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Measuring Sexual Violence Against Gender Minority Populations: A Systematic Review

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May 03, 2021

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Abstract Cover Page

Measuring Sexual Violence Against Gender Minority Populations: A Systematic Review

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An abstract of
A thesis submitted to the Faculty of the
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Abstract

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Measuring Sexual Violence Against Gender Minority Populations: A Systematic Review

By Savannah DeMil

Background: Gender minority individuals, or those who have a gender identity that differs from their sex assigned at birth, experience higher rates of sexual violence than their cisgender counterparts. However, surveys and other research tools are often not designed using language that is inclusive of gender minority experiences. There is a need for improved measurement tools to obtain more accurate data for these populations.

Objective: The objectives of this systematic review are to describe the range of current methodological approaches and challenges when measuring sexual violence against gender minority populations, and to identify best practice recommendations for measuring and researching gender minority populations.

Design: Systematic review

Methods: Articles were identified through systematic keyword searches of JAMA, JSTOR, PudMed, Taylor & Francis Online, and Wiley for articles published between 2000 – 2021. Titles and abstracts were screened and articles for potential inclusion underwent full-text review. Inclusion criteria included articles published in English; between 2000-2021; pertains to sexual violence research (or "campus climate") AND/OR provides best practices for researching gender minority populations; and includes gender minority populations AND/OR discusses SGM-inclusive language. Relevant articles were then analyzed for methodological quality and key themes.

Results: A total of 1,404 articles were identified, and 424 duplicates were removed. After screening the remaining 980 articles, 11 articles were included in this review. This review identified five key themes for researchers when designing surveys of sexual violence for gender minority populations: (1) survey/question validity for gender minority populations, (2) a two-step approach to measure gender, (3) gender-neutral language; (4) measurement tool development and pilot testing, and (5) involvement of gender minority individuals in research.

Conclusions: Sexual violence is a significant public health problem that disproportionately affects gender minority populations. It is evident that there is a need for better survey measures for researching sexual violence in gender minority populations to better capture their experiences and produce more accurate statistics. As the body of evidence on this topic grows, additional systematic reviews and qualitative research with gender minority individuals can expand on these conclusions and help further inform recommendations for research in this area.

Keywords:

sexual violence; transgender; gender non-conforming; gender minority; survey; measurement; LGBTQ

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Finally, I would like to extend my gratitude to LGBTQ+ people around the world, especially gender minority people and queer people of color, who have often faced persecution, discrimination, and abuse simply for being who they are. My hope is that sexual and gender minority public health research, as well as human rights for LGBTQ+ people, will continue to grow exponentially in the years ahead.

May 03, 2021

TABLE OF CONTENTS

GLOSSARY OF TERMS

Cisgender: Refers to individuals whose gender identity matches their sex assigned at birth[1]

Gender: Refers to the attitudes, feelings, and behaviors that a given culture associates with a person's biological sex. Behavior that is "compatible" with cultural expectations is referred to as gender-normative; behaviors that are viewed as "incompatible" with these expectations constitute gender non-conformity[2]

Gender expression: External appearance of one's gender identity, usually expressed through behavior, clothing, haircut, or voice, and which may or may not conform to socially defined behaviors and characteristics typically associated with being either masculine or feminine[3]

Gender identity: A person's deeply felt, self-conceptualization of being a boy or a man; a girl or a woman; or another gender (e.g., genderqueer, gender nonconforming, gender neutral) that may or may not correspond to that commonly associated with a person's sex assigned at birth or to a person's primary or secondary sex characteristics[2]

Gender minority: An "umbrella" term that refers to transgender and gender non-conforming people – people whose current gender identity or gender expression do not conform to social expectations based on their sex assigned at birth[1]

Gender non-binary: Individuals whose gender identity does not fully fall along the gender binary of being a girl/woman or boy/man. Other terms to describe this identity include genderqueer, agender, bigender, gender creative, etc.[4]

Gender non-conforming: A broad term referring to people who do not behave in a way that conforms to the traditional expectations of their gender, or whose gender expression does not fit neatly into a category[3]

Gender transition: This is a process in which a person begins to live according to their gender identity, rather than the gender they were thought to be at birth. Not all transgender people have transitioned or intend to do so, but many do. Gender transition looks different for every person. Possible steps in a gender transition may or may not include changing one's clothing, appearance, name and identity documents (for example, a driver's license), or undergoing medical procedures such as hormone therapy to change one's physical characteristics[5]

Genderqueer: Refers to a person whose gender identity falls outside of the gender binary (i.e. identifies with neither or both genders). Genderqueers may also use the term "gender fluid" as an

[1] GenIUSS, 2014
[2] APA, 2015
[3] HRC, 2021a
[4] CDC, 2019
[5] James et al., 2016

identifier but typically reject the term “transgender” because it implies a change from one gender category to another[2]

Intimate partner violence: Refers to behavior by an intimate partner or ex-partner that causes physical, sexual or psychological harm, including physical aggression, sexual coercion, psychological abuse and controlling behaviors[6]

LGBTQ: Acronym that refers to the lesbian, gay, bisexual, transgender, and queer/questioning community[4]

Sex: An individual’s biological status as male, female, or something else. Sex is assigned at birth and associated with physical attributes, such as anatomy and chromosomes[4]

Sex assigned at birth: The sex assigned to each person at time of birth or shortly thereafter usually based on external genitalia, also referred to as natal sex or biologic sex. This describes anatomic and/or physiologic characteristics[2,3]

Sexual minority: Individuals who identify as gay, lesbian, or bisexual, or who are attracted to or have sexual contact with people of the same gender[2,4,7]

Sexual orientation: An enduring pattern of emotional, romantic, and/or sexual attractions; a person’s sense of identity based on those attractions, related behaviors, and membership in a community of others who share those attractions.[8] Note: an individual’s sexual orientation is independent of their gender identity[3]

Sexual Violence: Refers to any sexual act, attempt to obtain a sexual act, or other act directed against a person’s sexuality using coercion, by any person regardless of their relationship to the victim, in any setting. It includes rape, defined as the physically forced or otherwise coerced penetration of the vulva or anus with a penis, other body part or object, attempted rape, unwanted sexual touching and other non-contact forms[6]

Transgender/trans: An umbrella term for people whose gender identity and/or expression is different from cultural expectations, or does not match their felt identity, based on the sex they were assigned at birth. This umbrella terms includes persons who do not feel they fit into a dichotomous sex structure through which they are identified as male or female. Individuals in this category may feel as if they are in the wrong gender, but this perception may not correlate with a desire for surgical or hormonal affirming treatments[2,3]

Violence against women: any act of gender-based violence that results in, or is likely to result in, physical, sexual, or mental harm or suffering to women, including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or in private life[6]

[6] WHO, 2021
[7] NIH, 2019
[8] APA, 2021

ACRONYM LIST

AFAB – Assigned Female at Birth
AMAB – Assigned Male at Birth
CDC – Centers for Disease Control and Prevention
GM – Gender Minority
IPV – Intimate Partner Violence
MIDSS – Measurement Instrument Database for the Social Sciences
NIH – National Institutes of Health
PRSPS-V – Post-Refusal Sexual Persistence Scale-Victimization
SES-SFV – Sexual Experiences Survey – Short Form Victimization
SGM – Sexual and Gender Minority
SM – Sexual Minority
SOGI – Sexual Orientation and Gender Identity
SV – Sexual Violence
TGNC – Transgender/Gender Non-Conforming
T-IPV – Transgender-related Intimated Partner Violence
UN – United Nations
WHO – World Health Organization

INTRODUCTION

Sexual violence is a significant public health and human rights problem. It is an issue that spans the globe and impacts all communities, yet there are some populations that are more heavily impacted than others. The UN Human Rights Council noted in a report from 2018 that "[v]iolence and discrimination against sexual and gender minorities are committed in all corners of the world, and victims are presumed to be in the millions, every year. These acts extend from daily exclusion and discrimination to the most heinous acts, including torture and arbitrary killings. At their root lie the intent to punish the non-conformity of victims with preconceived notions of what should be their sexual orientation or gender identity" (Madrigal-Borloz, 2018). Gender minority (GM) individuals, such as those who are transgender or gender non-conforming (GNC), experience disproportionately high rates of sexual violence compared to their cisgender counterparts. For example, in the 2015 *U.S. Transgender Survey Report*, the National Center for Transgender Equality found that 47% of transgender respondents report being sexually assaulted during their lifetime, and 10% report being sexually assaulted in the past year, both of which are much higher than the rates for their non-transgender counterparts (James et al., 2016).

