit SRMR = 0.035, RMSEA = 0.030. When measures of societal stigma were compared to the Minority Stress Model, less societal stigma on the SBLCI was associated with less experienced stigma ($\beta = -0.316$, $p = .024$) and less anticipated stigma ($\beta = -0.533$, $p < .001$). Living in a metropolitan county was associated with less anticipated stigma ($\beta = -0.193$, $p < .001$) and greater outness ($\beta = 0.053$, $p = .011$).

Discussion: Two proxy measures of societal stigma showed a relationship with components of minority stress; however, no one measure predicted all components. Application of these measures as a proxy for societal stigma (*i.e.*, SLBCI and living in a metropolitan area) should be explored

in continued analyses to investigate the relationship between societal stigma and its role in stress exposure among GM people as well as a potential social determinant of health.

Introduction

Stigma & Minority Stress

Broadly, stigma has been defined as the stereotyping, "othering", and marginalization of a group of people in a manner that results in restricted access to resources, reduced social standing, and the internalization of these processes (Link & Phelan, 2001). Stigma has been established to be an important consideration as a social determinant of health, affecting both the health and health care access of gender minority (GM; people whose gender identity does not align with that commonly associated with the sex they were assigned at birth) people through its role in minority stress. Minority stress describes how different types of stigma related to one's minoritized identity, specifically related to gender identity and sexual orientation, form chronic stressors in excess to the everyday stress experienced by the general population (Meyer, 1995, 2003; Testa et al., 2017).

Stigma Domains

Stigma has been operationalized into three primary constructs: structural stigma, interpersonal stigma, and internalized (or individual) stigma. However, societal stigma, or the degree to which society disapproves of GM people (Hasenbush et al., 2014), underlies and intersects these constructs (Figure 2.1), but has not been included as a distinct construct in the current literature describing stigma processes (Link & Phelan, 2001; White Hughto et al., 2015). Structural stigma is defined as social norms, laws, and policies that influence the social, economic, and personal wellbeing of the marginalized group (Hatzenbuehler et al., 2010). It has been most commonly operationalized in the extent literature as the latter portion of that definition, the laws and policies that influence the social, economic, and personal wellbeing of

GM people (King et al., 2020). Interpersonal stigma is defined as experiences of stigma such as discrimination, victimization, mistreatment, and rejection due to one's marginalized status (White Hughto et al., 2015). Lastly, internalized (or individual) stigma is defined as the internalization of stigma, or negative beliefs, attitudes, and shame about one's marginalized identity (White Hughto et al., 2015). Societal stigma, as defined in this dissertation, is the degree to which society disapproves of GM people, which encompasses the concept of social norms (Hasenbush et al., 2014; Figure 2.1).

Evaluation of societal stigma as a distinct construct is needed, because whether the broader, dominant society accepts or denies the existence and rights of GM people influences the policies, resources, and behaviors, and the individual-level beliefs regarding one's GM identity that follow (*i.e.,* structural stigma, interpersonal stigma, and internalized stigma).

Proxying Societal Stigma with Measures of Structural Stigma

There is currently no available measure of societal stigma. Variables used to measure structural or interpersonal stigma may be indicative of societal stigma and could serve as a proxy for the construct. For example, conservative political views may be considered a proxy for societal stigma based on how conservative political views have been associated with interpersonal and structural stigma among GM people. Conservative political views have been associated with reduced healthcare access among GM people (Shires et al., 2019; White Hughto et al., 2016). Political views may be reflective of one's attitudes toward GM people. For example, the election of candidates that embrace negative attitudes toward GM people can, in turn lead to policies that restrict access to resources or protections from discrimination and other forms of mistreatment directed toward GM people. These policies may in turn affect access to resources and impact the rights of GM people (Flores, 2015; Jones et al., 2018). However, the use of elections as a proxy measurement of societal stigma is problematic, as voters may prioritize any number of issues that are not specific to GM people, and thus may not be directly representative of their attitudes toward this group. While candidate platforms demonstrate that *candidate's* attitude toward a marginalized group (Acosta, 2020), this may not be an accurate measurement of the *voter*'s attitudes toward GM people. This misalignment of policy and voter attitudes occurred in 2017 when conservative legislators attempted to pass laws to restrict bathroom access among GM people despite a majority of Americans opposing these policies (Jones, et al., 2017). Even more recently in 2021, conservative candidates have been more supportive of policies that are harmful to GM people, such as laws banning GM youth from sports or from, gender affirming health care access (Avery, D., 2021). However, these examples are measured at the state level and therefore may not represent the communities where some GM people live, work, and engage most frequently. If conservative political views are to be demonstrative of societal stigma, there may be large gaps between state level representation and individual communities. For example, 53% of voters in Texas chose the Republican candidate in the 2020 United States (US) election (Federal Election Commission, 2020); however, 72% of voters in Travis County, Texas chose the Democratic candidate (County Clerk, 2020). Similarly, the use of US region, such as whether one lives in the Southern U.S., has been associated with differences in experiences of structural and interpersonal stigma (Dy et al., 2016; Reif et al., 2017; White Hughto et al., 2016), but also lacks the nuance of community-level-measurement. The use of variables, such as the population density where GM people reside, have been associated with interpersonal stigma in the form of discrimination and mistreatment in health care interactions (Bradford et al., 2013; Patterson et al., 2019; Sharma et al., 2019). Lower population density has also been associated with transphobic and homophobic attitudes

(Patterson et al., 2019; Sharma et al., 2019) , or societal stigma. Lower population density has also been associated with lower access to housing and bathrooms that align with one's gender or are gender neutral (Seelman, 2014), a form of structural stigma. Use of variables such as region or population density could be indicative of attitudes in an area and, therefore, an indication of societal stigma in lower population density areas. Therefore, careful comparison of state versus more local measures of societal stigma are important in the consideration of an appropriate proxy measure to predict reported experiences of minority stress.

Mapping Stigma onto the Minority Stress Model

Evaluation of potential proxy measures of societal stigma is important to consider in terms of their relationship to the Minority Stress Model. Stigma, as described by Link and Phelan (2001) can be examined in the context of the Minority Stress Model to better understand its role in the health of GM people. Enacted, or experienced, stigma represents prejudicial or stigmatizing events or experiences that a GM person encounters (Meyer, 1995), also described as interpersonal stigma (Link & Phelan, 2001; White Hughto et al., 2015). Experienced stigma may increase the negative self-view of one's GM identity or internalization of harmful societal views of their identity, referred to as internalized stigma, as well as the act of concealing of one's GM identity. Experienced stigma, anticipated stigma, and internalized stigma may influence one's decision to disclose their GM identity, or their outness. Societal stigma may be an underlying contributor to the types of stigma and excess stress described by the Minority Stress Model. If this is correct, then harmful societal attitudes directed toward GM people, as measured by societal stigma, should be associated with greater experienced stigma, anticipated stigma, internalized stigma, and outness of one's GM identity.

Aims

The aim of this study was to examine currently available variables representing societal stigma to identify which was most strongly associated with components of the Minority Stress Model (*i.e.,* experienced stigma, anticipated stigma, internalized stigma, and outness). Variables used in extant GM health and health care access literature were evaluated for their relationship to the construct of societal stigma and their availability as external (*i.e.*, non-self-report) variable. We hypothesize that community-level variables representing societal stigma, as opposed to state-level variables, will be most closely associated with the components of the Minority Stress Model.

Methods

Design

Data were collected within the 2019 Annual Questionnaire of The PRIDE Study, a national, longitudinal cohort study of sexual and gender minority people who reside in the United States (see Lunn et al. 2019 for detailed description of The PRIDE Study). Briefly, the PRIDE Study is a community-engaged research study with an active Participant Advisory Committee. This committee reviewed and informed the adaptations of measures used in The PRIDE Study to be inclusive of sexual and gender minority communities and reviewed the study described herein. The study was approved by the Institutional Review Boards of Stanford University and the University of California, San Francisco.

Sample

Recruitment for The PRIDE Study included the involvement of PRIDEnet partners (including community organizations), online communications (*e.g.*, blog posts, newsletters, advertising on social media), in-person outreach at conferences/sexual and gender minority events, the distribution of The PRIDE Study promotional items, and word-of-mouth. Upon enrollment in The PRIDE Study, participants are provided with informed consent which is affirmed electronically. Eligible participants included individuals who were 18 years and older, resided in the United States or its territories, self-identified as a sexual and/or gender minority person, and who took annual questionnaire measures outlined in these analyses between June 2019 and May 2020. GM participants, or participants who endorsed a GM gender identity (*i.e.*, transgender woman, transgender man, non-binary, or "another gender identity") were retained for analysis in this study.

Measures

Demographics**.** Demographic data collected included age, race/ethnicity, sexual orientation, gender identity, individual income, and highest level of education completed. State of residence was determined through participant-provided ZIP code. Age was calculated by subtracting participants' birth date, which was obtained upon study enrollment, from the date that the survey was begun. Race and ethnicity were measured with a categorical variable (select all that apply) with 8 options, including "none of these fully describes me". Participants were asked "If you had to choose only one of the following terms, which best describes your current sexual orientation?". Participants could then indicate asexual/demisexual/gray-ace, bisexual/pansexual, gay/lesbian, queer, straight/heterosexual, or "another sexual orientation". Participants were provided a categorial variable that asked participants "If you had to choose only one of the following terms, which best describes your current gender identity?". Participants could then indicate cisgender man, cisgender woman, non-binary, transgender man, transgender woman, or "another gender identity". This second variable was used to isolate the GM subset of our participants and to describe our sample in Table 2.1. Sex assigned at birth was measured with a variable that asked, "What was your sex assigned at birth, for example on your original birth certificate?" Participants could choose either female or male. Highest level of education was measured by an ordinal variable with 10 options ranging from "no schooling" to "Professional degree". We coded this in our analyses as a 4-level variable (*i.e.,* "no high school diploma", "high school/GED graduate or some college", "college degree [2- or 4-year]", and "graduate degree). Individual income was measured by an ordinal 11-item variable ranging from $0 to $100,000, which were used in analysis in these increments (collapsed in Table 2.1).

Societal Stigma. Variables found in extant GM health literature and reports from sexual and gender minority non-profit organizations were evaluated for their relationship to the construct of societal stigma, such as whether they could be representative of whether people in a given area approve or disapprove of GM, and included in subsequent analyses (*i.e*., state policy environment tallies, State LGBT+ Business Climate Index, the percent of a state that voted Republican in 2020, Google Trends search data, US region, and population density). State Policy Environment Tally - The Movement Advancement Project reports each state's sexual and gender minority-inclusive legislation in order to create a state-level policy environment score (Movement Advancement Project, n.d.). For example, a state with employment anti-discrimination laws that explicitly apply to both sexual minority and gender minority people received 2 out of 2 points, whereas a state without employment anti-discrimination laws for either sexual minority or gender minority people and passes a law banning cities and counties from passing their own anti-discrimination laws would receive 0 out of 2 points. If a state were to have no protections in any of the items and only harmful policies (*e.g.,* laws banning cities from passing anti-discrimination laws, religious exemption laws) the state could have a negative score. The possible scores for each state range from -16.5 to 35. These scores were extracted on October 8, 2019 included as a single continuous variable where higher scores are more protective.

State LGBT+ Business Climate Index- Out Leadership, an organization aimed at increasing sexual and gender minority representation within corporations and organizations, reports an index on how sexual and gender minority inclusive each state is to inform business leaders, organizations, and policymakers of “the costs created by polices that create minority stress” (Out Leadership, 2019). The LGBTQ+ Business Climate Index incorporates data from the Movement Advancement Project, the United States Transgender Survey, The Williams Institute, the Bureau of Labor Statistics, and the United States Treasury to create score for each state that ranges from 25-100 from points allotted from five domains: “Legal and Nondiscrimination Protections”, “Youth and Family Support”, “Political and Religious Attitudes”, “Health Access and Safety”, and “Work Environment and Employment”. These scores were included as a single continuous variable.

Percentage of a state that voted Republican in 2020 election- The number of votes for the Republican Presidential nominee in the 2020 election (Federal Election Commission, 2020; White Hughto et al., 2016) was calculated as a percent of total votes cast in each state and included as a single continuous variable.

Google Trends- “transgender”. Google Trends is a tool to determine the popularity of topics/search terms based on the number of search queries (Google Trends, n.d.). This description of the popularity of the search term in a state could indicate greater comfort with GM identities and communities. We entered the term “transgender” and exported its popularity ranking by state in the US from June 2019 and May 2020 (to align with our participant response window). These values provided a range from 0 to 100, with the higher counts indicating the greatest proportion of total searches in that state. These values were included as a single continuous variable.

US Region- Residing in the US South has been associated with poorer health care access and greater interpersonal stigma among GM people (Perez-Brumer et al., 2018; Reif et al., 2017). Therefore, a dichotomous variable was created indicating whether each participant resides in a state in the Southern US based on the US Census Regions (United States Census, 2020).

Living in a Metropolitan Area- Participant ZIP code was converted to Rural-Urban Continuum Codes, which identified the population density where the participant resides. Due to the low population density variability in our sample, these codes were recoded to a dichotomous variable indicating metropolitan (participant resides in a designated metropolitan county) and non-metropolitan (participant resides in an area that is not designated as a metropolitan county; United States Department of Agriculture, n.d.).

Minority Stress. Measures of minority stress included in this analysis were chosen to capture components of the Minority Stress Model (Meyer, 1995): experienced stigma, anticipated stigma, internalized stigma, & outness.

Experienced Stigma- This construct was comprised of 10 dichotomous observed variables that queried participants' reported experiences of discrimination and victimization. Seven variables queried whether participants experienced each type of discrimination in the past-year (*i.e.* employment, education, health care, housing, receiving services, interacting with law enforcement, and verbal harassment). Three variables queried whether participants reported experiencing 3 different types of victimization in the past-year (*i.e.* physical attack/harm, violence from a romantic partner, and unwanted sexual contact). Participants could indicate the reason they believe they experienced each stigmatizing event with a select all that apply variable (*i.e*., ability/disability status, age, body size/weight/shape, gender expression, gender identity, race/ethnicity, sexual orientation, or something else). Participants who endorsed that the event was perceived to occur due to gender identity and/or gender expression were coded as 1, participants who indicated "no" or "yes" but gave a different reason for the stigmatizing event were coded as 0. These variables are not a validated instrument and were adapted and expanded from the National HIV Behavioral Surveillance surveys (Centers for Disease Control and Prevention, 2019).

Anticipated Stigma- This construct was comprised of observed variables querying perceived community acceptance and perceived community safety. Community acceptance and safety for GM people was assessed via self-report for both where the participant currently reside and where they were raised using 4 items adapted from Heck et al. 2014. The first variable queries "overall, how safe for gender minority people is the community in which you currently live?" by answering in a Likert-type scale ranging from 0-4 (0 indicating "extremely unsafe" to 4 indicating "extremely safe"). The second variable queries "overall, how accepting for gender minority people is the community in which you currently live?" by answering in a Likert-type scale ranging from 0-4 (0 indicating "extremely unaccepting" and 4 indicating "extremely accepting").These same two items were asked again, but participants were asked to respond based on where they were raised. The variable responses were recoded as inverse, (1 indicating "extremely safe" to 4 indicating "extremely unsafe") to produce an outcome that is more intuitively interpreted (greater numbers will indicate greater anticipated stigma).

Internalized Stigma- The Internalized Homophobia Scale (IHP-R; Herek, Gillis, and Cogan 2009) was also adapted from its use for internalized stigma related to sexual orientation to be reflective of GM people's experiences (*e.g.,* "I wish I weren't genderqueer, transgender, or gender minority."). Responses were summed and divided by 5, resulting in a possible range of 1 to 5, with higher scores indicating increased internalized stigma.