Despite these disparities, surveys and other research tools often fail to capture – or even acknowledge – the experiences of gender minority individuals. Traditional survey language often assumes that all respondents are cisgender, or it uses language that is inaccurate for many gender minority individuals, and in some cases even triggering or gender dysphoria-inducing (Doan, 2016). Examples include language that assumes all respondents are either "men" or "women;" language that assumes respondents of a certain gender will have certain genitalia; and questions that describe sex and sexual violence scenarios in only a cisgender/heterosexual way. As a result, completing a survey on sexual violence experiences can be confusing, reductive, or unduly

distressing for some gender minority individuals, and thus survey results often inaccurately report the levels and types of sexual violence that gender minority populations experience (James et al., 2016).

The body of research on LGBTQ[9] individuals, and especially on gender minority individuals, has begun to expand. The expansion in research highlights a need for respectful survey language that accurately and comprehensively captures the sexual violence experiences of gender minority individuals. Thus, the research question for this systematic review is: how can surveys and measurement instruments of sexual violence be developed and/or adapted to be more inclusive of the terminology and representative of the experiences of gender minority populations?

BACKGROUND

Sexual Violence

In public health research, violence is a multifaceted construct with many definitions. The World Health Organization (WHO) defines violence as "the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, that either results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment, or deprivation" (Krug, Mercy, Dahlberg, & Zwi, 2002). In its violence framework, WHO also distinguishes between four modes through which violence may be inflicted: physical, sexual, psychological, and deprivation/neglect (see *Figure 1*).

[9] Scientific literature and wider United States culture vary in the terminology used to describe lesbian, gay, bisexual, transgender, and queer/questioning (LGBTQ) populations. This review will primarily refer to these populations as "sexual and gender minority populations," or "SGM" populations.

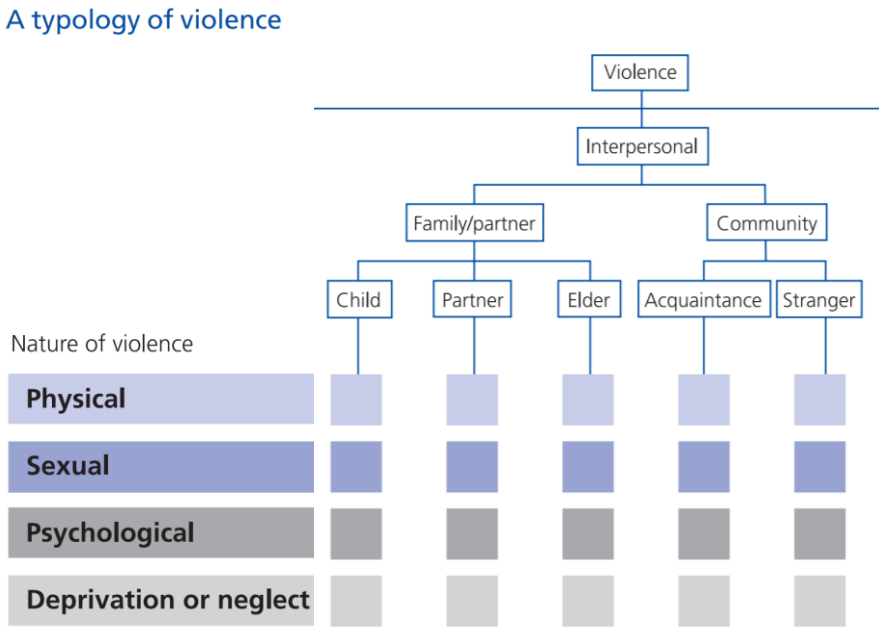


Figure 1: A typology of interpersonal violence, as defined by the World Health Organization. In addition to interpersonal, the other categories of violence that are not pictured here are self-directed and collective (Krug et al., 2002)

This systematic review is focused on survey language around sexual violence experiences, so there will be a focus on the sexual violence component of violence. "Sexual violence" has many definitions, some of which might not fully capture GM experiences. The Centers for Disease Control and Prevention (CDC) states that sexual violence refers to sexual activity when consent is not obtained or not given freely (CDC, 2021). Sexual violence can involve a range of acts including attempted or completed forced or alcohol/drug facilitated penetration (i.e., rape), being made to penetrate someone else, verbal (non-physical) pressure that results in unwanted penetration (i.e., sexual coercion), unwanted sexual contact (e.g., fondling), and non-contact unwanted sexual experiences (e.g., verbal harassment, voyeurism) (Basile et al., 2016). Another, more general definition of sexual violence from the Rape, Abuse & Incest National Network (RAINN) explains that sexual violence is an all-encompassing, non-legal term that refers to

crimes like sexual assault, rape, and sexual abuse (RAINN, 2021). A third definition of rape is provided by the FBI: “Penetration, no matter how slight, of the vagina or anus with any body part or object, or oral penetration by a sex organ of another person, without the consent of the victim” (FBI, 2012). It should also be noted that the legal definitions for terms like rape, sexual assault, and sexual abuse, as well as parameters for someone’s ability or inability to consent to sex, vary from state to state (FBI, 2012). By not having standardized definitions across states, it can be difficult to properly measure sexual violence or to develop standardized initiatives and interventions. While rape is one serious form of sexual violence, all forms of sexual violence should be acknowledged and accurately measured, especially in disproportionately affected populations like gender minority people.

Gender Minority Populations

The definition of sexual and gender minority (SGM) populations used for this review is based on the definition used by the National Institutes of Health (NIH) Sexual and Gender Minority Research Office. Sexual and gender minority populations, in the most basic sense, refers to those “whose sexual orientation, gender identity, or reproductive development varies from traditional, societal, cultural, or physiological norms” (NIH, 2019). Further, “SGM populations include, but are not limited to, individuals who identify as lesbian, gay, bisexual, asexual, transgender, Two-Spirit, queer, and/or intersex. Individuals with same-sex or -gender attractions or behaviors and those with a difference in sex development are also included. These populations also encompass those who do not self-identify with one of these terms but whose sexual orientation, gender identity or expression, or reproductive development is characterized by non-binary constructs of sexual orientation, gender, and/or sex” (NIH, 2019). Therefore, sexual minority populations include, but are not limited to, individuals who identify as lesbian, gay, bisexual, asexual,

pansexual, and/or queer, as well as individuals with same-sex or same-gender attractions or behaviors (NIH, 2019). Sexual orientations can be thought of as being comprised of three main dimensions: (1) sexual identity, which can be defined as the way someone identifies with a given sexual orientation, (2) sexual attraction, which can refer to the sex or gender to which someone feels attraction, and (3) sexual behavior, which can refer to the sex of a person's sexual partners (NIH, 2016). Gender minority populations include, but are not limited to, anyone who is transgender, nonbinary, genderfluid, genderqueer, Two-Spirit, or whose gender identity otherwise differs from their sex assigned at birth (NIH, 2019). Gender identity is an individual's self-identified sense of gender, and gender expression is an individual's external manifestation of gender (NIH, 2016). Public health research often combines sexual minority and gender minority populations into one sexual and gender minority research population, but this review will focus primarily on the needs and experiences of gender minority populations. Further, some gender minority research definitions are narrow, such as only including participants that identify as transgender. This review will use a broad definition of gender minority populations that is inclusive of all non-cisgender individuals.

Disparities Faced by Gender Minority People

Gender minority individuals experience many health and violence disparities. For example, according to the 2015 U.S. Transgender Survey from the National Center for Transgender Equality, 46% of transgender people report being verbally harassed and 9% report being physically attacked because of being transgender in the previous year (James et al., 2016). Additionally, one-third (33%) of those who saw a health care provider in the past year reported having at least one negative experience related to being transgender while accessing health services (James et al., 2016). Gender minority individuals also report being verbally harassed

(12%), physically attacked (1%), or sexually assaulted (1%) when accessing restrooms (James et al., 2016). Additionally, 40% of transgender people have attempted suicide in their lifetime, nearly nine times the rate in the U.S. population (James et al., 2016). Within schools, 77% of those who were out or perceived as transgender at some point between kindergarten and twelfth grade experienced some form of mistreatment, such as being verbally harassed, prohibited from dressing according to their gender identity, disciplined more harshly, or physically or sexually assaulted because people thought they were transgender (James et al., 2016). Further, adolescents and young adults aged 12-34 are in the highest risk years for rape and sexual assault (Greenfeld, 1997). Among college students, 21% of transgender and other gender minority college students report having been sexually assaulted, a disproportionately high rate compared to 18% of cisgender women students and 4% of cisgender men students (Cantor et al., 2015). It is clear from these statistics that sexual violence can occur in an array of contexts and take several different forms. Understanding the intersectionality of sexual violence in gender minority populations is a key first step to conducting research in this area, and this understanding can allow for more comprehensive and relevant data collection.

Sexual Violence Research Methodologies

There are several national and global surveys that strive to capture sexual violence. One example is *The National Intimate Partner and Sexual Violence Survey (NISVS)*, developed and conducted by the CDC. The NISVS is an ongoing survey that collects current and comprehensive national- and state-level data on intimate partner violence, sexual violence, and stalking victimization in the United States (CDC, 2020). It is the first survey to regularly monitor sexual violence, stalking, and intimate partner violence in a public health context; report on lifetime and 12-month experiences of sexual violence, stalking, and intimate partner violence at the national and

state-level; and examine associated health impacts and age of first victimization of sexual violence, stalking, and intimate partner violence. While the NISVS includes some sexual and gender minority-related questions in the survey itself, there are no questions asked in the survey screener related to sexual identity, sexual behavior, or household relationships. Additionally, there are no questions in the survey itself about sexual attraction or gender identity. Additionally, there are several questions where the wording could be improved to be more representative of a wider audience, including sexual and gender minority individuals. Another example is the *Sexual Experiences Survey – Short Form Victimization* (SES-SFV), a tool from the Measurement Instrument Database for the Social Sciences (MIDSS), which is a repository for instruments that are used to collect social sciences data (Canan, Jozkowski, Wiersma-Mosley, Blunt-Vinti, & Bradley, 2020). Its purpose is to serve as a condensed version of the *SES Long Form Victimization* in assessing victimization of unwanted sexual experiences. Specifically, the SES-SFV aims to estimate the frequency of each type of unwanted sex act and/or the rate of each tactic to compel unwanted sex (Canan et al., 2020). It further yields scores to report prevalence of sexual victimization by using categories: non-victim, sexual contact, attempted coercion, coercion, attempted rape, and rape (Canan et al., 2020). While the SES-SFV tool is useful in assessing victimization of unwanted sexual experiences and understanding estimates and rates of unwanted sex, some questions could be modified to reflect the experiences of sexual and gender minority populations more accurately. An example of a multi-country survey is the *Violence against women: an EU-wide survey*. This survey is the first to measure violence against women across the 28 Member States of the European Union (EU). It is based on interviews with 42,000 women across the EU, who were asked about their experiences of physical, sexual, and psychological violence, including incidents of intimate partner violence (domestic violence)

(RIGHTS, 2014). This survey also included questions on stalking, sexual harassment, the role played by new technologies in women's experiences of abuse, and experiences of violence in childhood (RIGHTS, 2014). Based on the findings from this survey, the European Union Agency for Fundamental Rights (FRA) suggests several recommendations to address the levels of violence reported, including recommendations in the employment, health, and technology sectors (RIGHTS, 2014). Because this survey has a wide reach and already includes some inclusive language, such as "partner" rather than husband/wife, adapting this survey to include additional sexual and gender minority-inclusive language would be an opportunity to better capture the experiences of a large number of sexual and gender minority people from 28 EU countries.

Sexual Violence Research on Sexual and Gender Minority Populations

There are some widely agreed-upon guidelines in the scientific literature for measuring sexual violence in sexual and gender minority populations. For example, a consistent recommendation is that language used in sexual violence survey tools can be more inclusive of gender minority populations if it refers to any gender of victim or perpetrator and recognize that there can be other sexual violence situations besides penile/vaginal rape (FBI, 2012). The body of literature on measuring sexual violence against sexual and gender minority populations is relatively sparse, although it has grown substantially in recent years. It is even more uncommon to find literature that address sexual violence against gender minority populations specifically, separate from sexual minority populations. Both sexual and gender minority populations experience higher rates of sexual violence than their heterosexual, cisgender counterparts (Beyer, Toumayan, & Hipp, 2020; Flores, Langton, Meyer, & Romero, 2020; HRC, 2021b). While some of the sexual violence experiences of sexual minority and gender minority people might be similar, it is crucial to develop better survey tools to understand more accurately what each of these populations

experience separately from one another, as this can help develop stronger intervention strategies that target each of these specific populations. In addition to informing intervention strategies, improving surveys and measurement tools for gender minority populations can help create more accurate incidence and prevalence rates for populations who may be underrepresented and/or underreported.

OBJECTIVE

The first objective of this systematic review is to describe the range of current methodological approaches and challenges when measuring sexual violence against gender minority populations. The second objective of this systematic review is to identify best practice recommendations for measuring and researching gender minority populations. This review will summarize which measurement approaches work well, how to better measure violence against gender minority populations, and recommendations for conducting quality research on gender minority populations to inform future public health research.

METHODS

A systematic review was conducted by one public health researcher, following the PRISMA systematic review guidelines and checklists (Moher, Liberati, Tetzlaff, & Altman, 2009). Electronic searches of the following five databases were conducted in February through April of 2021: JAMA, JSTOR, PudMed, Taylor & Francis Online, and Wiley.

Searches of these databases were conducted using combinations of search terms (see *Figure 2*). Search terms were selected to capture three domains: gender minority population, sexual violence act, and measurement tool.