Outness- This was measured using the Nebraska Outness Scale, which indicates the degree to which participants' are open about their GM status (Meidlinger & Hope, 2014). The measure was developed based on sexual orientation and was adapted for GM people but has not yet been validated for this population. The measure includes 10 items, including two subscales with 5 items that measure concealment and 5 items that measure disclosure of GM status. This adaptation for GM people by including gender identity in lieu of sexual orientation, and providing examples pertaining to GM people's experiences such as "*e.g*., not correcting people when they use a name or pronoun that is not accurate for you". Participants could respond by answering in a Likert-type scale for each item ranging from 1-5 (1 indicating "disagree strongly" to 5 indicating "agree strongly"). The variables for the "concealment" subscale were reverse coded. Each subscale was totaled and averaged to provide a single variable with a range from 1-10, where greater numbers indicate greater outness.

Analysis**.** We evaluated missing data patterns among the variables of interest. We found that 250 participants did not respond to two or more measures of minority stress and were subsequently dropped from analyses. Descriptive statistics were generated using STATA 15 (Stata Corp, 2017) to describe the characteristics of the sample. All further analyses were performed using MPlus 8 (Muthén & Muthén, 2017). Structural equation modeling was then used to test the relationship between societal stigma and components of minority stress within our GM sample. We used weighted least squares estimation (1,000 iterations) to handle missing data that was assumed to be missing at random. These variables were introduced into the model in three steps (Mulaik & Millsap, 2000): (1) a measurement model identifying model fit among the measures of minority stress (experiences of stigma, anticipated stigma, internalized stigma, & outness) developed based on the Minority Stress Model (Meyer, 1995, 2003; Testa et al., 2017), (2) a structural model incorporating the predictors of interest, proxy measures of societal stigma, and (3), a final model incorporating covariates (*i.e.*, age, race/ethnicity, sexual orientation, educational status).

We reported both unstandardized and standardized regression coefficients for the model relationships. The model was determined to fit the data on the basis that two or more of the following conditions are met: CFI/TLI $\geq$.95, RMSEA $\leq$ .06, and SRMR $\leq$.08 (Hu & Bentler, 1999). Power analysis using the N:q rule estimates that 740- 940 participants (depending on the final number of societal stigma variables) was needed for a good estimate of fit (Jackson, 2003).

Results

Participants

A total of 1,947 GM participants were included in the final analyses. The mean age was 32 years (Table 2.1). Non-mutually exclusive descriptions of race and ethnicity showed that approximately 79.4% of participants described themselves as solely White, while an additional 12.6% described themselves as White and another race or ethnicity. Approximately 2.7% were Hispanic, Latino, or Spanish, and 1.1% were Black, African American, or African. Approximately a third of the sample (36.8%) had a high school level education or less. Half of the sample (51%) reported an individual income of less than $20,000 per year. Descriptive statistics for minority stress and societal stigma variables are presented in Table 2.2.

Measurement Model

The measurement model with estimated standardized path coefficient are presented in Figure 2.2. Estimates and standard errors for measurements and standard errors are in Table 2.3. The factor loadings between the endogenous and observed variables within the measurement model were each significant. Greater experienced stigma was associated with greater anticipated stigma (r = 0.358, *p* < .001), and greater internalized stigma (r = 0.129, *p* < .001). Greater anticipated stigma was associated with greater internalized stigma (r = 0.180, *p* < .001). Greater outness was associated with less internalized stigma (r = -0.270, *p* < .001). The model fit the data well: RMSEA = 0.036, and SRMR = 0.034.

Structural Model

The structural model with estimated standardized path coefficient are presented in Figure 2.3. The factor loadings between the latent factors and observed variables within the measurement model were each significant. Greater experienced stigma was associated with greater anticipated stigma (r = 0.314, *p* < .001), and greater internalized stigma (r = 0.119, *p* < .001). Greater anticipated stigma was associated with greater internalized stigma (r = 0.189, *p* < .001). Greater outness was associated with less internalized stigma (r = -0.292, *p* < .001). Each component of minority stress was covaried for race, ethnicity, sexual orientation, gender identity, educational status, and age. The model fit the data well: SRMR = 0.035, RMSEA = 0.030. The structural model with the estimated standardized path coefficients is illustrated in Fig. 2. Estimates and standard errors for measurements and standard errors are in Table 2.4 and 2.5.

State-level policy environments were not associated with experienced stigma (*p* = .056), anticipated stigma (*p* = .066), internalized stigma (*p* = .728), or outness (*p* = .351). State LGBT+

Business Climate Index was found to be negatively associated with experienced stigma (β =-0.316, *p* = .024) and negatively associated with anticipated stigma (β = -0.533, *p* < .001), meaning the more sexual and gender minority inclusive a state was on this scale, the lower the experienced stigma and the less anticipated stigma. It was not associated with internalized stigma (*p* = .423) or outness (*p* = .651). The percentage of a state who voted Republican was not associated with experienced stigma (*p* = .096), anticipated stigma (*p* = .826), internalized stigma (*p* = .092), or outness (*p* = .108). Google Trend was found to have a positive association with experienced stigma (β = 0.067, *p* = .041), meaning participants who live in states that searched the term "transgender" more frequently in proportion to the state's population (*i.e.,* number of searches/state population) were found to have greater experienced stigma. However, it was not associated with anticipated stigma (*p* = .666), internalized stigma (*p* = .598), or outness (*p* = .532). US region, or whether one lives in the South, was not associated with experienced stigma (*p* = .656), anticipated stigma (*p* = .102), internalized stigma (*p* = .149), or outness (*p* = .443). Living in a metropolitan area was found to have a negative association with anticipated stigma (β = -0.193, *p* < .001) and outness (β = 0.053, *p* = .011), meaning that GM participants who lived in more metropolitan areas reported less anticipated stigma and more outness. It was not associated with experienced stigma (*p* = .544) or internalized stigma (*p* = .372).

Discussion

The purpose of this study was to examine currently available variables representing societal stigma to identify which was most strongly associated with components of the Minority Stress Model. None of the variables representing societal stigma were associated with all components of the Minority Stress Model. However, both the State LGBT+ Business Climate Index and population density were associated with two components of minority stress.

The State LGBT+ Business Climate Index indicated that greater inclusivity in a state was associated with less experienced stigma and less anticipated stigma. While the State LGBT+ Business Climate Index was a state level variable and may not reflect the experiences of people living throughout a given state, the development of the index included data on sexual and gender minority policy protections as well as economic indicators (Out Leadership, 2019). This may be why the variable was associated with components of minority stress while state level policy environment tallies, which is solely constructed from data related to sexual and gender minority policy protections, were not associated with components of minority stress. We know that GM people are more likely to face higher rates of unemployment and poverty (Carpenter et al., 2020). If societal stigma is an underlying contributor to structural stigma in that attitudes of those in a community or state are reflected by the policies that are passed and whether those policies are enforced, it stands to reason that a variable that accounts for multiple forms of structural stigma could be most closely representative of societal stigma as a construct. Therefore, the State LGBT+ Business Climate Index may be more closely representative of people's experiences of societal stigma than other included variables and could be the most appropriate proxy for the construct.

Whether one lives in a metropolitan environment was also associated with two components of minority stress. This variable indicated that living in metropolitan areas with populations >250,000 was associated with less anticipated stigma and greater outness of GM identities. Living in more urban environments likely increases access to social support and community resources (Movement Advancement Project, 2019), both of which indicate lower structural stigma. Social support has been found to moderate the relationship between minority stressors and poor mental health outcomes (Trujillo et al., 2017; Valentine & Shipherd, 2018). Less urban environments tend to be associated with more transphobia and homophobia (Fisher et al., 2011; Patterson et al., 2019; Sharma et al., 2019). This could be due to less visibility of GM people that leads to less tolerance of differences within a community and also a lack of resources for support (Abelson, 2016; Paceley et al., 2017). Therefore, the measure of population density may be indicative of both structural and interpersonal stigma in a more localized geographical area.

Higher Google Trend search results by state for the term “transgender” were found to be associated with greater reports of experienced stigma. This variable communicates frequency of a search relative to the state’s population, but one cannot interpret intent of the search. For example, when states have highly publicized legislation related to GM people, it is possible that searches would increase due to political dialogue and be unrelated to one’s attitude toward GM people. Previous literature has found an association between searches for racial slurs and mortality rates among Black Americans (Chae et al., 2015), however this is not entirely parallel since the use of a slur is not equivalent to our search term of “transgender”.

A greater percentage of a state that voted Republican in the 2020 election was not associated with any of the components of minority stress in our study. This is contrary to previous literature that found refusal of health care services to be higher in states that voted Republican in the prior presidential election (White Hughto et al., 2016). This could be due to the composition of our sample. While a state may have reflected a higher portion of Republican votes, our participants who reside in those states may live in areas who did not vote predominantly Republican, for example the state of Texas voted predominantly Republican but

Travis County, Texas voted predominantly Democrat in the last election (County Clerk, 2020; Federal Election Commission, 2020). This could illustrate the importance of societal stigma measures that are reflective of community level versus state-level attitudes.

Future work should be explored in the development of a measure that is intended to proxy the construct of societal stigma. Our findings illustrate that no one currently available measure is reflective of the minority stress experiences of GM people. However, the two measures that emerged as most promising encompass some important characteristics. State LGBT+ Business Climate Index incorporated both policy and economic conditions in its determination of state scores (OUT Leadership, 2019). Population density, such as living in a metropolitan area, may communicate access to resources and community for GM people. A measure of societal stigma should explore elements of location and of the sociopolitical environment where people reside.

Limitations

While this study is an important contribution to our understanding of the types and levels of stigma experienced by GM people, limitations remain. Societal stigma is one consideration for understanding drivers of stigma described under the Minority Stress Model. Other contributing factors, such as race, ethnicity, sexual orientation, are covaried in our models, but we did not examine the experiences of GM people at these intersections (*e.g.,* the most closely associated measures of societal stigma may not be the same for Black, transgender women as they are for the sample overall) and therefore are not generalizable to communities of color and other minoritized groups. Our sample was almost 80% White, which limited our ability to evaluate for differences in model fit based on racial or ethnic minority participants. Similarly, our sample was over 50% non-binary GM people. Therefore, the experiences of transgender women and transgender men and their experiences of societal stigma may be obscured. The combination of low variability in race, ethnicity, and economic status in our sample significantly impacts our findings. Intersections of economic status, race, sexual orientation, and gender identity, among other marginalized groups in society are important considerations when evaluating the role of stigma broadly, and subsequently our analysis of societal stigma. Previous work, for example, found that among sexual minority men with HIV and who use stimulants, outness played a protective role in the risk of worse kynurenine/tryptophan ratios, a biomarker that helps indicate the progression of HIV, among White men, but this was not the case for sexual minority men of color (Vincent et al., 2021). Rates of discrimination and violence among GM people of color are also higher when compared to White peers and are more likely to be living below the U.S. poverty line (James et al., 2016).

Measures of minority stress used in our analyses were adapted for GM people but have not been validated in this population. Our measures of discrimination and victimization allow for only a dichotomous participant response (yes/no), therefore we are unable to determine frequency, severity, or any other characteristics of these experiences. These findings are also developed form cross-sectional data; therefore, we cannot infer causality from these findings. Another important consideration is that none of the variables representing societal stigma were developed for this purpose and none allowed for more localized representation of participant experiences (*e.g.*, within the community where a person lives, works, and interacts). The role of social support was not represented in the measurement model and this could impact our findings as social support is a moderating factor in minority tress. Examination of the relationship between societal stigma and social support or covarying for social support in the future analyses could address this consideration. There is also opportunity to extend this work by applying the identified proxy measures of societal stigma (State LGBT+ Business Climate Index and population density) and their relationship with health outcomes among GM people.

Conclusions

The identification of a proxy measure of societal stigma is a tool that can help to better understand underlying causes of minority stress. We hypothesized that at least one of the identified measures of structural stigma would be associated with the minority stress experiences of GM participants in our sample. We found two variables that were associated with two components of minority stress: State LGBT+ Business Climate Indices where greater inclusion was associated with less experienced stigma and less anticipated stigma and population density where living in urban areas was associated with less anticipated stigma and greater outness of GM identities. Application of these measures as a proxy for societal stigma should be explored in continued analyses to further investigate the relationship between societal stigma and other forms of stigma, as well as to examine its potential role as a social determinant of health.

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Disclaimer

Contents are solely the responsibility of the authors and do not necessarily represent the views of the National Institute of Health.

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Table 2.1. Characteristics of The PRIDE Study 2019 Annual Questionnaire participants (*N* =1,947)

Variable	
Personal characteristics	
Age, in years (Mean ± SD)	31.7 (11.8)
Race/ethnicity[a]	
American Indian or Alaska Native	7 (0.4)
Asian	33 (1.7)
Black, African American, or African	21 (1.1)
Hispanic, Latino, or Spanish	52 (2.7)
Middle Eastern or North African	6 (0.3)
Native Hawaiian/Pacific Islander	2 (0.1)
White	1,774 (92.0)
Another race/ethnicity than is listed	34 (1.8)
Gender Identity	
Another gender identity	121 (6.2)
Non-binary	933 (47.9)
Transgender man	615 (31.6)
Transgender woman	279 (14.3)
Sexual Orientation	
Another Sexual Orientation	19 (1.0)
Asexual/Demisexual/Gray-Ace	277 (14.2)
Bisexual/Pansexual	600 (30.1)
Gay/Lesbian	319 (16.4)
Queer	656 (33.7)
Straight/Heterosexual Only	77 (4.0)
Socioeconomic position	
Annual individual income	
<$20K	993 (51.0)
$20K to <$40K	402 (20.6)
$40K to <$60K	248 (12.7)
$60K to <$80k	109 (5.6)
≥$80K	196 (10.1)
Educational level	
No high school diploma	15 (0.8)
High school/GED graduate or some college	700 (36.0)
College degree (2- or 4-year)	743 (38.2)
Graduate degree	489 (25.1)

Notes: The number of participants in the study group with available data are reported as (*n*) and percent (%) of *n* for each variable.

[a] Category is not mutually exclusive; therefore, percentages may be greater than 100%.