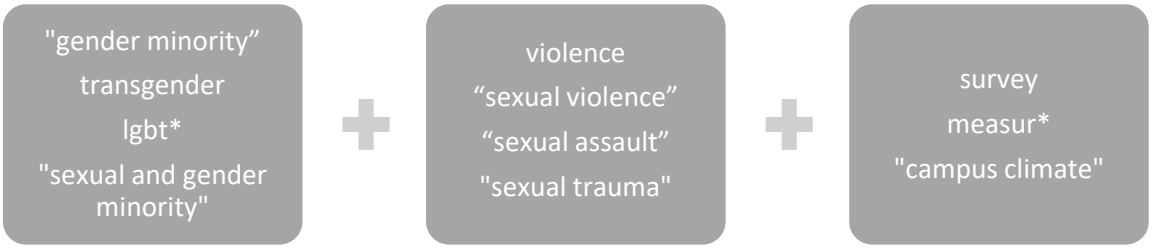


Figure 2: Search terms used in database search

Search results were imported into Covidence systematic review software (Covidence, 2021). Titles and abstracts of search results were screened for relevance by one researcher working independently using the following inclusion criteria:

1. Published in English
2. Published between 2000 to 2021
3. Pertains to sexual violence research (or "campus climate") AND/OR provides best practices for researching gender minority populations
4. Includes gender minority populations AND/OR discusses SGM-inclusive language

Titles and abstracts that met these inclusion criteria then went through full-text review to confirm inclusion in the final sample, again by one researcher working independently. All included articles were required to meet all four inclusion criteria, though articles could be included if they met only one of the two AND/OR phrases within the third and fourth inclusion criteria. Articles that were included in the final sample were assessed for quality and then synthesized for key themes using the methods below.

To assess article quality, Critical Appraisal Skills Programme (CASP) checklists, which are common, relatively rigorous tools for assessing the quality of research articles, studies, and reviews, were used (CASP, 2021). Each article was assessed based on ten parameters, which

could be rated either a “yes,” “maybe,” or “no.” Level of bias factored into these ratings. For the articles that utilized qualitative research and systematic review methodologies, the CASP checklist for qualitative research and systematic reviews, respectively, were used without modifications. For the articles that did not fall under one of the prespecified CASP checklist categories, a modified version of the checklist that was closest to the articles’ methodologies was developed to assess quality in a similar way while maintaining a high level of rigor. Additionally, because there can be disadvantages to quantifying data quality, this assessment did not quantify these checklists, but rather, assigned a label of “excellent,” “good,” “fair,” and “poor.” This label was assigned by assessing how many parameters of the CASP checklist were met. If the article met all of the parameters in the CASP checklist, it was given a label of “excellent,” even if there were some inherent limitations that were not addressed in the checklist. If the article met most of the parameters, and had some limitations, then it was deemed “good.” If the article met only a few of the parameters, and had several significant limitations, it was given a label of “fair.” Lastly, if the article met one or none of the parameters, and had many significant limitations, it was rated “poor” quality.

After rating the quality of each article, the article findings were itemized and synthesized. Synthesis was completed by identifying the key recommendations and findings from each article and then comparing them to the key recommendations and findings from the other articles, identifying commonalities between the articles, and grouping the emerging themes together. Only findings relevant to gender minority populations were considered.

RESULTS

The search strategy yielded 1,404 results, of which 424 duplicates were removed. Title and abstract review of these 980 articles excluded all but 11, which then underwent full-text review. All 11 of these articles were determined to be relevant and were included in the final sample (see *Figure 3*). A relatively large proportion of articles were excluded during title and abstract review, likely due to a combination of the broad search terms and narrow inclusion criteria used in this review, as well as the relatively limited amount of published research on this topic area.

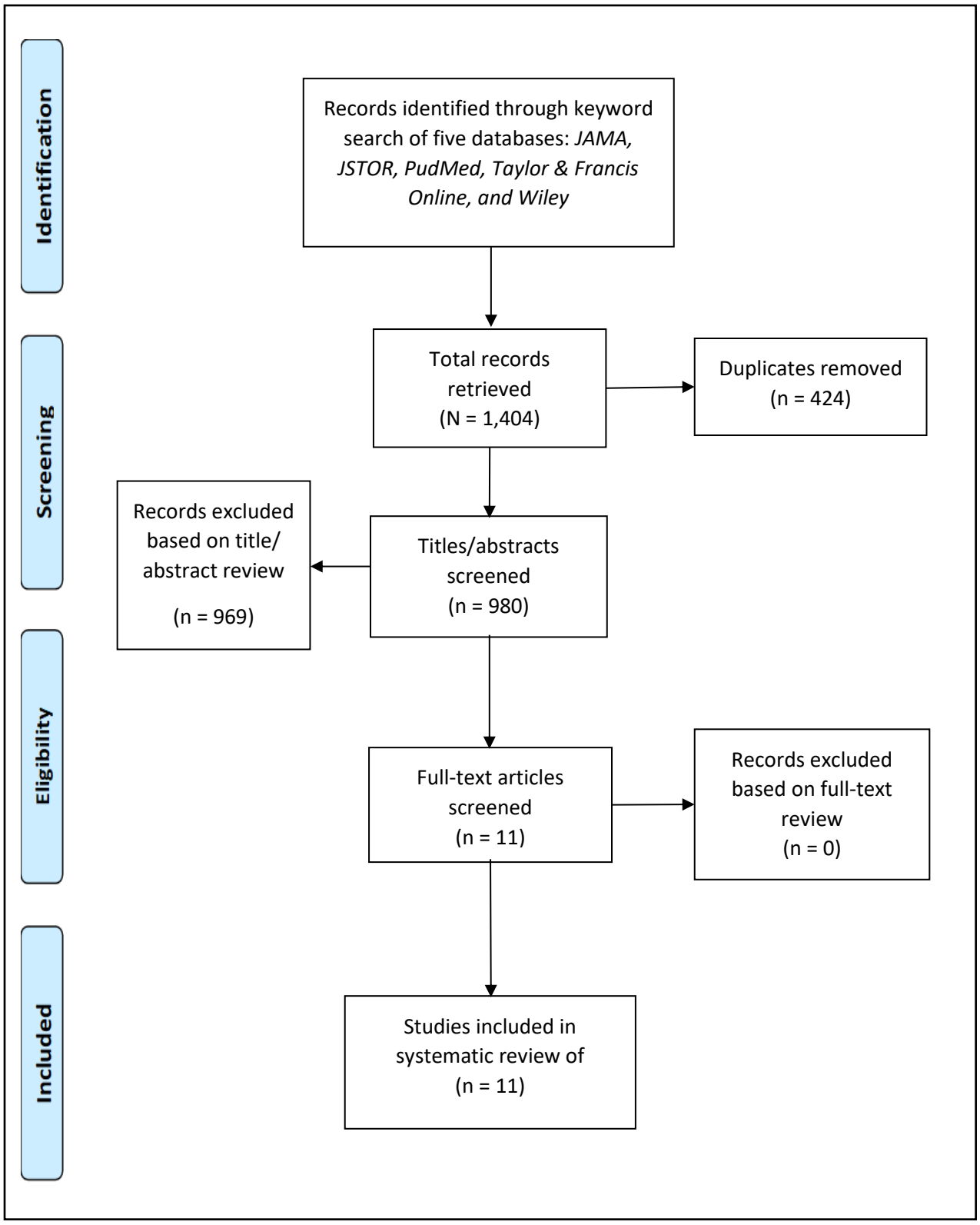


FIGURE 3: Consort diagram of the study selection process. Adapted from the PRISMA Statement flow diagram template (Moher et al., 2009)

Sample Characteristics

Tables 1a and *1b* summarize the characteristics, quality, and key findings of the 11 articles included in this review. Publication years for the sample ranged from 2007 to 2020. These articles included national and global standards for measuring sexual and gender minority populations, examples of research and survey development for sexual and gender minority populations generally, and a small number of articles specific to survey development for gender minority populations. There was 1 article from 2007, 1 article from 2014, 1 article from 2016, 2 from 2017, 2 from 2019, and 4 from 2020. There were 2 articles that utilized quantitative research methodologies, 2 articles that used a quasi meta-analysis approach, an article that used qualitative research methods, an article that drew upon mixed research methods, a systematic review, an article that utilized a queer theory approach, an article that analyzed and assessed a revised form of the SES, a research guidelines report, and a report from an expert meeting. The three sexual violence survey instruments identified from the articles in this review are summarized in *Figure 4*.