Standard deviation=SD

Table 2.2 Descriptive Statistics for Minority Stress and Societal Stigma Variables (*N* =1,947)

Variable	n (%)	M (SD)	Range
Minority Stress Measures			
Experienced Stigma (Past-Year)			
Verbal Harassment	670 (34.4)		
Physically Attacked or Injured	52 (2.7)		
Physical Violence from Romantic or Sexual Partner	19 (1.0)		
Unfair Treatment at or While Applying for Work	286 (14.7)		
Unfair Treatment While Renting/Buying a Home or Unfair Eviction	56 (2.9)		
Received Poorer Service Than Others at Restaurants/Stores/Businesses/Agencies	356 (18.2)		
Unfair Treatment While a Student at School or Other Educational Setting	169 (8.7)		
Denied or Provided Lower Quality Medical Care	263 (13.5)		
Denied or Provided Lower Quality Mental Health Care	137 (7.0)		
Unfair Treatment or Harassment from Police or Law Enforcement	72 (3.4)		
Unwanted Sexual Contact	101 (5.2)		
Anticipated Stigma			
Perceived Safety Where Currently Live		1.8 (0.9)	0-4
Perceived Safety Where Raised		2.6 (1.0)	0-4
Perceived Acceptance Where Currently Live		1.7 (1.0)	0-4
Perceived Acceptance Where Raised		2.9 (1.0)	0-4
Internalized Stigma		1.9 (0.8)	1-5
Outness		4.6 (2.2)	0-10
Societal Stigma			
State-Level Policy Environments		17.9 (12.8)	-2.5-34
State LGBT+ Business Climate Index		68.9 (19.1)	31.2-90
Percent of a State that Voted Republican		0.5 (0.1)	0.3-0.7
Google Trend		79.3 (7.7)	62-100
US Region (Lives in the South)	539 (27.7)		
Living in a Metropolitan Area	1,737 (89.1)		

Table 2.3 Correlations (r) and standard errors (SE) for the measurement model of minority stress (N=1,947)

Variable	Associated With	r	SE	*p*
Experienced Stigma	Anticipated Stigma	0.358	0.047	< .001
	Internalized Stigma	0.129	0.027	< .001
Anticipated Stigma	Internalized Stigma	0.180	0.032	< .001
Outness	Internalized Stigma	-0.270	0.021	< .001
	Anticipated Stigma	-0.408	0.032	< .001

All correlations statistically significant (p < .001)

Table 2.4. Unstandardized estimates, standard errors, and standardized estimates for the structural equation model of minority stress (*N*=1,947)

Outcome Variable	Google Trend			Movement Advancement Project			State LGBT+ Business Climate Index		
	B	SE	β	B	SE	β	B	SE	β
Experienced Stigma	**0.006**	0.003	0.075	0.011	0.006	0.235	**-0.012**	0.005	-0.374
Anticipated Stigma	0.000	0.002	0.004	-0.004	0.005	-0.186	**0.013**	0.004	0.524
Internalized Stigma	-0.002	0.003	-0.014	0.004	0.006	0.057	0.003	0.005	0.066
Concealment	0.006	0.008	0.023	0.004	0.015	0.021	-0.010	0.013	-0.085

Bolded values are statistically significant at $p<.05$

Table 2.5. Unstandardized estimates, standard errors, and standardized estimates for the structural equation model of minority stress continued (*N*=1,947)

Outcome Variable	% State Who Voted Republican			Region (South)			Metropolitan County		
	B	SE	β	B	SE	β	B	SE	β
Experienced Stigma	**-1.279**	0.546	-0.186	-0.012	0.059	-0.009	0.084	0.064	0.042
Anticipated Stigma	0.156	0.458	0.029	-0.057	0.052	-0.053	**0.205**	0.053	0.132
Internalized Stigma	0.941	0.528	0.102	0.103	0.060	0.055	-0.066	0.062	-0.025
Concealment	0.006	0.008	0.023	0.004	0.015	0.021	-0.010	0.013	-0.085

Bolded values are statistically significant at $p<.05$

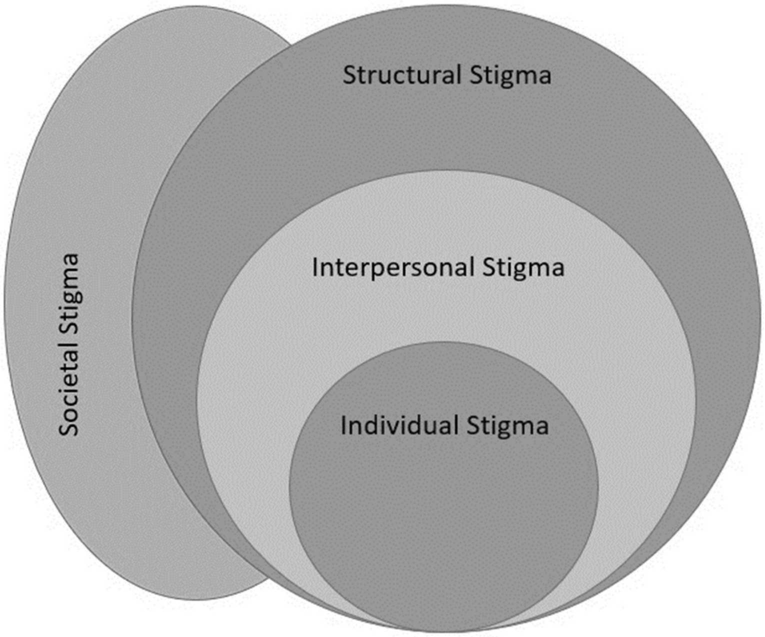

Figure 2.1. Societal Stigma in relationship to constructs of stigma within the social ecological model (Bronfenbrenner, 1994; White Hughto et al., 2015)

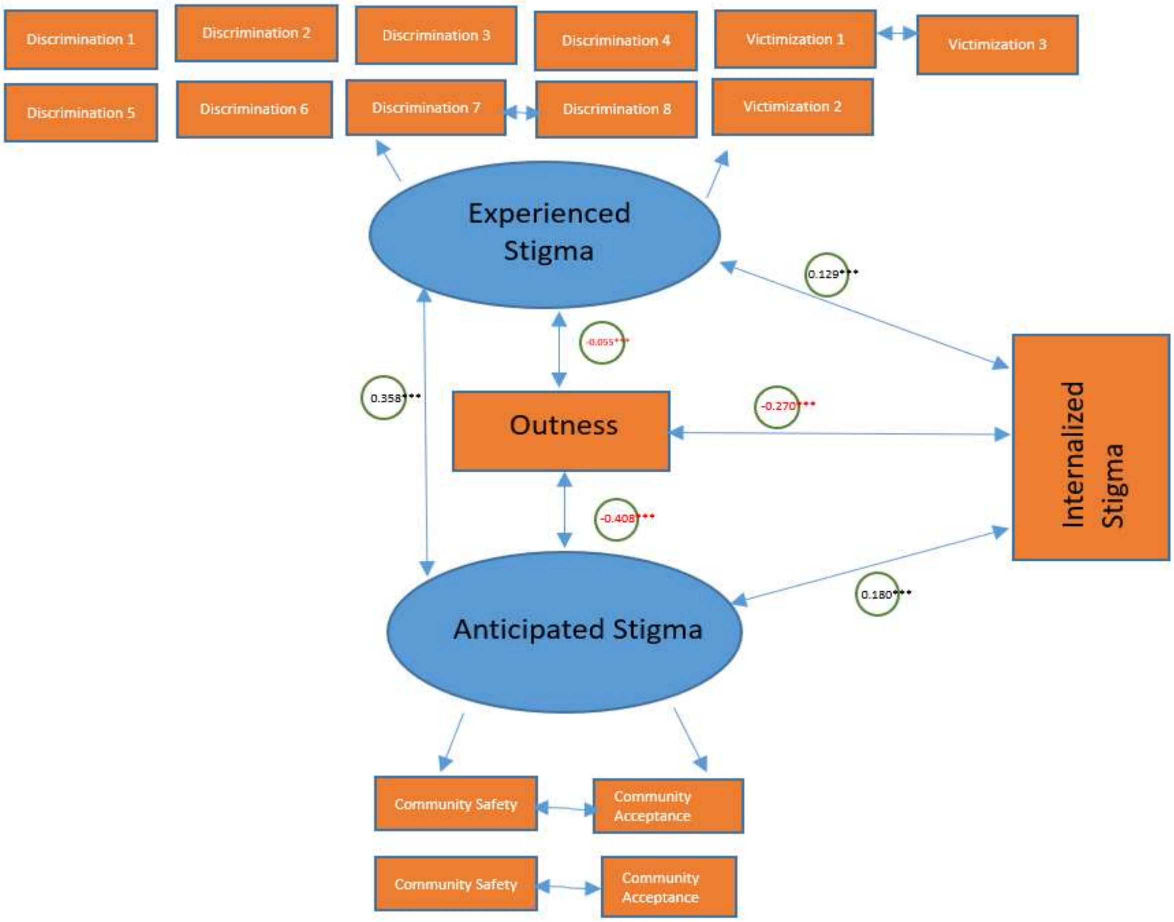

Figure 2.2. Measurement Model of Societal Stigma and Its Association with Minority Stress (N=1,947)

p<.05*, p<.01**, p<.001***

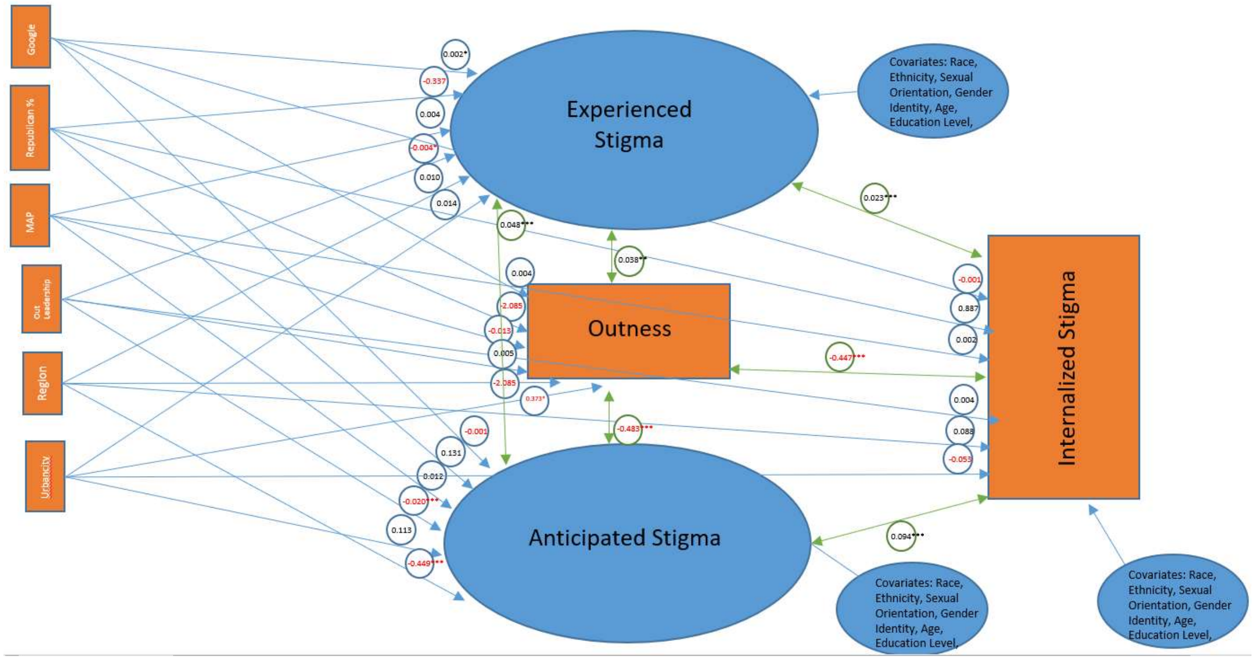

Figure 2.3. Structural Model of Societal Stigma and Its Association with Minority Stress (N=1,947)

Blue Circles/Lines: Societal stigma standardized coefficients

Green Circles/Lines: Minority stress standardized correlations

p<.05*, p<.01**, p<.001***

Chapter 3

Societal Stigma and Its Association with Stressors in Health Care Experienced by Gender Minority People

** The PRIDE Study team will be included as co-authors for manuscript submission

Kristen D. Clark, MSN[1], Jae M. Sevelius, PhD[2,3], Carol Dawson-Rose, PhD[1], Sandra J. Weiss, PhD[4], Annesa Flentje, PhD[1,5,6]

Anticipated journal: Social Science & Medicine

[1]Department of Community Health Systems, School of Nursing, University of California San Francisco, San Francisco, CA

[2]Center for AIDS Prevention Studies, Department of Medicine, University of California, San Francisco, CA

[3]Center of Excellence for Transgender Health, Department of Medicine, University of California, San Francisco, CA

[4]Department of Community Health Systems, UCSF Depression Center, University of California, San Francisco, CA

[5]Alliance Health Project, Department of Psychiatry and Behavioral Sciences, School of Medicine, University of California, San Francisco

[6]The PRIDE Study/PRIDEnet, Stanford University School of Medicine

Corresponding Author:

Kristen D. Clark, PhD candidate, MSN, RN

University of California, San Francisco

2 Koret Way, San Francisco, CA 94143

Email: kristen.clark@ucsf.edu

Telephone: 415-476-1435

Annesa Flentje- annesa.flentje@uscf.edu

Jae Sevelius- j.sevelius@ucsf.edu

Carol Dawson-Rose- carol.dawson-rose@ucsf.edu

Sandra Weiss- sandra.weiss@ucsf.edu

Abstract (282/300), main text (3136/4000), tables (3), figures (1), supplemental tables (2)

Abstract

Gender minority (GM; individuals whose gender is not aligned with that traditionally associated with the sex that was assigned to them at birth) people have widely reported mistreatment in health care settings. These practices are enacted by individuals within society who hold stigmatizing beliefs. However, the relationship between health care mistreatment and societal stigma (*i.e.*, the degree to which society approves of GM people) is unclear and is not measured consistently. We analyzed data from 2,031 GM participants in The Population Research in Identity and Disparities for Equality (PRIDE) Study 2019 Annual Survey to determine whether measures of societal stigma were associated with past-year reports of care refusal and/or lower quality care in medical or mental health care settings. We created a proxy measure of societal stigma by incorporating variables used, tested, and evaluated in previous literature. These variables included: population density (derived from Rural-Urban Continuum codes), and State LGBT+ Business Climate Index scores from Out Leadership (range: 25-100). Participants were queried, "In the PAST 12 MONTHS, have you been denied or given lower quality medical health care?" and could respond yes or no. The question was asked again regarding mental health care. Care refusal and/or lower quality care during the past year was reported by 18.9% of our sample for medical settings and 12.5% for mental health settings. We found no associations between the societal stigma variables and past-year reports of care refusal and/or lower quality care in medical or mental health care settings. These findings may indicate that additional types of stigma or other measures of societal stigma are more important to an understanding of any adverse care received by GM people. Other, more nuanced measures of care should also be considered.

Introduction

Gender minority (GM; individuals whose gender is not aligned with that traditionally associated with the sex assigned to them at birth) people report experiencing a broad range of discriminatory practices in health care settings. These experiences include: deficits in health care provider knowledge about the unique health needs of GM people, denial of health care services, verbal harassment, and physical violence (Ayhan et al., 2019; Cicero et al., 2019). Similar patterns have been identified in mental health settings (Snow et al., 2019). Lack of provider competence in caring for GM people and direct mistreatment can have deleterious effects on their health and health care access, including being associated with avoidance of health care services (James et al., 2016; Kcomt, 2019). Avoidance of health care services has in turn been associated with negative health outcomes such as poor self-reported general health, substance use (Reisner et al., 2015) and increased risk of seeking gender affirming treatments (*e.g.*, hormone replacement therapy) from outside of the traditional health care system, such as black market sources **(Cicero et al., 2019; Glick et al., 2018)**. While the risks posed by health care mistreatment have been broadly examined, the association of health care mistreatment and societal stigma, or the degree to which society disapproves of GM people (Hasenbush et al., 2014), is less understood.

While structural stigma relates more broadly to "societal norms and institutional policies that constrain access to resources" (White Hughto et al., 2015), we propose that this is actually two independent constructs. Societal stigma, or the degree to which society disapproves of GM people is determined by cultural norms and standards (Hasenbush et al., 2014). Another stigma, interpersonal stigma, relates to direct forms of stigma such as harassment and violence. Whether the broader, dominant society accepts or denies the existence and rights of a marginalized group dictates the policies, resources, and behaviors that follow. Measurement of societal stigma is a reflection of structural stigma and interpersonal stigma (Figure 3.1). Objective measures of societal stigma, or negative societal attitudes toward GM people, remain absent in scientific literature. Proxy measurement of societal stigma may include individual state-level policies (Hatzenbuehler et al., 2009), but the total SGM related state-level policies (Clark, et al., 2021) may be a more salient reflection of a state's societal stigma since the action to pass a number of policies may indicate the prioritization of GM inclusivity at the state-level. Another state-level proxy for societal stigma may be the percent of a state that voted Republican in a recent presidential election (White Hughto et al., 2016). These variables may be applied to represent the attitudes toward GM people in a given area. These potential proxy measures of societal stigma have been associated with a range of outcomes such as poor mental health (Hatzenbuehler et al., 2009) and greater reports of denial of health care services (White Hughto et al., 2016). While these proxy measures of societal stigma have been associated with poor health outcomes and reduced access to health services, little is known about the association between societal stigma and specific forms of interpersonal stigma, such as health care mistreatment. Previous research (Aim 1) has identified several proxy variables as being associated with the experiences of minority stress (the excess stress experienced by GM people related to their gender identity) among GM people. State LGBT+ Business Climate Index scores that were inclusive toward SGM people were associated with lower reports of discrimination and victimization and less anticipated stigma in a sample of GM people (Clark et al., 2021). In the same study, GM participants who lived where there was greater population density reported less anticipated stigma and more outness. While State LGBT+ Business Climate Index scores and population density where one lives have each been associated with components of minority stress, these proxy variables for societal stigma have not been evaluated for their relationship with health care mistreatment among GM people.