TABLE 1a: Characteristics of articles included in this review

Authors & Year	Title	Study Population	Sample Size & Sampling Strategy	Study Design	SV Instrument Used
Anderson & Delahanty, 2020	Discrepant Responding across Measures of College Students' Sexual Victimization Experiences: Conceptual Replication and Extension	College students; women, men, and gender minorities	N = 673 - Women (n =367) - Men (n = 298) - Gender minorities (n = 8) Students were recruited online for a study advertised as "Questionnaires about Sexual Behavior"	Quantitative analysis of discrepant responding; Sexual Experiences Survey-Short Form Victimization (SES-SFV) and Post-Refusal Sexual Persistence Scale-Victimization (PRSPS-V)	SES-SFV, PRSPS-V

Brown & Herman, 2020	Exploring International Priorities and Best Practices for the Collection of Data about Gender Minorities: A focus on South America	Gender minorities	Meeting participants were invited from 12 countries	Expert meeting to assess the development of best practices for the collection of data on gender minorities in South America	
Canan et al., 2020	Validation of the sexual experience survey-short form revised using lesbian, bisexual, and heterosexual, women's narratives of sexual violence	Sexual minority women and heterosexual women	N = 1382 -31% lesbian -32% bisexual -31% heterosexual Survey respondents were recruited online.	Explanatory sequential mixed-methods: pilot testing a modified form of the SES-SFV	SES-SFV
Clark, Rosenthal, & Boehmer, 2014	Surveying sexual and gender minorities	Sexual and gender minorities	N/A	Guide for researchers	N/A
de Heer & Jones, 2017	Measuring Sexual Violence on Campus: Climate Surveys and Vulnerable Groups	College students, with a focus on sexual and gender minority and Native American students	N/A	Quasi meta-analysis approach: to study the use of campus climate surveys and sexual assault-specific surveys to measure sexual violence among vulnerable groups on college campuses	Campus climate surveys; Sexual assault specific surveys
Doan, 2016	To Count or Not to Count: Queering Measurement and the Transgender Community	Gender minorities; transgender individuals	N/A	Queer theory approach	N/A
Dyar et al., 2019	Development and initial validation of three culturally sensitive measures of intimate partner violence for sexual and gender minority populations	Sexual and gender minorities	N = 352 Participants were drawn from an existing cohort of SGM-AFAB individuals, recruited via an incentivized snowball sampling approach	Quasi meta-analysis approach: developed a toolkit of new and adapted measures of IPV for use with SGM assigned female at birth (SGM-AFAB) populations	IPV Toolkit
Koss et al., 2007	Revising the SES: A collaborative process to improve	Respondents to the Sexual Experiences Survey (SES); researchers	N/A	Analyzed and revised the Sexual Experiences Survey (SES)	SES

	assessment of sexual aggression and victimization	who use the SES			
Patterson, Jabson, & Bowen, 2017	Measuring sexual and gender minority populations in health surveillance	Sexual and gender minorities	N/A	Systematic review	N/A
Peitzmeier et al., 2019	Development of a Novel Tool to Assess Intimate Partner Violence Against Transgender Individuals	Transgender individuals	N = 150 Recruited female-to-male, transmasculine individuals from a study of cervical cancer screening in Boston	Quantitative analysis of transgender-related IPV (T-IPV) assessment tool	T-IPV assessment tool
Suen et al., 2020	What sexual and gender minority people want researchers to know about sexual orientation and gender identity questions: A qualitative study	Sexual and gender minorities	N = 74 - Nine focus groups (n = 55) - Cognitive interviews (n = 19)	Qualitative study: Focus groups and cognitive interviews	N/A

TABLE 1b: Quality, key findings, and recommendations of articles included in this review

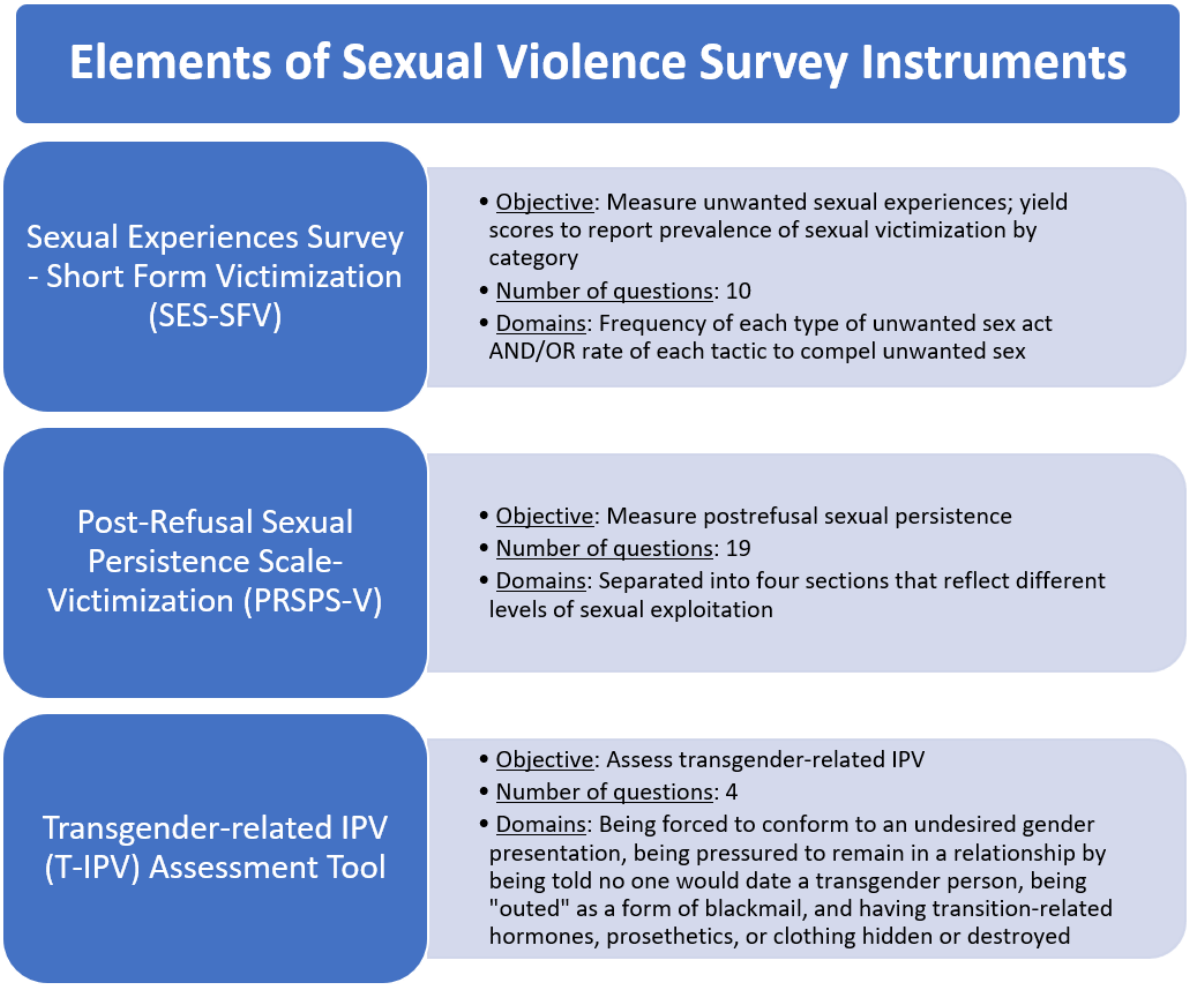
Author(s) & Year	Article Title	Article Quality (CASP Analysis)	Methodological Strengths & Limitations	Key Findings & Recommendations
Anderson & Delahanty, 2020	Discrepant Responding across Measures of College Students' Sexual Victimization Experiences: Conceptual Replication and Extension	Good	Strengths - Compares two sexual victimization measurement tools - Clear statement of aims - Appropriate quantitative methods Limitations - Recruitment strategy yields small number of gender minority individuals	- Of the 8 gender minority respondents (of the N=673 total respondents), 100% reported at least one incident of sexual victimization of any type - Despite a relatively small number of gender minority respondents, discusses how this corroborates other findings on rates of gender minority sexual violence victimization
Brown & Herman, 2020	Exploring International Priorities and Best Practices for the Collection of Data about Gender Minorities: A focus on South America	Excellent	Strengths - Meeting had a clear focus - Attendees were experts and gender minority individuals from several countries - Overall conclusions and recommendations are clearly expressed Limitations - None identified	- There was consensus among participants that quality data about gender minorities is important in South America - Data collection should reflect findings from empirical research and local context/needs - Described a two-step approach to sex and gender measurement: o Calls for two separate measures, one for the sex assigned at birth and another for the individual's current gender identity o Analysts can cross-reference these measures to identify both those who identify with a particular gender minority label and those whose gender identity is different from their sex assigned at birth - Gender minority communities should always be engaged in the development of research and data collection about those communities o There should be appropriate recognition and compensation for all involved in research about those communities
Canan et al., 2020	Validation of the sexual experience survey-short form revised	Excellent	Strengths - Clear statement of aims	- Found that survey validity could be improved with more inclusive language around anatomy (e.g., not all women will have vaginas)