Aims

Therefore, the aim of our study was to compare the relationship between the selected proxy measures of societal stigma and past-year care refusal and/or lower quality care in medical or mental health care settings, after controlling for demographic factors (*e.g*. age, income, education, race/ethnicity) in a diverse national sample of GM adults. We hypothesized that at least one proxy variable for societal stigma (*i.e.,* lower State LGBT+ Business Climate Index scores and living in a lower population density area) will be associated with care refusal and/or lower quality care in medical or mental health care settings.

Methods

Data were collected within the 2019 Annual Questionnaire of The Population Research in Identity and Disparities for Equality (PRIDE) Study, a national, longitudinal cohort study of sexual and gender minority people (SGM; people whose sexual orientation is not heterosexual and/or individuals whose gender is not aligned with that traditionally associated with the sex assigned to them at birth) who reside in the United States (see Lunn et al., 2019 for detailed description of The PRIDE Study). Briefly, the PRIDE Study is a community-engaged research study with an active Participant Advisory Committee that reviewed and informed the adaptations of measures used in the survey to be inclusive of SGM communities. This committee also reviewed and approved the study described here. This study was also reviewed and approved by the Institutional Review Boards of Stanford University and the University of California, San

Francisco. An extensive recruitment effort for The PRIDE Study included PRIDEnet (a group of research participants, community partnerships) partners, online communications (*e.g.*, blog posts, newsletters, advertising on social media), in-person outreach at conferences and events, the distribution of The PRIDE Study promotional items, and word-of-mouth. Upon enrollment in The PRIDE Study, participants were provided with informed consent which they then affirmed electronically. Eligible participants included individuals who were 18 years and older, resided in the United States or its territories, self-identified as a sexual and/or gender minority person, and who took annual questionnaire measures outlined in these analyses between June 2019 and May 2020.

Measures

Demographics. Demographics queried of participants included age, race/ethnicity, sexual orientation, gender identity, highest level of education completed, and individual gross income. Age was calculated by subtracting participants' birth date, obtained upon study enrollment, from the date that the survey was completed. Race/ethnicity were measured with a categorical variable (select all that apply). Participants were provided with a categorical variable where participants were asked to choose one term, from a set of terms, that most closely aligned with their sexual orientation (*i.e.,* asexual, bisexual/pansexual, gay/lesbian, queer, straight/heterosexual, another sexual orientation). Participants were provided with a categorical variable where participants were asked to choose one term, from a set of terms, that most closely aligned with their gender identity *(i.e.,* cisgender man, cisgender woman, non-binary, transgender man, transgender woman, another gender identity). Highest level of education was measured by an ordinal variable with 10 options ranging from "no schooling" to "Professional degree". We coded this in our analyses as a 4-level variable (*i.e.,* "no high school diploma", "high school/GED graduate or some college", "college degree [2- or 4-year]", and "graduate degree). Individual income was measured by an incremental, ordinal 11-item variable ranging from \$0 to \$100,000 (collapsed in Table 3.1).

Societal Stigma. Three variables were used as proxy variables for societal stigma. These items were matched to participants based on participant reported ZIP code.

Population density- Participant ZIP code was converted to Rural-Urban Continuum Codes, which identified the population density where the participant resided. These codes were recoded to a single dichotomous variable, indicating urban (participant resides in a designated metropolitan county) and non-urban (participant resides in an area that is not designated as a metropolitan county; United States Department of Agriculture, n.d.).

State LGBT+ Business Climate Index- Out Leadership, an organization aimed at connecting SGM business leaders, releases an annual report that provided an index on how SGM inclusive each state is to inform business leaders, organizations, and policymakers of "the costs created by polices that create minority stress" (Out Leadership, 2019). The LGBT+ Business Climate Index incorporates data from the Movement Advancement Project, the United States Transgender Survey, The Williams Institute, the Bureau of Labor Statistics, and the United States Treasury to create a score for each state that ranges from 25-100 from points allotted from five domains: "Legal and Nondiscrimination Protections", "Youth and Family Support", "Political and Religious Attitudes", "Health Access and Safety", and "Work Environment and Employment". These scores were included as a single continuous variable where higher values indicate a more positive environment for SGM people.

Care Refusal and/or Lower Quality of Care in Medical and Mental Health Settings. Health care mistreatment was measured by two variables. “In the PAST 12 MONTHS, have you been denied or given lower quality medical care?”. Participants were also queried: “In the PAST 12 MONTHS, have you been denied or given lower quality **mental** health care?” Response options included “yes” or “no” for both items, participants that indicated “yes” and attributed it to their gender identity or gender expression were coded as 1, “no” responses or “yes” responses and did not indicate gender identity or expression as the reason were coded as 0. Participants who did not access care in the past 12 months were excluded from analysis (*n*=53).

Analysis. Differences in the experiences of stigma and health vary among people of different gender identities, therefore participants were divided into three study population categories to capture the unique experiences of each (Cicero et al., 2020; Kattari et al., 2019, 2020). Participants who described their gender as “non-binary” or “another gender identity not listed” were combined in a gender expansive category. Participants who described their gender identity as transgender man or transgender woman remained in those two separate categories. Descriptive statistics were used for demographic variables and past-year care refusal and/or lower quality of care in medical and mental health care settings among the three gender identity categories: gender expansive people, transgender men, and transgender women. In our analyses, where sexual orientation and race/ethnicity were included as covariates, each of the response options were dichotomously coded (coded 1 if endorsed, 0 if not endorsed) to account for multiple selections of race or sexual orientation. Logistic regression analysis was used to evaluate the relationship between the three societal stigma variables (*i.e.,* State LGBT+ Business Climate Index scores and population density where one lives) as predictors and reported past-year care refusal and/or lower quality care in two models. Separate models tested the relationship between each of the three societal stigma variables and reported past-year care refusal and/or lower quality care in medical settings. Three additional models tested the relationship between the three societal stigma variables and past-year care refusal and/or lower quality care in mental health care settings. Age, race/ethnicity, sexual orientation, sex assigned at birth (in gender expansive participant models) education level, and income were included in all models as covariates. All models were run for each of the three gender identity categories (*i.e.,* gender expansive people, transgender men, transgender women) using Stata 15 (Stata Corp, 2017).

Results

Participants

Participant characteristics are presented in Table 3.1. A total of 2,031 participants were included in these analyses; 55.1% (*n*=1,119) were gender expansive people, 30.3% (*n*=626) were transgender men, and 13.8% (*n*=280) were transgender women. The mean age of participants was 32.0 years (Standard Deviation [SD]=12.2), and the sample was predominantly White only (*n*=1,836; 91.9%). Nearly two-thirds (64.4%, *n*=1,303) of participants had earned a college degree, and half (50.1%, *n*=1,014) reported an individual income of less than $20,000 annually.

Reported Past-Year Medical Care Denial or Lower Quality of Care

Among our total sample, 18.8% (*n*=378) of GM people reported being denied or given lower quality medical care in the past-year. Within our study groups, 19.4% (*n*=215) of gender expansive people, 19.1% (*n*=118) of transgender men, and 16.3% (*n*=45) of transgender women reported past-year care refusal and/or lower quality medical care. The results of models evaluating societal stigma in relation to reported past-year care refusal and/or lower quality care in medical settings are presented in Table 3.2 (Supplemental Table 3.1 shows results of covariates). There was no relationship between societal stigma and reported past-year denial or lower quality medical care among any of the gender identity categories.

Reported Past-Year Mental Health Care Denial or Lower Quality of Care. Among our total sample, 12.5% (*n*=219) reported being denied or given lower quality mental health care in the past-year. Within our study groups, 12.3% (*n*=118) of gender expansive people, 14.6% (*n*=80) of transgender men, and 8.6% (*n*=21) of transgender women reported past-year care refusal and/or lower quality care in mental health settings. The results of models evaluating societal stigma in relation to reported past-year care refusal and/or lower quality care in mental health settings are presented in Table 3.3 (Supplemental Table 3.2 shows model results of covariates). There was no relationship between societal stigma and reported past-year care refusal and/or lower quality care in mental health settings reported by any of the gender identity categories.

Discussion

We found 18.8% of our sample reported being denied or given lower quality medical care within the past-year, with gender expansive people (19.4%) and transgender men (19.1%) reporting the highest prevalence and transgender women (16.3%) reporting the least. While previous research found that transgender men report higher levels of health care mistreatment (James et al., 2016), our findings revealed gender expansive people are also vulnerable. Although there have been increased efforts to provide gender affirming care services in recent years, these efforts have been focused on a predominantly binary construct of gender where care is directed toward transition to presentation as either man or woman (Lykens et al., 2018; Paine, 2018). These improvements may not align with the needs of gender expansive individuals.

Further, we found that 12.5% of our sample reported denial or lower quality of mental health care within the past-year, with transgender men (14.6%) reporting the highest prevalence, followed by gender expansive people (12.3%), and transgender women (8.6%) reporting the least. No study to date, to our knowledge, has independently examined the prevalence of health care mistreatment among GM people in mental health settings. GM people are known to have a high prevalence of depression, suicide, and other mental health disparities (Valentine & Shipherd, 2018). Further work to evaluate how mental health settings can improve care for GM people is critical to addressing these needs.

Contrary to our hypotheses, there were no relationships between any variables representing societal stigma and the reports of denial or lower quality care in medical or mental health care settings among GM participants. This could be due to the lack of sensitivity and/or specificity of currently available proxy measures of societal stigma. It is also possible that other forms of stigma, such as individual stigma, not reflected in our analyses could be better indicators of societal stigma. Our study tested the measures found to be most promising Aim 1) based on previous analyses, but did not find an association between these markers of societal stigma and being denied or given lower quality health care. Given our null findings, what could be important is to examine the relationship between societal stigma and efforts to educate health care workers on inclusive care of GM people.

Efforts to improve the education of clinicians (*e.g.*, physicians, nurses) on the health care needs of GM people have been made in at least some health care facilities (Klein & Nakhai, 2016; Wyckoff, 2019) and in clinical education (Cooper et al., 2018; Kelley et al., 2008; Klotzbaugh et al., 2020; Mayfield et .al., 2017; Sherman et al., 2020; Walsh & Hendrickson, 2015). However, it is possible that the effects of these efforts are not enough to counteract the stigmatizing beliefs surrounding gender diversity nor to consistently combat systemic transphobia. In one study, transphobia, a form of societal stigma, was a stronger predictor of mistreatment of GM people in health care settings than cultural competency education (Stroumsa et al., 2019), indicating that societal stigma could contextualize where there may be variations in the effectiveness of cultural competency education. For example, communities with greater transphobia may be slower to enact cultural competency education and when enacted, it may take longer to be evident in-patient care delivery. However, our measures of societal stigma did not directly capture transphobia.

Despite the importance of this study, limitations remain. The cross-sectional study design limits our ability to determine causality; therefore, our results are solely correlational. Sample recruitment relied on convenience sampling; therefore, our sample is not representative of the broader GM population. Most specifically we have a high proportion of White participants. We know that GM people of color face higher rates of discrimination both in health care and outside of health care (Cicero et al., 2019), thus the sample composition likely impacted our results. Further, any measure of societal stigma should be tested among a diverse sample due to the multiple forms of oppression that individuals from multiple minoritized identities (*e.g.*, one who is GM and sexual minority, one who is GM and Black) experience (Wesp et al., 2019). Dichotomous answer options to indicate denial or lower quality of care in medical and mental health settings limit the variability in GM people's reports of their experiences. A participant who reported lower quality of care one time in the past year was represented equally with a person who may have reported both denial and lower quality care many times across the past year. The question is also vague in its definition of lower quality of care, potentially leading to measurement error.

Future work should be directed in several areas. Continued improvement is needed in the measurement of societal stigma. Our results suggest that societal stigma is not associated with reported refusal or lower quality of care of GM people; but this could be due to the specific measures used to assess societal stigma and refusal/quality of care. Further, research on efforts to improve knowledge in health care settings has been largely focused on clinicians (Bristol et al., 2018; White Hughto et al., 2017; Wyckoff, 2019). Individuals in support roles (*e.g.,* lab technicians, dietary staff) are less frequently included when evaluating outcomes (Ding et al., 2020), yet they comprise part of the care team for GM people in health care settings. Evaluation of the relationship between societal stigma and the effectiveness of GM health education is needed to comparatively evaluate training of established clinicians who may have received dated training or hold stigmatizing beliefs.

Conclusions

GM people continue to report both denial and lower quality of care in medical and mental health care settings, but despite less societal stigma in some areas, no difference was observed using any of the potential measures of societal stigma used here. Further research that employs more nuanced and detailed measures of mistreatment in health care broadly is needed to advance efforts to improve the health care experiences of GM people. Evaluation of the differences in effectiveness of GM health education among clinicians and pre-licensure students based on location and setting could be an opportunity to target future interventions.

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Table 3.1. Characteristics of The PRIDE Study 2019 Annual Questionnaire participants

Variable	Total Sample *N*=2,031	Gender Expansive (*N* =1,119)	Transgender Men (*N* =626)	Transgender Women (*N* =280)
Personal characteristics				
Age, in years (Mean ± SD)	32.0 (12.2)	30.4 (10.5)	30.0 (10.9)	42.6 (14.7)
Race/ethnicity[a]				
American Indian or Alaska Native	7 (0.4)	3 (0.3)	1 (0.2)	3 (1.1)
Asian	33 (1.7)	24 (2.2)	8 (1.3)	1 (0.4)
Black, African American, or African	30 (1.5)	14 (1.3)	12 (1.9)	4 (1.5)
Hispanic, Latino, or Spanish	50 (2.5)	24 (2.2)	19 (3.1)	7 (2.6)
Middle Eastern or North African	6 (0.3)	3 (0.3)	1 (0.2)	2 (0.7)
White	1,836 (91.9)	1,013 (91.8)	571 (92.3)	252 (91.6)
Another race/ethnicity than is listed	35 (1.8)	22 (2.0)	7 (1.1)	6 (2.2)
Gender Identity				
Non-binary	956 (47.2)	956 (85.4)	0 (0)	0 (0)
Transgender Man	626 (30.9)	0 (0)	626 (100.00)	0 (0)
Transgender Woman	280 (13.8)	0 (0)	0 (0)	280 (100)
Another Gender Identity	163 (8.1)	163 (14.6)	0 (0)	0 (0)
Sexual Orientation				
Asexual Only	94 (4.7)	59 (5.3)	18 (3.0)	17 (6.1)
Bisexual Only	187 (9.4)	90 (8.1)	70 (11.4)	27 (9.8)
Gay Only	86 (4.3)	29 (2.6)	54 (8.8)	3 (1.1)
Lesbian Only	118 (5.9)	60 (5.4)	2 (0.3)	56 (20.2)
Pansexual Only	102 (5.1)	44 (4.0)	29 (4.7)	29 (10.5)
Queer Only	309 (15.5)	198 (17.8)	100 (16.3)	11 (4.0)
Questioning Only	13 (0.7)	2 (0.2)	6 (1.0)	5 (1.8)
Straight/Heterosexual Only	55 (2.8)	1 (0.1)	46 (7.5)	8 (2.9)
Another Sexual Orientation Only	5 (0.3)	2 (0.2)	0 (0.0)	3 (1.1)
More than 1 Sexual Orientation	1,031 (51.6)	626 (56.4)	287 (46.9)	118 (42.6)
Socioeconomic position				
Annual individual income				
<$20K	1,014 (50.1)	570 (50.1)	347 (55.4)	97 (34.6)
$20K to <$40K	422 (20.8)	259 (23.2)	116 (18.5)	47 (16.8)
$40K to <$60K	267 (13.2)	156 (13.9)	41 (14.6)	70 (11.2)
$60K to <$80k	115 (5.7)	62 (5.5)	25 (4.0)	28 (10.0)
≥$80K	207 (10.2)	72 (6.4)	68 (10.9)	67 (23.9)
Educational level				
No high school diploma	16 (0.8)	6 (0.5)	6 (1.0)	4 (1.4)

Variable	Total Sample *N*=2,031	Gender Expansive (*N* =1,119)	Transgender Men (*N* =626)	Transgender Women (*N* =280)
High school/GED graduate or some college	705 (34.8)	342 (30.6)	270 (43.2)	93 (33.2)
College degree (2- or 4-year)	781 (38.6)	457 (40.8)	207 (33.1)	117 (41.8)
Graduate degree	522 (25.8)	314 (28.1)	142 (22.7)	66 (23.6)

Notes: The number of participants in the study group with available data are reported as (*n*) and percent (%) of *n* for each variable.

[a]Category is not mutually exclusive; therefore, percentages may be greater than 100%.

SD=standard deviation

Table 3.2. Results of Models Evaluating Societal Stigma in Relation to Reported Past-Year Care Refusal and/or Lower Quality Medical Care

	Gender Expansive			Transgender Men			Transgender Women		
Past-Year Medical Health Care Discrimination	OR	95% CI	*p*	OR	95% CI	*p*	OR	95% CI	*p*
Model 1: Lives in a metropolitan area	1.10	0.62-1.92	.750	1.17	0.63-2.17	.629	1.99	0.64-5.51	.247
Model 2: State LGBT+ Business Climate Index	1.01	1.00-1.02	.106	1.01	1.00-1.02	.244	0.99	0.97-1.01	.393

OR=odds ratio
CI= confidence interval
Covariates in analyses included age, sexual orientation, race/ethnicity, individual income, education level, and sex assigned at birth (only for gender expansive group)

Table 3.3 Results of Models Evaluating Societal Stigma in Relation to Reported Past-Year Care Refusal and/or Lower Quality Mental Health Care

	Gender Expansive			Transgender Men			Transgender Women		
Past-Year Medical Health Care Discrimination	OR	95% CI	*p*	OR	95% CI	*p*	OR	95% CI	*p*
Model 1: Lives in a metropolitan area	0.67	0.29-1.54	.340	1.54	0.72-3.28	.259	0.34	0.03-3.45	.361
Model 2: State LGBT+ Business Climate Index	1.01	1.00-1.02	.090	1.01	0.99-1.02	.281	1.00	0.97-1.03	.952

Covariates in analyses included age, sexual orientation, race/ethnicity, individual income, education level, and sex assigned at birth (only for gender expansive group)

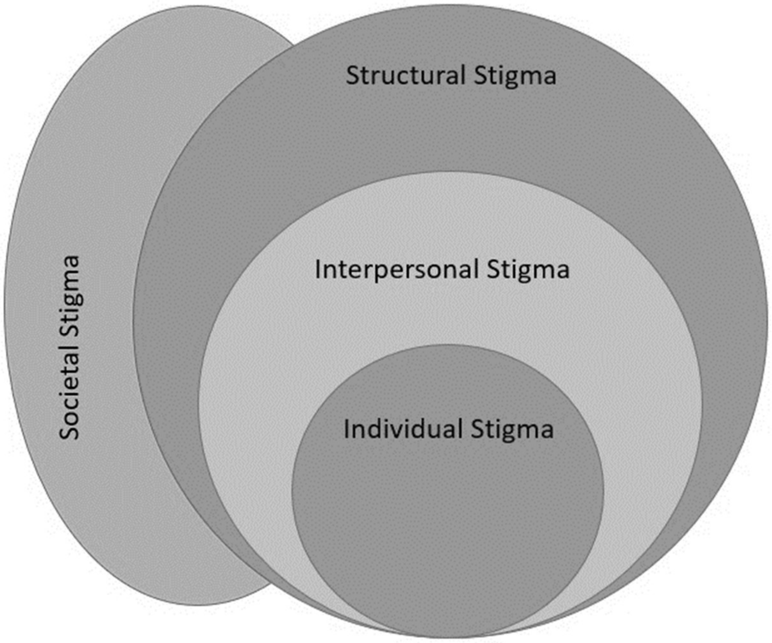

Figure 3.1. Societal Stigma and Stigma Conceptual Model (adapted from Hughto White et al., 2015)

Supplemental Table 3.1. Results of Models Evaluating Societal Stigma in Relation to Reported Past-Year Care Refusal and/or Lower Quality Medical Care with Covariate Results

	Gender Expansive			Transgender Men			Transgender Women		
Past-Year Medical Health Care Discrimination	OR	95% CI	*p*	OR	95% CI	*p*	OR	95% CI	*p*
Model 1: Lives in a metropolitan area	1.10	0.62-1.92	.750	1.17	0.63-2.17	.629	1.99	0.64-5.51	.247
Age	1.00	0.99-1.02	.572	1.02	0.99-1.04	.144	1.00	0.97-1.03	.867
Asexual	1.14	0.78-1.66	.508	1.08	0.58-2.01	.820	1.48	0.52-4.18	.459
Bisexual	1.16	0.83-1.62	.385	0.92	0.57-1.48	.727	**2.94**	**1.35-6.38**	**.007**
Gay	0.92	0.57-1.48	.723	1.49	0.91-2.46	.116	3.62	0.82-15.98	0.90
Lesbian	1.18	0.74-1.87	.490	3.20	0.24-42.51	.377	0.91	0.41-2.04	.823
Pansexual	1.18	0.81-1.73	.380	0.76	0.42-1.39	.378	0.82	0.34-2.01	.666
Queer	**1.63**	**1.14-2.32**	**.007**	**1.74**	**1.10-2.76**	**.019**	1.07	0.44-2.60	.877
Questioning	1.30	0.63-2.71	.476	0.89	0.32-2.43	.817	0.49	0.06-4.10	.508
Same-gender Loving	0.92	0.42-1.98	.822	0.59	0.22-1.59	.295	0.78	0.08-7.26	.835
Straight/ Heterosexual	0.63	0.06-6.36	.697	1.83	0.86-3.89	.115	2.88	0.57-14.71	.203
Two-spirit	0.84	0.21-3.44	.812	-	-	-	0.77	0.05-12.76	.855
American Indian or Alaskan Native	**3.29**	**1.55-6.99**	**.002**	2.85	0.89-9.11	.077	0.63	0.10-4.07	.629
Asian	1.21	0.57-2.58	.621	1.40	0.47-4.15	.542	-	-	-
Black, African American, or African	**2.92**	**1.45-5.86**	**.003**	0.87	0.26-2.94	.822	4.01	0.30-53.17	.292
Hispanic, Latino, or Spanish	0.99	0.51-1.90	.967	1.22	0.49-3.06	.668	0.88	0.11-6.73	.899

	Gender Expansive			Transgender Men			Transgender Women		
	OR	95% CI	*p*	OR	95% CI	*p*	OR	95% CI	*p*
Middle Eastern or North African	1.38	0.58-3.27	.460	3.22	0.47-21.86	.232	-	-	-
Native Hawaiian or Pacific Islander	**5.70**	**1.18-27.56**	**.030**	-	-	-	-	-	-
White	1.05	0.57-1.94	.879	1.24	0.47-3.33	.663	1.42	0.25-8.19	.697
None of These Fully Describes Me	0.89	0.30-2.61	.834	0.70	0.07-6.71	**.759**	**17.82**	**1.74-182.46**	**.015**
Income	0.99	0.92-1.06	.721	0.94	0.86-1.02	.143	0.93	0.83-1.04	.190
Education	0.95	0.75-1.20	.662	0.99	0.70-1.38	.931	0.59	0.34-1.02	.061
Model 2: State LGBT+ Business Climate Index	1.01	1.00-1.02	.106	1.01	1.00-1.02	.244	0.99	0.97-1.01	.535
Age	1.00	0.99-1.02	.744	1.02	1.00-1.04	.145	1.00	0.97-1.03	.958
Asexual	1.12	0.77-1.64	.557	1.07	0.57-1.99	.840	1.43	0.51-4.04	.496
Bisexual	1.15	0.82-1.62	.409	0.93	0.58-1.50	.768	**2.87**	**1.31-6.26**	**.008**
Gay	0.90	0.55-1.46	.664	1.48	0.90-2.44	.127	3.40	0.78-14.92	.105
Lesbian	1.19	0.74-1.90	.469	3.37	0.25-44.85	.358	0.95	0.42-2.12	.897
Pansexual	1.24	0.85-1.82	.262	0.77	0.42-1.41	.403	0.76	0.31-1.84	.540
Queer	**1.58**	**1.10-2.27**	**.013**	**1.75**	**1.10-2.77**	**.018**	1.12	0.46-2.72	.807
Questioning	1.32	0.64-2.73	.459	0.87	0.32-2.39	.793	0.47	0.06-4.01	.492
Same-gender Loving	0.92	0.41-2.05	.830	0.62	0.23-1.67	.346	0.76	0.08-6.92	.806
Straight/Heterosexual	0.69	0.07-6.88	.749	1.88	0.89-3.97	.098	2.62	0.52-13.29	.244
Two-spirit	0.91	0.22-3.74	.900	-	-	-	1.00	0.06-16.21	1.00
American Indian or Alaskan Native	**3.34**	**1.57-7.12**	**.002**	2.78	0.87-8.80	.085	0.62	0.09-4.28	.629

	Gender Expansive			Transgender Men			Transgender Women		
	OR	95% CI	*p*	OR	95% CI	*p*	OR	95% CI	*p*
Asian	1.22	0.57-2.62	.604	1.42	0.48-4.26	.527	-	-	-
Black, African American, or African	**2.72**	**1.33-5.54**	**.006**	0.92	0.27-3.10	.887	3.96	0.29-53.45	.301
Hispanic, Latino, or Spanish	1.01	0.52-1.95	.985	1.17	0.47-2.93	.737	0.75	0.10-5.89	.783
Middle Eastern or North African	1.33	0.56-3.14	.522	2.87	0.42-19.46	.280	-	-	-
Native Hawaiian or Pacific Islander	**6.68**	**1.37-32.66**	**.019**	-	-	-	-	-	-
White	1.07	0.57-2.01	.825	1.30	0.49-3.47	.602	1.30	0.22-7.53	.772
None of These Fully Describes Me	0.88	0.30-2.59	.820	0.61	0.06-5.85	.672	**15.45**	**1.49-160.38**	**.022**
Income	0.98	0.92-1.05	.652	0.93	0.85-1.02	.110	0.92	0.82-1.03	.157
Education	0.96	0.75-1.21	.704	0.97	0.69-1.36	.848	**0.57**	**0.33-0.98**	**.041**

Bolded values are statistically significant at $p<.05$
Covariates in analyses included age, sexual orientation, race/ethnicity, individual income, education level, and sex assigned at birth (only for gender expansive group)

Supplemental Table 3.2. Results of Models Evaluating Societal Stigma in Relation to Reported Past-Year Care Refusal and/or Lower Quality Mental Health Care with Covariate Results

	Gender Expansive			Transgender Men			Transgender Women		
Past-Year Medical Health Care Discrimination	OR	95% CI	*p*	OR	95% CI	*p*	OR	95% CI	*p*
Model 1: Lives in a metropolitan area	0.67	0.29-1.54	.340	1.54	0.72-3.28	.259	0.34	0.03-3.45	.361
Age	1.01	0.99-1.04	.344	1.00	0.97-1.04	.875	1.00	0.96-1.04	.887
Asexual	0.75	0.45-1.26	.274	1.47	0.72-3.00	.293	2.04	0.50-8.30	.317
Bisexual	1.27	0.82-1.96	.289	1.36	0.77-2.40	.282	2.44	0.85-7.01	.097
Gay	0.71	0.37-1.36	.301	**1.84**	**1.03-3.29**	**.039**	1.79	0.27-12.00	.547
Lesbian	1.49	0.84-2.64	.169	3.96	0.33-47.15	.276	1.46	0.49-4.33	.497
Pansexual	0.79	0.46-1.34	.382	1.04	0.54-2.00	.912	2.20	0.71-6.86	.173
Queer	1.25	0.80-1.96	.323	1.73	0.98-3.02	.055	1.64	0.51-5.29	.411
Questioning	**4.77**	**2.24-10.14**	**<.001**	0.15	0.02-1.19	.073	1.13	0.10-13.06	.923
Same-gender Loving	0.69	0.24-1.99	.487	**0.15**	**0.03-0.76**	**.022**	0.19	0.00-8.88	.393
Straight/ Heterosexual	-	-	-	1.22	0.43-3.50	.707	**9.88**	**1.36-71.60**	**.023**
Two-spirit	1.66	0.21-13.10	.633	7.00	0.14-361.19	.333	7.77	0.18-342.70	.289
American Indian or Alaskan Native	0.51	0.13-1.96	.329	1.51	0.27-8.32	.637	0.97	0.06-15.41	.983
Asian	0.51	0.15-1.68	.267	1.26	0.34-4.60	.730	-	-	-
Black, African American, or African	1.78	0.72-4.40	.215	2.22	0.73-6.70	.159	5.29	0.17-169.00	.346
Hispanic, Latino, or Spanish	0.91	0.40-2.06	.822	1.72	0.67-4.43	.264	0.78	0.04-14.08	.867

	Gender Expansive			Transgender Men			Transgender Women		
	OR	95% CI	*p*	OR	95% CI	*p*	OR	95% CI	*p*
Middle Eastern or North African	0.39	0.09-1.83	.235	-	-	-	-	-	-
Native Hawaiian or Pacific Islander	1.15	0.12-11.13	.901	-	-	-	-	-	-
White	0.52	0.24-1.12	.096	0.47	0.18-1.28	.141	1.83	0.12-27.20	.661
None of These Fully Describes Me	-	-	-	1.41	0.19-10.24	.736	-	-	-
Income	**0.88**	**0.79-0.97**	**.012**	0.96	0.85-1.07	.433	0.87	0.74-1.02	.085
Education	0.87	0.63-1.18	.369	0.85	0.56-1.29	.449	0.84	0.43-1.65	.612
Model 2: State LGBT+ Business Climate Index	1.01	1.00-1.02	.090	1.01	0.99-1.02	.281	1.00	0.97-1.03	.952
Age	1.01	0.98-1.03	.632	1.01	0.97-1.04	.701	0.99	0.95-1.04	.795
Asexual	0.72	0.42-1.21	.215	1.54	0.75-3.19	.243	2.23	0.56-8.93	.257
Bisexual	1.33	0.85-2.06	.210	1.38	0.77-2.46	.275	2.54	0.89-7.26	.082
Gay	0.67	0.34-1.32	.249	1.68	0.92-3.04	.090	1.99	0.30-13.41	.478
Lesbian	1.50	0.84-2.68	.174	5.53	0.44-69.51	.185	1.53	0.51-4.57	.443
Pansexual	0.81	0.48-1.39	.451	1.09	0.56-2.11	.808	2.29	0.74-7.15	.152
Queer	1.17	0.75-1.84	.490	1.65	0.94-2.90	.083	1.56	0.48-5.03	.460
Questioning	**4.98**	**2.34-10.60**	**<.001**	0.15	0.02-1.20	.074	1.29	0.12-14.42	.834
Same-gender Loving	0.57	0.17-1.87	.351	**0.16**	**0.03-0.82**	**.028**	0.21	0.00-9.77	.424
Straight/Heterosexual	-	-	-	1.20	0.42-3.43	.735	**10.98**	**1.52-79.30**	**.018**
Two-spirit	2.17	0.28-16.87	.459	4.58	0.09-228.20	.445	4.78	0.14-165.68	.390