	using lesbian, bisexual, and heterosexual, women's narratives of sexual violence		- Appropriate recruitment and data collection strategies Limitations - None identified	- Provided qualitative examples of scenarios when trans women experienced sexual violence, and described how traditional survey questions would not accurately capture these acts - Found that the SES-SFV satisfactorily assesses sexual assault and rape experiences in lesbian, bisexual, and heterosexual women, but did not have adequate sample size to report validity for transgender or other gender minority individuals
Clark, Rosenthal, & Boehmer, 2014	Surveying sexual and gender minorities	Excellent	Strengths - Clear statement of aims - Authors used important, relevant data sources - Precise results and recommendations are expressed Limitations - None identified	- Provides definitions of sexual orientation and gender identity - Describes challenges in the measurement of SGM status - Presents examples of questions for measuring SGM identity - Summarizes probability and nonprobability sampling methods that have been used for sampling and recruiting SGM individuals - Summarizes data-collection methods that have been used in SGM research
de Heer & Jones, 2017	Measuring Sexual Violence on Campus: Climate Surveys and Vulnerable Groups	Good	Strengths - Includes high-quality data sources and studies - The conclusions draw from the results of the included studies Limitations - More emphasis on sexual minority, rather than gender minority, students	- Three specific measurement issues were identified o It is important to have a specifically designed survey to study sexual assault victimization o Inconsistent wording across surveys that seek to measure the same thing o It is critically important to be attentive to the wording of behavioral indicators of sexual assault, particularly when working toward promising methodologies for vulnerable populations - Examples of gender-inclusive language are provided
Doan, 2016	To Count or Not to Count: Queering Measurement and the Transgender Community	Excellent	Strengths - Discussion has clear focus - Author includes quality data sources Limitations - None identified	- Many counts significantly underestimate the number of "gender variant and nonnormative people" - Some queer scholars call for research to avoid quantitative assessments of gender diversity because they constrain the complexity of gender into a narrow box

				- However, there are instances where accurately counting the number of GM individuals can be essential – such as for allocating public funds for all-gender bathrooms and gender affirming surgeries - Suggests using a more broad definition of the transgender community to include groups such as gender-flux and gender-nonconforming individuals - Understand the fluidity of gender and identity categories for some individuals, and that some individuals will not be comfortable with certain labels
Dyar et al., 2019	Development and initial validation of three culturally sensitive measures of intimate partner violence for sexual and gender minority populations	Good	<u>Strengths</u> - Clear statement of aims and findings - Rigorous data analysis <u>Limitations</u> - Additional discussion of ethical considerations and participant relationships needed	- There is initial evidence of internal reliability and factorial validity of each measure - The three measures comprise a culturally appropriate and psychometrically validated measurement toolkit for studying a broad range of IPV tactics among SGM-AFAB that will help build a foundation for more in-depth research into IPV in SGM populations
Koss et al., 2007	Revising the SES: A collaborative process to improve assessment of sexual aggression and victimization	Excellent	<u>Strengths</u> - Clear statement of aims - The authors include quality data sources - Overall results clearly expressed <u>Limitations</u> - Potential for author bias	- Recommendations from a collaborative of 9 researchers who have used the SES extensively - Recommends that researchers be involved in a coordinated agenda to develop data that clarify methodological questions and contribute to continued improvement in assessing sexual victimization and perpetration - Identified several challenges with implications for gender minority individuals, including language, gender neutrality, cueing disclosure, item format, reliability, and validity, that could inform future revisions in the SES and improve measurement of unwanted sexual experiences in general
Patterson, Jabson, & Bowen, 2017	Measuring sexual and gender minority populations in health surveillance	Excellent	<u>Strengths</u> - Clear statement of aims - The authors include quality data sources - Overall conclusions clearly expressed	- Provides a detailed summary of health surveillance data sources that can be used to inform research about health risks and disparities among SGM populations

			Limitations - None identified	
Peitzmeier et al., 2019	Development of a Novel Tool to Assess Intimate Partner Violence Against Transgender Individuals	Good	Strengths - Clear statement of aims - Appropriate quantitative methods and data analysis Limitations - Recruitment strategy might have resulted in a sample that is not truly representative	- The T-IPV assessment tool showed adequate reliability and validity in measuring intimate partner violence against transgender individuals - Incorporation of T-IPV screening into general IPV screening is particularly critical for service providers - T-IPV is associated with physical and sexual IPV but is its own distinct experience, as the latter fails to assess for T-IPV specifically may underestimate IPV prevalence in research or result in a false negative IPV screen in clinical use
Suen et al., 2020	What sexual and gender minority people want researchers to know about sexual orientation and gender identity questions: A qualitative study	Excellent	Strengths - Appropriate qualitative methods - Involvement of SGM individuals throughout research process - Clear statement of findings Limitations - None identified	- For sexual orientation and gender identity questions, allow multiple answers with the prompt “select all that apply” in question stems - Include a write-in option to acknowledge SOGI fluidity and complexity - Apply a clear question stem (e.g., “What is your gender identity?”) to all SGM and non-SGM research participants to avoid stigmatization, to ensure accurate characterization of participants, and to normalize its use in all surveys - Use the two-step gender identity method (i.e., one question for internal gender identity, one question for sex assigned at birth) to accurately identify gender minority people

Figure 4: Summary of sexual violence survey instruments identified from articles in this review



Thematic Analysis

The results and implications of each article were considered and then compared across the other articles. Five key themes were developed. Each theme is described in detail below.

Key Theme 1: Survey/question validity for gender minority populations

One of the most common findings across the articles was the importance of determining survey and/or question validity for gender minority populations. Establishing question validity – that is, the degree to which the question measures what it is supposed to measure – is best practice for survey development generally, but it becomes even more critical when a survey is trying to capture the experiences of traditionally undercounted populations such as gender minority individuals. This theme was found in seven of the articles, suggesting that establishing survey validity is critical across the field of gender minority sexual violence research.