	Gender Expansive			Transgender Men			Transgender Women		
	OR	95% CI	*p*	OR	95% CI	*p*	OR	95% CI	*p*
American Indian or Alaskan Native	0.51	0.14-1.94	.326	2.10	0.34-12.76	.422	0.93	0.07-13.02	.956
Asian	0.52	0.16-1.75	.294	1.02	0.26-4.00	.982	-	-	-
Black, African American, or African	1.59	0.61-4.09	.341	2.26	0.72-7.10	.163	4.64	0.15-140.74	.378
Hispanic, Latino, or Spanish	0.97	0.42-2.20	.937	1.47	0.55-3.97	.442	0.75	0.04-15.31	.853
Middle Eastern or North African	0.37	0.08-1.70	.201	-	-	-	-	-	-
Native Hawaiian or Pacific Islander	1.39	0.14-13.44	.774	-	-	-	-	-	-
White	0.56	0.25-1.23	.148	0.45	0.16-1.27	.132	1.64	0.11-24.07	.719
None of These Fully Describes Me	-	-	-	1.03	0.13-7.91	.978	-	-	-
Income	**0.87**	**0.78-0.96**	**.008**	0.94	0.84-1.06	.302	0.87	0.74-1.03	.104
Education	0.90	0.66-1.24	.515	0.82	0.54-1.25	.364	0.86	0.43-1.69	.655

Covariates in analyses included age, sexual orientation, race/ethnicity, individual income, education level, and sex assigned at birth (only for gender expansive group)

Chapter 4

Stressors in Health Care and Their Association to Symptoms Experienced by Gender Minority People

Kristen D. Clark, MSN, RN is a PhD Candidate and Annesa Flentje, PhD is an Associate Professor at the University of California San Francisco, School of Nursing, San Francisco, CA

Jae M. Sevelius, PhD

Associate Professor

University of California San Francisco, Department of Medicine, Center for AIDS Prevention Studies

San Francisco, CA

Carol Dawson-Rose, RN, PhD, FAAN and Sandra J. Weiss PhD, RN, FAAN are Professors at the University of California San Francisco, School of Nursing

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Corresponding Author: Kristen Clark, MSN, RN

University of California, San Francisco School of Nursing, Department of Community Health Systems 2 Koret Way, San Francisco, CA 94143 (Email: kristen.clark@ucsf.edu)

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Abstract

Background: Gender minority (GM) people experience poor treatment in health care settings and poor physical and mental health outcomes. However, little is known about the relationship between health care stressors and their association with mental and physical symptoms.

Objectives: To assess the relationship between health care stressors and symptoms of emotional distress and impaired physical functioning experienced by GM people. The moderating effects of gender identity, race, and ethnicity on this relationship were also examined.

Methods: Data were derived from the 2015 United States Transgender Survey were used to evaluation the relationship between a composite metric of health care stressors and an assessment of potential physical impairments. The Kessler Psychological Distress Scale (K-6) provided a measure of emotional distress. Multiple linear regression and logistic regression were used to analyze the research aims.

Results: 22,705 participants from diverse gender identity subgroups were included in this analysis. The linear regression model indicated that participants who had experienced at least one stressor in health care during the past 12 months had 0.10 greater symptoms of emotional distress (β=0.14, p<.001). Results of the logistic regression revealed that participants who had experienced stressors in health care during the past 12 months had 85% greater odds of having at least one symptom of physical impairment (OR=1.85, p<.001). Transgender men exposed to stressors in health care were more likely than transgender women to experience emotional distress and have increased odds of having a symptom of physical impairment. However, stressors in health care were associated with greater distress for transgender women than for other gender identity subgroups. Further, Black

participants experienced more symptoms of emotional distress in association to health care stressors than White participants.

Discussion: Results suggest that GM people who encounter stressors in health care experience more symptoms of emotional distress and greater odds of having symptoms of physical impairment, with transgender men and Black individuals being at greater risk of symptoms of emotional distress. Findings indicate the need for in-depth assessment of organizational and individual factors that contribute to discriminatory and abusive care for GM people. Interventions are needed to educate health care workers and support GM people to reduce their risk of stressor-related symptoms.

Introduction

Gender minority (GM; individuals whose gender is not solely congruent with the sex they were assigned at birth, sometimes self-described as transgender or non-binary) people experience high rates of health disparities, both psychological and physical (Institute of Medicine, 2011). For example, GM people have been found to attempt suicide at high rates (James et al., 2016) as well as to experience disproportionate rates of depression and substance use (Valentine & Shipherd, 2018). Poor physical health outcomes are also of concern, although there are limited studies that evaluate physical health among GM people. In a study examining Medicare data, GM people were more likely to qualify for coverage due to mental or physical disability as opposed to age compared to their cisgender (individuals whose gender is congruent with the sex that they were assigned at birth) counterparts (Dragon et al., 2017). GM people are also more likely to self-report poor physical health (Streed et al., 2017) and to have cardiovascular disease (Alzahrani, T. et al., 2019). These poor health outcomes have been associated with multiple types of chronic stress and stigma exposure experienced by GM people due to their marginalized status (Fredriksen-Goldsen et al., 2014). Stressors have been linked to worsening symptom experiences (Humphreys et al., 2014), but this relationship has not yet been tested among GM people. Stress comes from many sources, but of concern are the high rates of stressors experienced by GM people when accessing health care.

Stressors in health care (*i.e.,* perceived and enacted stigma, discrimination, or verbal/physical harm) have been reported by GM people in numerous studies (Cicero et al., 2019). The most consistently cited concerns center on reports of providers who possess insufficient knowledge regarding GM people and their specific health needs, leaving patients with the burden of educating providers themselves (Kcomt, 2019). Further, overt discrimination, such as the refusal of health care services, is frequently reported and has been associated with delaying or avoiding health care services (Cicero et al., 2019).

Experiences of Different Gender Identity Subgroups

Little is known about the effect of stressors in health care on particular subgroups of GM people, such as transgender men, transgender women, non-binary people (people whose gender identity does not align solely as man or woman) and people who self-identify as crossdressers. Differing experiences in health care based on gender identity have been examined to varying degrees. Health care experiences of transgender women have been most widely studied, describing a range of stressors in health care environments such as the refusal of health care services and inadequate provider knowledge (Cicero et al., 2019). Similar findings have been observed among transgender men and non-binary people, although they have been less widely studied (Cicero et al., 2019). Studies have found that health care discrimination or fear of discrimination was associated with greater odds of avoiding health care services among transgender men when compared to transgender women; however lower odds were observed among non-binary people when compared to transgender women (Kattari et al., 2019; Kcomt et al., 2020). Results from further research indicate that non-binary people were more likely to describe their provider as having not treated them with respect, when compared to transgender participants (Kattari et al., 2020). However, the symptoms experienced by GM people have been understudied in the exigent literature.

The Role of Race and Ethnicity in Health Care Experiences and Symptoms

In contrast to gender identity, differences in health care experiences based on race and ethnicity have been described widely. The literature suggests that people who identify their race as other than White experience poorer care and outright discrimination (Paradies et al., 2014). A systematic review of racism among health care providers found that 2/3 of the included 37 articles identified racism among health care providers (Paradies et al., 2014). Inequalities in health care among racial and ethnic minority groups have been identified in wide-ranging forms, such as lack of provider knowledge on variation in assessment findings on darker pigmented skin (Sommers et al., 2009) to measures of individually perceived discrimination, such as being made to feel inferior due to race, treated with less courtesy, or received poorer services (Hausmann et al., 2010). A meta-analysis on the relationship between racism and health disparities identified associations between racism and depression, post-traumatic stress disorder, and poor physical health (Paradies et al., 2015). There is limited literature examining the health care experiences of GM people of color, but these studies have found mixed results. Several studies found no statistically significant difference in the health care experiences of GM people of color when compared to White participants (Kattari et al., 2019, 2020). However, other literature has identified that racial or ethnic minority groups are more likely to report poor experiences in health care settings (Howard et al., 2019; Kattari et al., 2015). Many GM people are people of color. Thus, discerning whether there are differences among gender identity and racial/ethnic subgroups in how their experiences may influence symptoms will help in understanding the experiences of GM people of color within the health care system (Cicero et al., 2019). This knowledge is essential in developing precision-based interventions to address their needs.

Aims

The primary aim of this study was to assess the relationship between stressors in health care and symptoms experienced by GM people (*i.e.,* emotional distress and impaired physical functioning). We also sought to determine whether there were differences in the relationship between stressors in health care and symptoms experienced based on gender identity and race and ethnicity (*e.g*., non-binary participants have different symptom severity in association with experiencing stressors in health care when compared to other gender identity groups).

Methods

Data from the 2015 United States Transgender Survey (USTS), collected in August and September 2015, were used for these analyses. The USTS is the largest sample of GM people in the U.S (*N* = 27,715). The survey was developed by the National Center for Transgender Equality to describe the lives, experiences, and health of a sample of GM people in the United States (James et al., 2016). Participants include individuals 18 years of age or older who resided in the United States, its territories, and foreign military bases, and who identify as GM. Participants were recruited both online and through partnership with community organizations. Surveys could be completed in English or Spanish. The study was approved by the University of California, Los Angeles' North General Institutional Review Board. Full details regarding the survey can be found in the final report of its initial findings (James et al., 2016). Due to the removal of identifiable data, this current study was determined to be exempt by the Institutional Review Board at the University of California, San Francisco. Variables related to participant demographics, experiences within health care (stressors in health care), self-reported mental status (symptoms of emotional distress), and self-reported physical status (symptoms of physical impairment) were applied in our analyses.

Demographics

Except for variables regarding gender identity and race/ethnicity, demographic data were used primarily for descriptive purposes. This information included age, highest level of education, individual gross income, sex assigned at birth, and sexual orientation. highest level of education was measured by fourteen levels (*e.g.,* less than 8th grade, professional degree). This was recoded to four items (*i.e.*, less than high school, high school graduate/GED, some college [no degree or Associate's], Bachelor's degree or higher), based on the American Community Survey (*American Community Survey*, n.d.). Individual gross income was measured by asking participants to identify what their individual income was in 2014 with 18-levels ranging from "no income", $1-$5,000, and then increasing by $2,500 increments to "$150,000 or more". These were recoded to a 6-level categorical variable for greater ease in analysis (*i.e.,* no income, $1-$9,999, $10,000- $24,999, $25,000-$49,999, $50,000-$100,000, and $100,000 or more). Race and ethnicity were measured by 9 discrete options (*e.g.,* Alaska Native, Middle Eastern/North African) and a fill-in-the-blank option for participants. These were recoded to an 8-item variable to facilitate comparison of race/ethnicity categories to standard census reports. Gender identity was assessed using a two-step method. This included an item to identify one's sex assigned at birth and a second item for participants to self-select the description closest to their self-described gender (*i.e.,* "If you had to choose only one of the following terms, which best describes your current gender identity?"). Participants were provided six options (*i.e.*, crossdresser, woman, man, trans woman, trans man, non-binary/genderqueer). Gender identity was then recoded and categorized into five groups by incorporating responses from self-selected gender and sex assigned at birth (*i.e.,* crossdresser, non-binary, transgender man, and transgender woman).

Stressors in Health Care

Ten items from the USTS survey were used to measure potential stressors in health care. Participants who reported that they accessed health care within the past 12 months were then asked whether they had encountered each of the ten items during health care interactions. Participants could answer 'yes' or 'no' (*e.g.,* "I had to teach my doctor or other health care provider about trans people so that I could get appropriate care"). The items were developed by a review of the literature performed by scholars in the field of GM health, followed by group consensus regarding which items to include in the final survey (National Center for Transgender Equality, 2018). The items were then tested for feasibility and acceptability in a sample of 100 GM community members. Due to a severely right-skewed distribution, these items were used in two ways in our analyses. One variable was created by recoding the ten stressors in health care items as a single dichotomous variable where a participant who indicated that they experienced at least one stressor was coded as 1; whereas no endorsement of any health care stressors was coded as 0. A second variable was also created indicating the sum of the total stressors experienced, ranging from 0 (no stressors in health care reported) to 10 (all stressors in health care were reported).

Symptoms of Emotional Distress

Participants' scores on the Kessler-6 (K-6) scale were used to assess symptoms of emotional distress (Kessler et al., 2002). This scale assessed emotional distress symptoms during the last 30 days. Using a Likert-type scale, with response options from 1-5. Higher scores indicate more distress (range 6-30). The K-6 has shown excellent validity (Kessler et al., 2003) with the sensitivity to detect serious mental illness ranging from 0.98 to 0.99 (Kessler et al., 2003). The original Cronbach Alpha was 0.89 (Kessler et al., 2003), with subsequent studies showing alpha scores consistently >0.80. The K-6 also has demonstrated moderate to high test-retest correlation coefficients (Kang et al., 2015; Lee et al., 2012). The sum score of the measure was used in this analysis, with log transformation was used to improve normality of the distribution.

Symptoms of Impaired Physical Functioning

Participants' symptoms of impaired physical functioning were measured using four dichotomous items that were adapted from CDC's Behavioral Risk Factor Surveillance System (Centers for Disease Control and Prevention, n.d.-a) and the National Health Interview Survey (Centers for Disease Control and Prevention, n.d.-b). The items assess (1) difficulty walking or climbing stairs, (2) difficulty dressing or bathing, (3) difficulty concentrating, remembering, or making decisions, and (4) difficulty independently performing activities such as errands, visiting a doctor‘s office or shopping. Due to a severely right skewed distribution, the four items were totaled to create a single dichotomous variable indicating whether the participant has 1 or more symptoms of physical functioning (coded as 1) or no symptoms of impaired physical functioning (coded as 0).

Data Analysis

All analyses were run using Stata 15 (Stata Corp, 2017). Individual items were assessed for distribution and missingness. Participants who did not access health care in the past 12 months were not asked the 10 items pertaining to stressors in health care and were subsequently dropped from our analyses (*n* = 3,737). Participants whose responses to the variables of interest (*i.e.,* stressors in health care, symptoms of impaired physical functioning, and symptoms of emotional distress) were missing were also dropped from further analysis (*n* = 921). There were no statistically significant differences in demographic characteristics between the participants who were dropped and those included in the analysis. Descriptive statistics were used to determine demographics of the remaining sample (*e.g.,* age, highest level of education).

Linear regression analysis was used to examine the relationship between stressors in health care and symptoms of emotional distress in two separate models. In the first model, health care stressors were treated as a dichotomous predictor (experienced stressors or not) of emotional distress. In the second model, stressors in healthcare were treated as a continuous variable (number of stressors in health care, ranging from 1-10) to predict symptoms of emotional distress. To examine the relationship between stressors in health care and symptoms of impaired physical functioning (a dichotomous variable), logistic regression analysis was used. All models were adjusted to account for variance due to age, highest level of education, and individual gross income based on previously identified correlations between these variables and the dependent variables.