Four of those seven articles described the process of establishing validity for specific survey instruments (Anderson & Delahanty, 2020; Canan et al., 2020; Dyar et al., 2019; Peitzmeier, Hughto, Potter, Deutsch, & Reisner, 2019). First, Anderson & Delahanty looked at validity in both the Post-Refusal Sexual Persistence Scales (PRSPS-V) and the SES-SFV, both of which are summarized in *Figure 4*. They found that there is a "lack of precision in sexual victimization estimates, even when administering commonly-used questionnaires with evidence of validity" (Anderson & Delahanty, 2020). Further, they recommended that future sexual violence measurements focus on how differences in questionnaire structure, item structure, and the operationalization of consent impact prevalence rates and validity (Anderson & Delahanty, 2020). The article also recommended that construct validity research use interview techniques, where participants complete both the questionnaire version and follow-up interviews about their experiences (Anderson & Delahanty, 2020). Anderson & Delahanty also describe how many

sexual victimization questionnaires were initially developed and validated with (mostly cisgender) women, but later adapted for other genders (Anderson & Delahanty, 2020). They describe how later iterations of validation reduced heteronormativity and improved inclusion.

Next, Dyar et al. developed and validated three culturally sensitive measures of intimate partner violence for sexual and gender minorities. They noted that most existing measures of IPV were designed and validated based on cisgender, heterosexual samples, and described how their study modified constructs linked with IPV in heterosexual/cisgender samples, or created new constructs entirely, to guide the validation of their sexual and gender minority measures. Like other articles in this review, Dyar et al. note that invalidating or unclear survey questions can weaken validity, leading to inaccurate reporting in sexual and gender minority samples (Dyar et al., 2019).

Similarly, Canan et al. described how the most common tool for measuring the prevalence of sexual assault and rape, the Sexual Experience Survey-Short Form Revised (SES-SFV), has not been validated in lesbian and bisexual women. They describe their process for establishing validity in this population by quantitatively comparing responses to two sexual violence surveys. They also analyzed qualitative data on respondents' reactions to survey questions (Canan et al., 2020).

Finally, Peitzmeier et al. developed a tool to assess intimate partner violence against transgender individuals, and they described in detail their methods for establishing question validity (Peitzmeier et al., 2019). Construct validity was assessed by examining correlations between the tool they developed, the T-IPV (see *Figure 4*), and two existing, validated intimate partner violence screeners. Additionally, they established face validity by having a community task force

which included six gender minority individuals review the questions to make sure that the language was gender-affirming and culturally competent (Peitzmeier et al., 2019).

In addition to studies that established validity for particular survey tools, three articles included in this review provided general best practices around establishing validity (Clark, Rosenthal, & Boehmer, 2014; de Heer & Jones, 2017; Doan, 2016). Clark, Rosenthal, & Boehmer, in their chapter on surveying sexual and gender minorities, describe how sampling methods can affect both internal and external validity when surveying this population. For example, respondent-driven sampling can have more external validity than other non-probability sampling methods, because it is not limited to those who have access to a particular venue, such as a health clinic or LGBTQ center (Clark et al., 2014). Relatedly, de Heer & Jones conducted a quasi meta-analysis to assess best practices for measuring sexual violence in campus climate surveys, with an emphasis on sexual and gender minority and Native American populations. Their results suggest that universities should only use sexual assault-specific instruments that have been empirically validated, including validation with populations of interest such as gender minorities. They conclude that checking questions for inclusivity is part of the validation process (de Heer & Jones, 2017). Finally, from a more theoretical perspective, Doan used a queer theory approach to describe how traditional survey questions often fail to accurately count gender minority individuals (Doan, 2016). In particular, Doan described the pitfalls of using narrow language and "checking a box"-style questions to measure diverse groups. For example, asking a survey respondent to report whether they are transgender with a 'yes' or 'no' will likely leave out individuals who hold gender minority identities, but do not necessarily identify with the term "transgender," which limits validity (Doan, 2016).

Overall, these articles discussed the importance of establishing survey validity through subject matter expert review, pilot testing with gender minority individuals, and correlating an instrument's scores with an external criterion, such as another established sexual violence measure from a different instrument.

Key Theme 2: Utilizing a two-step approach to measuring gender

Across three articles, there was use of a two-step approach to measuring gender. The two-step approach, also called the two-step gender identity method or the twofold approach, is a method that is used to measure (1) sex assigned at birth followed by (2) current gender identity. This approach is used "in order to identify those whose gender identity is different from their sex assigned at birth" (Brown & Herman, 2020). Further, using two questions "differentiates cisgender individuals from individuals who may identify differently from their sex assigned at birth but do not adopt the 'transgender' label" (Suen et al., 2020). This two-step method is "more sensitive in identifying gender minorities than a single question approach and has reliable comprehension and acceptability among non-sexual and gender minority and sexual and gender minority populations (Suen et al., 2020).

The two-step approach has been utilized in several countries, including the United States, Canada, and Brazil. There were several examples of this method being used in the U.S., including the California Health Interview Survey (CHIS), which is the only representative state survey in the U.S. to include a two-step approach to identifying transgender individuals (Brown & Herman, 2020). Additionally, in April of 2018, Canada "adopted new definitions and standards for the collection of data on sex and gender, including a two-step measure to identify gender minorities" (Brown & Herman, 2020). Beyond North America, this approach was also utilized in Brazil to collect gender identity data within the study entitled *The Impact of the*

Parental Support on Risk Factors in the Process of Gender Affirmation of Transgender and Gender Diverse People (Brown & Herman, 2020), indicating that the two-step approach is being increasingly utilized in various regions of the world.

The Williams Institute Gender Identity in U.S. Surveillance (GenIUSS) group also recommends the two-step approach. However, they define the two-step approach as measuring self-reported assigned sex at birth (sex recorded on the original birth certificate) followed by current gender identity at time of survey (GenIUSS, 2014). While the GenIUSS recommendations were developed in English by United States-based researchers, many researchers consider them to be the best available published guidelines for sexual and gender minority measurement both in the United States and globally (GenIUSS, 2014).

Key Theme 3: Gender-neutral language

Across three articles there was discussion of and recommendations for more gender inclusive and gender-neutral language within research. In one article, researchers were interested in exploring a revised version of the SES-SFV, which included more behavioral specificity and increasing gender-neutral language. For example, the original SES-SFV referred to "unwanted sexual experiences as sex play (fondling, kissing, or petting, but not intercourse)," "sexual intercourse (penetration of a woman's vagina, no matter how slight by a man's penis; ejaculation is not required)," and "sex acts (anal or oral intercourse or penetration by objects other than the penis)" (Koss et al., 2007). Koss et al. describe this language as problematic and outdated and outline the revisions that were made. The revised SES "drops the term 'sexual intercourse' and substitutes behaviorally specific language to describe all the unwanted sex acts" (Koss et al., 2007). Similarly, de Heer & Jones describe how survey questions about sexual violence that "presume a female victim, or use heteronormative scenarios," can exclude sexual and gender

minority people, leading to undercounting and marginalization (de Heer & Jones, 2017). To assess whether campus climate surveys provide accurate estimates of sexual assault victimization for sexual minority students, de Heer & Jones compared sexual minority sexual violence prevalence rates in campus climate surveys to more detailed sexual assault-specific surveys. They found that general campus climate surveys were likely underestimating sexual violence victimization, and conjectured that this was because of the narrow, heteronormative language used in the campus climate surveys (de Heer & Jones, 2017). Similarly, Doan et al. describe how the National Transgender Discrimination Survey cannot be extrapolated from to count the numbers of "gender not listed" individuals or other gender minority people, due to how it defines transgender (Doan, 2016). To combat exclusive language, Doan et al. describe how surveys and measurement tools should allow more flexibility within their questions to allow for self-identification for their participants, such as allowing transgender people to self-identify as transgender, which yielded a significant improvement in their data (Doan, 2016). If measurement tools do not offer fully inclusive language within the questions they ask, then data from some individuals may not be accurately captured. Alternatively, having more gender-neutral language can alleviate burden and discomfort for survey respondents, while still maintaining survey validity.