The moderating effects of gender identity as well as race and ethnicity were evaluated by building interaction terms into the regression models. Gender identity was examined based on each of the four population groups coded as dummy variables: crossdresser, non-binary, transgender men, and transgender women. Transgender women were chosen as the reference group due to the substantial health literature on this gender subgroup. Race/ethnicity was examined based on eight discrete groups coded as dummy variables: Alaskan Native/Native American, Asian, Black, Latino/Hispanic, multiracial, Pacific Islander, race that was not listed, with White participants chosen as the references group due to the substantial health literature showing minority racial and ethnic groups as having poorer outcomes.[25]

Results

Sample characteristics are described in full in Table 4.1 ($N = 22{,}705$). The mean age of participants was 31.5 ($SD = 13.6$). Within our sample, 83.1% of participants were White, 5.1% were Latinx or Hispanic, 4.9% were multiracial, 2.8% were Black, and 4.1% were other racial groups (*e.g.,* Asian, Hawaiian or Pacific Islander, Alaskan/Native American). The representation of gender identities was diverse: 33.9% transgender women, 29.9% transgender men, 33.8% non-binary, and 2.4% crossdressers. Participants also reported diverse sexual orientations: 21.3% queer, 17.8% pansexual, 14.7% bisexual, 12.6% heterosexual/straight, and the remainder (33.6%) identifying other sexual orientations. The sample was highly educated, with 85.7% reporting at least some college. At least one stressor in health care was reported by 66% of the participants in our sample. The most frequently endorsed stressor was answering “no” in response to the item “My doctor knew I was trans and treated [me] with respect” (Table 4.2).

Symptoms of Emotional Distress

The mean emotional distress score for the sample was 10.39, with a range of 0 to 24. Findings for the initial linear regression model indicated that participants who experienced at least one stressor in health care during the past 12 months was associated with 0.10 greater symptoms of emotional distress ($\beta = 0.14$, $p < .001$, partial $\eta^2 = 0.03$), holding age, highest level of education, and individual income constant (see Table 4.3). In a second model including only participants who had experienced stressors, we found that each additional stressor was associated with 0.03 greater symptoms of emotional distress ($\beta = 0.13$, $p < .001$, partial $\eta^2 = 0.02$), holding age, highest level of education, and individual income constant.

In testing the moderating role of gender identity in these emotional distress models, we found a statistically significant difference between all gender identity subgroups in the association between exposure to stressors and symptoms of emotional distress. Transgender women were chosen as the reference group due to the substantial health literature on this gender subgroup. Individuals who identified as crossdressers ($\beta = -0.05$, $p < .01$) and non-binary people($\beta = -0.05$, $p < .01$) who experienced stressors in health care had less symptoms of emotional distress than transgender women. However, transgender men who experienced stressors in health care had more symptoms of emotional distress than transgender women ($\beta = 0.03$, $p < .01$).

In testing the moderating effect of race/ethnicity on the relationship between stressors in health care and emotional distress, Black GM people had significantly more emotional distress associated with exposure to stressors than did White GM people ($\beta = 0.06$, $p < .01$). No differences were found among other racial groups.

Symptoms of Physical Impairment

In our sample, 37.5% ($n = 8{,}523$) of participants responded that they had 1 or more symptoms of physical impairment. Our first logistic regression model revealed that participants who indicated they had experienced at least one stressor in health care during the past 12 months were 86% greater odds ($OR = 1.86$, $p < .001$, 95% CI 1.74-1.98) of at least one symptom of physical impairment compared to participants who had experienced no stressors in health care. In a second model including only participants who had experienced stressors in health care, we found that each additional stressor was associated with a 22% greater odds of at least one symptom of physical impairment (OR = 1.22, $p < .001$, 95% CI 1.18-1.25), holding age, highest level of education, and individual income constant (see Table 4.4).

In examining the moderating effect of gender identity, we found statistically significant differences for two gender identity subgroups when compared to the reference group, transgender women. Individuals who identified as crossdressers (*OR* = 0.36, *p* < .01; 95% CI 0.20, 0.65) had lower odds of health care stressors being associated with symptoms of physical impairment than did transgender women. In contrast, transgender men who experienced stressors in health care had greater odds of health care stressors being associated with symptoms of physical impairment than did transgender women (*OR* = 1.20, *p* < .05; 95% CI 1.03, 1.40). Tests for the moderating effect of race/ethnicity indicated no differences between racial/ethnic groups in the relationship between experiencing stressors in health care and their symptoms of physical impairment.

Discussion

Sixty six percent of the gender minority people in our study who accessed health care in the past 12 months experienced at least one stressor as part of their health care experience. The most frequent stressors experienced were “My doctor knew I was trans and treated me with respect” (responding ’no’) and “I had to teach my doctor or other health care provider about trans people so that I could get appropriate care”. Participants who indicated they had experienced at least one stressor in health care had a 0.10 greater symptoms of emotional distress and each additional stressor was associated with a 0.03 greater for symptoms of emotional distress. These findings are consistent with previous literature describing discrimination as associated with poor mental health outcomes such as suicidal ideation (Wolford-Clevenger et al., 2018), depression (Jefferson et al., 2013), and anxiety (Puckett et al., 2020). Discrimination in health care has also specifically been associated with suicidal ideation (Romanelli et al., 2018), depression (Kattari et al., 2020) and psychological distress among GM people.

Some of our most important findings center on the vulnerability of gender identity subgroups. Transgender women had a significantly stronger relationship between experiencing health care stressors and having symptoms of emotional distress than did crossdressers or non-binary people. Although we can't assume a causal effect due to the cross-sectional nature of these data, these results suggest that the emotional well-being of transgender women may be more adversely affected by the disrespect or discrimination they experience in health care than individuals in many other GM groups. This finding extends previous research showing that transgender women are highly stigmatized compared to the general population (Balzer & Hutta, 2012; James et al., 2016) by providing evidence that such stigmatization may have salient relationship with their mental health. However, our results for transgender men are also great concern. Transgender men had an even greater association between health care stressors and symptoms of emotional distress than did transgender women. Extant literature points to greater care avoidance among transgender men in relationship to stressors experienced in health care (Kattari et al., 2019). It is possible that symptoms of emotional distress could be worsened due to delayed access to needed health care services. Additionally, efforts to study and improve health care services have predominantly focused on transgender women(Cicero et al., 2019), potentially yielding less attention to transgender men and their mental health risk.

Our results for the moderating effect of race/ethnicity show differences between Black and White GM people but no other race/ethnic group differences. Black participants had a stronger relationship than White participants between their exposure to stressors in health care and symptoms of emotional distress. While previous literature has found higher rates of stigma and discrimination for GM people who are Black (Jefferson et al., 2013), our results indicate that these types of stressors may have a more substantial impact on the emotional well-being of Black than White GM people. Surprisingly, we did not find this same degree of impact among other racial/ethnic minority groups, although Latinx/Hispanic (Kattari et al., 2015) and American Indian (James et al., 2016; Kattari et al., 2015) GM participants have been found in previous literature to experience significant rates of stigma and discrimination in health care. However, our findings were not focused on rates but rather on the association between stressors in health care and their relationship with symptoms of emotional distress and physical impairment.

We also found that GM people who experienced stressors in health care during the past 12 months had 85% greater odds of having at least one symptom of physical impairment when compared to participants who had experienced no stressors in health care. Of note, transgender men showed a stronger association between exposure to health care stressors and symptoms of physical impairment when compared to transgender women. Stressors in health care have been shown previously to have deleterious effects on health as well as on one's willingness to seek health care services (Cicero et al., 2019; Seelman et al., 2017; White Hughto et al., 2016). Individuals who have experienced mistreatment in health care settings may delay care, with negative effects on their physical health, or they may experience a greater impact on physical symptoms because they are more sensitized to health care stressors (Seelman et al., 2017). This relationship is particularly concerning among transgender men who, as noted earlier, are more likely to avoid health care when they experience care-related stressors compared to other gender identity subgroups (Kattari et al., 2019). Because we cannot assume the direction of the relationship we found, it is possible that individuals who have more frequent health care visits because of impairments in physical functioning are also more frequently exposed to stressors in health care.

Our findings for differences between gender identity subgroups in the relationship between health care stressors and physical functioning show a similar pattern as our results for emotional distress. Results suggest that transgender women had greater odds of a physical impairment in association with health care stressors than did crossdressers. Conversely, transgender men who experienced stressors in health care had greater odds of physical impairment than transgender women. Like our findings for symptoms of emotional distress, transgender men appeared to be at greatest risk of physical impairments in relation to health care stressors when compared to the other gender identity subgroups in our analysis. While research on mental health outcomes among gender identity subgroups is limited, there is some evidence that mental health disorders, such as anxiety, may be more prevalent among transgender men (Millet et al., 2017) Studies are needed to examine potential biological and psychosocial factors that may increase the potential for increased vulnerability of transgender men to health care stressors and symptom development.

We did not find a moderating effect of race/ethnicity on the relationship between experiencing stressors in health care and symptoms of physical impairment. Although Black GM people did experience a greater symptoms of emotional distress in relation to health care stressors than did White participants, we did not find that racial difference for symptoms of physical impairment. A meta-analysis on the effects of racism in health care indicated that discrimination in health care settings had a greater association with mental health outcomes such as depression than on physical or general health (Paradies et al., 2015).

Implications for Research and Practice

Further research is needed to understand the effects of stressors more fully in health care on the emotional and physical symptoms of GM people. Deeper exploration into the nature of stressors experienced as well as their frequency and severity would convey a more detailed picture. The predominant research on health care experiences has focused on transgender women (Cicero et al., 2019; Melendez et al., 2006). Future work should extend this work to diverse gender identities and to include an intersectional lens to improve the relevance of future work to transgender men, non-binary people, and GM communities of color.

Our findings also indicate a need for in-depth assessment of organizational and individual factors within health care systems that contribute to discrimination, abusive, or insensitive care for GM people. An examination of where transgender men and GM people of color may be subjected to insensitive and/or harmful care is needed. Interventions are necessary to educate health care workers and support GM people to reduce their risk of stressor-related symptoms. Health care clinicians hold an important influence over patient care experiences and are key to improving the health care experiences of GM persons. Efforts are needed to educate health care workers on gender affirming care that is inclusive of gender, racial, and cultural diversity. Nurses and physicians are often the focus of these efforts (Bristol et al., 2018; Noonan et al., 2018). However, other members of the health care team (*e.g.,* laboratory technicians, dietary personnel) would benefit from these interventions as well. Further, the recruitment of diverse health care teams (in terms of gender and race) that are representative of the communities they serve can build trust and a health care environment that is more affirming.

Limitations

The cross-sectional design of this study prevents any causal inferences to be made or any assumptions about the direction of the relationship between stressors in health care and symptoms. An additional limitation is that the items representing stressors in health care were only given to participants who indicated that they had accessed health care in the past 12 months.

This removed over 3,700 participants from our analysis and may have biased results since those who have not accessed care may have avoided doing so because of previous exposure to stressors in health care (Seelman et al., 2017; White Hughto et al., 2016). Additionally, the items representing stressors in health care only offered participants the response options of 'yes' or 'no', precluding the ability to know the frequency with which participants experienced each stressor. Further, stressors were not weighted by severity of the experience. Lastly, our measure of physical impairment symptoms was limited in scope, representing a small portion of the varied symptoms associated with impairments in physical functioning. As a result, we may have missed participants with symptoms of other impairments, some of which may not affect their daily function but none-the-less impact their health (*e.g*., hypertension, diabetes). It is not clear whether the increase in symptom burden that was related to stressors for particular groups is due to their frequency of experiencing stressors in health care, the severity or intensity of particular stressors, the unique perception/interpretation of the stressor(s) by the individual, or other factors. Improved understanding of these factors would help to explain the differences we found between gender identity and race/ethnicity groups.

Conclusions

Stressors in health care were associated with symptoms of emotional distress and physical impairment among GM people in our sample. Most notably, transgender men and Black participants had a greater symptom burden in association with stressors in health care when compared to transgender women and White participants. Increased research on the characteristics of stressors in health care and how these are experienced among diverse gender and racial groups will increase the opportunity for the development of targeted interventions. The development of gender affirming, and culturally inclusive health care environments should be prioritized to improve the health care experiences of GM people, including GM people of color. Further, health care systems can employ a more inclusive workforce that reflects the communities they serve. Through a more informed and inclusive workforce, care of GM populations can be significantly improved, making strides toward reducing health disparities among GM people.

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Table 4.1. Sample Characteristics of the 2015 United States Transgender Survey

Variable	Total Sample *N* = 22,705 *n (%)*
Personal Characteristics	
Age, in years (Mean, SD)	31.5, 13.6
18 to 24	9,420 (41.5)
25 to 44	9,137 (40.2)
45 to 64	3,473 (15.3)
65+	675 (2.9)
Race/Ethnicity	22,705
Alaska Native/American Indian	267 (1.2)
Asian/Asian American	587 (2.6)
Black/African American	632 (2.8)
Latino/a/Hispanic	1,153 (5.1)
Multiracial	1,114 (4.9)
Native Hawaiian/Pacific Islander	51 (0.2)
Racial/ethnic identity not listed	38 (0.2)
White	18,863 (83.1)
Gender Identity	22,705
Crossdresser	554 (2.4)
Non-binary (assigned female at birth)	7,670 (33.8)
Transgender man	6,784 (29.9)
Transgender woman	7,697 (33.9)
Sex assigned at birth	22,705
Female	13,095 (57.7)
Male	9,610 (42.3)
Sexual Orientation	22,705
Asexual	2,314 (10.2)
Bisexual	3,344 (14.7)
Gay	1,076 (4.8)
Heterosexual/Straight	2,849 (12.6)
Lesbian	2,556 (11.3)
Same-gender loving	211 (0.9)
Pansexual	4,045 (17.8)
Queer	4,828 (21.3)
Demisexual	223 (1.0)
Sexual orientation not listed	1,259 (5.6)
Socioeconomic Position	
Annual Individual Income	22,290
No income	3,014 (13.5)
\$1 to \$9,999	6,234 (28.0)
\$10,000 to \$24,999	4,904 (22.0)
\$25,000 to \$49,999	3,834 (17.2)
\$50,000 to \$100,000	2,847 (12.8)
\$100,000 +	1,457 (6.5)
Educational Attainment	22,705
Less than high school	679 (3.0)
High school grad/GED	2,581 (11.4)
Some college/Associate's degree	10,394 (45.8)
Bachelor's degree or higher	9,051 (39.9)

Table 4.2. Items from 2015 United States Transgender Survey representing stressors in health care that were posed to participants who have accessed health care in the past 12 months

Question	Experienced stressor *n* (%)	Crossdresser *n* (%)	Non-binary *n* (%)	Transgender Men *n* (%)	Transgender Women *n* (%)
My doctor knew I was trans and treated with respect.*	13,609 (59.9)	443 (80.0)	5,539 (72.2)	1,633 (24.1)	1,481 (19.2)
I had to teach my doctor or other health care provider about trans people so that I could get appropriate care.	5,354 (23.6)	16 (2.9)	1,221 (15.9)	2,144 (31.6)	1,973 (25.6)
A doctor or other health care provider refused to give me trans-related care.	1,804 (8.0)	7 (1.3)	321 (4.2)	687 (10.1)	789 (10.3)
A doctor or other health care provider refused to give me other health care (*e.g.,* flu shot, physical).	662 (2.9)	3 (0.5)	194 (2.5)	219 (3.2)	246 (3.2)
My doctor asked me unnecessary/invasive questions about my trans status that were not related to the reason for my visit.	3,377 (14.9)	6 (1.1)	839 (10.9)	1,422 (21.0)	1,110 (14.4)
A doctor or other health care provider used harsh or abusive language when treating me.	1,083 (4.8)	2 (0.4)	52 (3.7)	382 (5.6)	360 (4.7)
A doctor or other health care provider was physically rough or abusive when treating me.	375 (1.7)	2 (0.4)	110 (1.43)	123 (1.8)	140 (1.8)
was verbally harassed in a health care setting.	1,289 (5.7)	6 (1.1)	318 (4.2)	456 (6.7)	509 (6.6)
I was physically attacked by someone during my visit in a health care setting.	116 (0.5)	1 (0.2)	24 (0.31)	29 (0.4)	62 (0.8)
I experienced unwanted sexual contact in a health care setting.	279 (1.2)	3 (0.5)	60 (0.8)	66 (1.0)	150 (2.0)

* the *n* (%) of participants who indicated “no” on this item is reported here.

Table 4.3. Results of multiple linear regression models evaluating stressors in health care on symptoms of emotional distress in the 2015 United States Transgender Survey, covarying: age, highest level of education, and individual income

Variables included in the model	R^2	*Adj.* R^2	β	t	p
Model 1: Age, Educational Attainment, Individual Income, Stressors in Health Care (dichotomous)	**0.25**	**0.25**			**<.001**
Stressors in Health Care (dichotomous)			**0.14**	**24.41**	**<.001**
Model 2: Age, Educational Attainment, Individual Income, Stressors in Health Care (continuous >0)	**0.22**	**0.22**			**<.001**
Stressors in Healthcare (continuous >0)			**0.13**	**24.41**	**<.001**
Model 3: Age, Educational Attainment, Individual Income, Stressors in Health Care (dichotomous) X Gender Identity	**0.26**	**0.26**			**<.001**
Stressors in Health Care x Crossdresser			**-0.05**	**-3.39**	**<.01**
Stressors in Health Care x Non-binary			**-0.05**	**-4.21**	**<.01**
Stressors in Health Care x Transgender men			**0.03**	**2.71**	**<.01**
Stressors in Health Care x Transgender women (comparison group)			-	-	-
Model 4: Age, Educational Attainment, Individual Income, Stressors in Health Care (dichotomous) X Race/Ethnicity	**0.25**	**0.25**			**<.001**
Stressors in Health Care X Alaskan Native/American Indian			0.02	1.65	.10
Stressors in Health Care X Asian/Asian American			0.02	1.85	.07
Stressors in Health Care X Black/African American			**0.03**	**2.85**	**<.01**
Stressors in Health Care X Latino/Hispanic			0.01	1.06	.29
Stressors in Health Care X Multiracial			0.02	1.81	.07
Stressors in Health Care X Native Hawaiian/Pacific Islander			0.02	1.97	.05
Stressors in Health Care X Race/Ethnicity not listed			-0.01	-0.49	.63
Stressors in Health Care X White (comparison)			-	-	-

Bolded items are statistically significant
All models covaried for age, education and income

Table 4.4. Results of logistic regression models evaluating stressors in healthcare on symptoms of physical impairment in the 2015 United States Transgender Survey, covarying: age, educational attainment, and individual income

Variables included in the model	*OR (95% CI)*	*p*
Model 1: Stressors in Health Care (dichotomous)	**1.86 (1.74, 1.98)**	**<.001**
Model 2: Stressors in Health Care (continuous)	**1.22 (1.18, 1.26)**	**<.001**
Model 3: Stressors in Health Care (dichotomous) X Gender Identity		
Stressors in Health Care (main effect)	**1.56 (1.41, 1.74)**	**<.001**
Stressors in Health Care x Crossdresser	**0.36 (0.20, 0.65)**	**<.01**
Stressors in Health Care x Non-binary	0.96 (0.81, 1.15)	0.686
Stressors in Health Care x Transgender men	**1.20 (1.03, 1.40)**	**<.05**
Stressors in Health Care x Transgender women (comparison group)	-	-
Model 4: Age, Educational Attainment, Individual Income, Stressors in Health Care (dichotomous) X Race/Ethnicity		
Stressors in Health Care (main effect)	**1.80 (1.68, 1.94)**	**<.001**
Stressors in Health Care X Alaskan Native/American Indian	1.00 (0.55, 1.82)	1.00
Stressors in Health Care X Asian/Asian American	1.32 (0.86, 2.04)	.21
Stressors in Health Care X Black/African American	1.17 (0.81, 1.71)	.38
Stressors in Health Care X Latino/Hispanic	0.79 (0.61, 1.02)	.07
Stressors in Health Care X Multiracial	0.99 (0.74, 1.33)	.96
Stressors in Health Care X Native Hawaiian/Pacific Islander	1.12 (0.32, 3.94)	.86
Stressors in Health Care X Race/Ethnicity not listed	3.22 (0.91, 11.44)	.07
Stressors in Health Care X White (comparison)	-	-

All models covaried for age, education and income
Bolded items are statistically significant

Chapter 5

Conclusion & Implications

Understanding the underlying negative social attitudes (also termed societal stigma) towards GM people is important to understanding other sources of negative influence and structural barriers to health and well-being. However, measurement of societal stigma has been inconsistent in extant literature. In this dissertation, we evaluated potential measures of societal stigma and examined their relationship to minority stress experienced by GM people, health care discrimination, and subsequent health outcomes.

The three studies compiled in this dissertation address the need for an evaluation of currently available measures of societal stigma for their association with the experiences of stigma and symptom outcomes of GM people. Given the conflation of societal stigma with other forms of stigma, such as structural and interpersonal stigma (Hasenbush et al., 2014; White Hughto et al., 2015) and its role as a driver of these constructs, a deeper evaluation of available methods was needed. Further, health care mistreatment, a type of stigma exposure and stressor, has been widely described among GM people (Cicero et al., 2019; White & Fontenot, 2019), but the association between societal stigma and health care mistreatment has not been previously explored. Additionally, little is known about the association between health care related stressors and the mental and physical symptoms reported by GM people. In this dissertation we evaluate these relationships.

Summary of Research

The purpose of this dissertation was to assess the currently available measures of societal stigma in the exigent scientific literature among GM people and to examine its relationship to exposure to minority stress, stressors in health care, and the symptom experience of GM people.

Measures of Societal Stigma and Their Association to Components of Minority Stress Among Gender Minority People

The purpose of the first study is to examine currently available variables representing societal stigma to identify which was most strongly associated with components of the minority stress model (*i.e.,* experienced stigma, anticipated stigma, internalized stigma, and outness). We found two variables that were associated with two components of minority stress. We found that more protective State LGBT+ Business Climate Indices were associated with less experienced stigma and less anticipated stigma. Living in urban areas with populations >250,000 was associated with less anticipated stigma and more outness of their GM identities. Further research is needed to determine the relationship between societal stigma, structural stigma, interpersonal stigma, and individual stigma. Additionally, further work is needed to explore the association between societal stigma and the health outcomes and health care access of GM people.

Societal Stigma and Its Association with Stressors in Health Care Experienced by Gender Minority People

The purpose of this study was to determine the relationship between societal stigma and past-year health care mistreatment (*i.e.*, care refusal and/or lower quality care) in medical and mental health care settings, after controlling for demographic factors (*e.g*. age, income, education, race/ethnicity) in a sample of GM adults. We found 18.8% of our sample reported being denied or given lower quality medical care within the past-year, with the highest prevalence among gender expansive people and transgender men. Further, we found that 12.5% of our sample reported denial or lower quality of mental health care within the past-year, also reported most frequently among transgender men and gender expansive people. Higher rates of mental health care mistreatment among transgender men and gender expansive people could be due to increased effort to provide gender affirming care services in recent years, but these efforts have been focused on a predominantly binary construct of gender where care is directed toward transition to presentation as either man or woman (Lykens et al., 2018; Paine, 2018), which may not align with the needs of gender expansive individuals. We did not find a relationship among any variables representing social climate and the reports of denial or lower quality care in medical or mental health care settings among GM participants. The identified null finding could speak to a lack of a relationship between societal stigma and health care provision or due to the inadequacy of the available measures.

Stressors in Health Care and Their Association to Symptoms Experienced by Gender Minority People

The purpose of this study was to assess the relationship between stressors in health care and symptoms experienced by GM people (*i.e.,* emotional distress and impaired physical functioning). We also sought to determine whether there were differences in the relationship between stressors in health care and symptoms experienced based on gender identity, race, and ethnicity (*e.g*., whether non-binary participants have different symptom severity in association with experiencing stressors in health care when compared to other gender identity groups). We found that stressors in health care were associated with more symptoms of both emotional distress and physical impairment among GM people. Increased research on the characteristics of stressors in health care and how these are experienced among diverse gender and racial groups will increase the opportunity for the development of targeted interventions. The development of gender affirming, and culturally inclusive health care environments should be prioritized to improve the health care experiences of GM people, including GM people of color. Further, health care systems can employ a more inclusive workforce that reflects the communities they serve. Through a more informed and inclusive workforce, care of GM populations can be significantly improved, making strides toward reducing health disparities among GM people.

Contribution to Literature

This dissertation contributes to the knowledge on the complex constructs of stigma, its relationship with health care mistreatment, and the associated emotional and physical experiences of GM people. In contrast to prior work, this paper examined societal stigma as a theoretical, underlying driver of the more commonly measured constructs of structural, interpersonal, and individual stigma. This dissertation also grapples with the task of measuring societal stigma as there are no existing measures of this construct. Stigma is relevant to the health of numerous populations beyond just GM people, including people living with mental illness (Fox et al., 2018), HIV (Earnshaw & Chaudoir, 2009), and obesity (Puhl & Heuer, 2010) among other conditions and social positions. Therefore, the construct of societal stigma has utility among a broad range of populations within the health science literature.

The first study extracted previously employed measures of stigma that can be used as proxies for societal stigma and examined their association to the minority stress experiences in a national sample of GM people to identify a potential measure that best fit the experiences of GM people. This is important since many of our measures to understand stigma are based on self-report or perceptions of experiences (Hatzenbuehler, 2014; King et al., 2020). We then determined that the currently available measures of societal stigma were not associated with reported health care mistreatment. However, we did identify that 12.5% of GM people in our sample experienced mistreatment in mental health settings, a distinct experience in health care settings that has been broadly understudied. The literature surrounding health care mistreatment has focused primarily on primary care, outpatient care, inpatient medical settings, or with no specific delineation between medical and mental health care experiences (Cicero et al., 2019; Kcomt, 2019). The limited literature on mental health care experiences among GM people is limited to substance use treatment and outpatient settings, and vague descriptions of any previous mental health setting (White & Fontenot, 2019). This is important because GM people have been found to experience significant mental health burdens (Valentine & Shipherd, 2018), including disproportionate rates of suicide and suicidal ideation (Reisner et al., 2014; Thoma et al., 2019), depression (Witcomb et al., 2018), and anxiety (Bouman et al., 2017). While a distinct prevalence of mental health care mistreatment is established in this study, further work is needed to evaluate characteristics of inclusive mental health care environments and to better understand the unique experiences of GM people within more mental health care settings, such as inpatient mental health.

We also determined that there was an association between stressors experienced in health care and the emotional and physical symptoms among GM people. In this dissertation, we found that stressors in health care are associated with greater emotional and physical symptoms among transgender men when compared to transgender women. Further, literature on health care experiences among GM people and associated outcomes has focused on mental health and as a barrier to seeking health care services, whereas in this dissertation we build on this literature by finding a relationship with physical symptoms as well. This is most impactful in our analysis on

GM subgroups, where we found that transgender men who experienced stressors in health care had larger effect sizes for both symptoms of emotional distress and symptoms of impaired physical functioning when compared to transgender women. This study contributes to improved understanding of potential impacts on specific gender identity groups. While literature on the health care experiences of transgender men has emerged in recent years, it is still less prevalent than studies examining the experiences of transgender women, and it has predominantly focused on health care access (Harb et al., 2019; Jaffee et al., 2016; Sbragia & Vottero, 2020; Seelman et al., 2018).

Future Directions

Future work should develop a measure of societal stigma. Our findings illustrate that no single currently available measure is reflective of the minority stress experiences of GM people. However, the two measures that emerged as most promising encompass some important characteristics. The State LGBT+ Business Climate Index incorporated both policy and economic conditions in its determination of state scores (Out Leadership, 2019). This offers a more nuanced interpretation of what living conditions may be like for GM people in the state that they live compared to reliance on policy scores. Population density may be representative of access to resources and community for GM people. Future work should explore the relationship between societal stigma and experiences of minority stress among subpopulations and other GM identities, such as GM people of color. Intersections of economic status, race, sexual orientation, and gender identity, among other marginalized groups in society, are important considerations when evaluating the role of stigma broadly, and subsequently our analysis of societal stigma. Previous work, for example, found that among sexual minority men with HIV and who use stimulants, outness played a protective role in the risk of worse kynurenine/tryptophan ratios, a biomarker that helps indicate the progression of HIV, among White men, but this was not the case for sexual minority men of color (Vincent et al., 2021). Rates of discrimination and violence among GM people of color are also higher when compared to White peers and GM people of color are more likely to be living below the U.S. poverty line (James et al., 2016). These experiences are unique and should be explored to ensure that a measure of societal stigma is inclusive of these populations.

In our second paper, we found that current measures of societal stigma were not associated with the health care experiences of GM people. Future work should include research on the efforts to improve knowledge and cultural humility on the unique health care needs of GM people. Current work examining the relationship between trainings and staff knowledge and attitudes in health care settings has been largely focused on clinicians (Bristol et al., 2018; White Hughto et al., 2017; Wyckoff, 2019), while individuals in support roles (*e.g.,* lab technicians, dietary staff) are less frequently included in evaluating outcomes (Ding et al., 2020), yet they comprise part of the care team for GM people in health care settings. Further, little is known regarding the length of time that educational efforts are effective and whether they are equally effective among established clinicians who may have received dated training or hold stigmatizing beliefs. Deeper exploration into the nature of stressors experienced in health care settings, such as frequency and severity, would convey a more detailed picture of GM people's experiences. The predominant research on health care experiences has focused on transgender women, however we found that transgender men experienced a greater symptom burden when exposed to stressors in health care (Cicero et al., 2019; Melendez et al., 2006). Our findings also indicate a need for in-depth assessment of organizational and individual factors within health care systems that contribute to discrimination, abusive, or insensitive care for GM people. An examination of where and how transgender men and GM people of color may be subjected to insensitive and/or harmful care is needed. Efforts are needed to educate health care workers on gender affirming care that is inclusive of gender, racial, and cultural diversity. Nurses and physicians are often the sole focus of these efforts (Bristol et al., 2018; Noonan et al., 2018; Park & Safer, 2018; White Hughto et al., 2017), but other health care workers may warrant attention as well. Further, the recruitment of diverse health care teams (in terms of gender and race) that are representative of the communities they serve can build trust and a health care environment that is more affirming.

Implications for Nursing Practice

Stigma, a social determinant of health, is a well-documented driver of health disparities (Hatzenbuehler et al., 2013). This dissertation explores the fundamental constructs underlying stigma and provides an opportunity for exploration of the impact of societal stigma on health outcomes. We identified two variables, State LGBT+ Business Climate Index (Out Leadership, 2019) and population density, that may be proxies for societal stigma and are most closely associated with the minority stress experiences of GM people in our sample. These measures provide an opportunity to understand state and community level factors that may be driving structural and interpersonal stressors and stigma. Very few measures of stigma have been tested for validity and reliability among GM people (King et al., 2020). While this dissertation does not explicitly address those concerns, it does test criterion-related validity to examine feasibility and relevance for future work on examining the effects of stigma on the health of GM people.

Although societal stigma was not associated with reports of past-year health care mistreatment, we did find that stressors in health care settings were important in understanding the emotional and physical symptoms of GM people. This points to the considerable opportunities for improved health care education and cultural humility that may make a meaningful impact on the health and health care experiences of GM people. Affirming health care is critical to the health of GM people, but this requires knowledge about the unique needs of the diverse spectrum of GM identities. Particular attention is needed to examine the unique experiences among diverse gender identity groups and among GM people of color to address care inequities that may be driving these disparate outcomes.

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