Key Theme 4: Measurement tool development and pilot testing

There were two articles that focused on measurement tool development or a pilot test of a survey that has already been developed. In the first, researchers looked into how to develop a specific tool for measuring intimate partner violence (IPV), which is often tied to sexual violence, against transgender individuals as a way to mitigate the limitations found in other measurement tools. One example is the transgender-related IPV (T-IPV) tool, which is comprised of four questions

to assess IPV victimization into transgender populations (see *Figure 4*). These four questions focused on (1) being forced to conform to an undesired gender presentation or to stop pursuing gender transition, (2) being pressured to remain in a relationship by being told no one would date a transgender person, (3) being "outed" as a form of blackmail, and (4) having transition-related hormones, prosthetics, or clothing hidden or destroyed (Peitzmeier et al., 2019). While the sample used to test this tool was of 150 female-to-male transmasculine individuals in Boston, Massachusetts, the T-IPV tool has findings that support adequate reliability and validity when compared to other measures for transgender men individuals. Although there are improvements to be made to this new measurement tool and further reliability and validity to be determined in other populations of gender minorities, there is evidence from this study that utilizing the T-IPV tool is an effective method for measuring IPV in transgender populations. Another article was interested in looking at how to validate the sexual experience survey-short form (SES-SFV, see *Figure 4*) in lesbian, bisexual, and heterosexual women. Even though this study primarily focuses on sexual minorities, the participant demographics included transgender individuals, and significant discussion around modifications to the SES for transgender individuals. This review will specifically assess Canan et al.'s recommendations around transgender populations. One measure that was evaluated was anatomy, as the SES-SFV specifically refers to body parts, and not all women have vaginas (just as not all men have penises). Thus, Canan et al. designed the pilot test such that participants ~~to~~ selected either "I have a vagina" or "I have a penis" to sort which sexual assault victimization questions they would receive (Canan et al., 2020). This allowed the researchers to ask questions pertaining to anatomy in regard to sexual assault victimization in a way that doesn't assume the anatomy of an individual based on gender.

Key Theme 5: Involvement of gender minorities in research

There were two articles that discussed the involvement of gender minorities in survey development, modification, or testing. Gathering perspectives and insight from gender minorities is a crucial piece to developing better surveys and measurements in a way that is respectful, sensitive, and valid. Findings from the *Priorities and Best Practices for the Collection of Data about Gender Minorities: South America* expert meeting conclude that "research should involve meaningful community engagement and participation at all stages, and, related to this… gender minority communities should be appropriately recognized and compensated for their support of research collaborations" (Brown & Herman, 2020). Brown & Herman included accounts of participants who described personal experiences being exploited by researchers, and they stressed that mutual trust and compensation were key research strategies (Brown & Herman, 2020). Researchers' motivation for conducting research should be transparent, and their research products should be useful to and/or shared with communities whenever possible. Participants described how the type of community engagement should be tailored to the type of research – for example, research by a community organization would require different levels of trust and collaboration than research by a governmental organization. In all types of research, however, participants described safety and security for gender minority individuals as critically important (Brown & Herman, 2020). Suen et al. put these methodologies into practice by involving gender minority people in focus groups and cognitive interviews to develop best practices for writing sexual orientation and gender identity survey questions (Suen et al., 2020). There were 74 sexual and gender minority individuals, of whom 51.3% identified as gender minorities, who participated in nine focus groups and 19 cognitive interviews. Suen et al. found that "[c]urrent SOGI [sexual orientation and gender identity] questions are not sufficiently engaging SGM people" (Suen et al., 2020). They further described how "[t]esting and validation of new SOGI

questions on a national level has largely focused on the perspectives of non-SGM individuals… Few studies have examined SGM individuals' perspectives on SOGI questions, and there is a critical gap in understanding the extent to which current SOGI questions lead to inaccurate or incomplete empirical reflections of this group." Focus groups and cognitive interviews with gender minority people themselves illuminated themes and suggestions that Suen et al. argued only individuals with these identities and experiences could provide. For example, participants shared suggestions around how questions can better allow for identity fluidity, such as by providing more expansive options or the ability to select more than one option. Suen et al. stressed the importance of including gender minority individuals in research to improve both inclusion and the accuracy of "empirical representations" of these gender minority groups.

DISCUSSION

This systematic review generated five themes for future surveys and research on sexual violence in gender minority populations. While measuring sexual violence is complex and nuanced, especially for historically marginalized populations such as gender minorities, the articles included in this review provide several concrete strategies to utilize when approaching research of sexual violence in gender minority populations. The following five themes have been developed for an audience of researchers, or other professionals, whose interests lie with sexual violence and/or sexual and gender minority populations, and who wish to develop and/or adapt surveys that may pertain to sexual violence, to ensure that these surveys are respectful and inclusive of gender minority populations:

(1) Establishing survey and question validity for gender minority populations

(2) Utilizing the two-step approach to measuring gender

(3) Incorporating gender-neutral language when describing relationships, genitalia, sex acts, and sexual violence
(4) Conducting measurement tool development and pilot testing specifically for gender minority populations
(5) Involving gender minority people in every stage of the research process

Overall, while there are many survey and measurement tools for researching sexual violence, these articles described how the majority of these tools are created for ~~a~~ heterosexual, cisgender audiences. This leaves populations who fall outside of the heterosexual, cisgender "norm" to answer survey questions that do not accurately or comprehensively represent their experiences. Gender minority populations are disproportionately affected by sexual violence, and it is imperative that public health researchers improve measurement of this population to address these disparities.

Several articles included in this review cited the Williams Institute on Sexual Orientation and Gender Identity Law and Public Policy and its Gender Identity in U.S. Surveillance (GenIUSS) group as sources of best practices around measuring gender. For in-depth guidance on gender minority survey methodology, the Williams Institute has published a comprehensive guide: "Best Practices for Asking Questions to Identify Transgender and Other Gender Minority Respondents on Population-Based Surveys" (GenIUSS, 2014). This guide includes example question language that can be copied verbatim into measurement tools, including language for the two-step approach to measuring gender and language for measuring transgender status and LGBT identity.

Strengths and Limitations

This review has several strengths. First, it followed the PRISMA systematic review process, which represents a high level of rigor and ensures that quality of this review. Second, all eleven articles included in this review were rated either "good" or "excellent" quality through the CASP checklist review, so the themes identified in this review come from methodologically strong articles. A final strength is that this is one of the first systematic reviews on gender minority populations in sexual violence research. All articles included in this review relate to sexual and gender minority populations, and while the body of research on sexual and gender minority populations is relatively small, it has grown significantly in recent years. As awareness of and support for sexual and gender minority populations grow, sexual violence researchers can continue to review the growing body of research.

This literature review has limitations, as well. First, there is limited literature on sexual violence measurement in gender minority populations, and on sexual and gender minority populations in general, so the number of articles eligible for inclusion on this review was relatively small. There is a need for more robust research on the violence experiences of gender minority populations, and as more literature on this topic is published, additional reviews should be conducted. There was also a limitation related to where the studies in these articles were conducted. There was only one article that discussed research conducted in countries other than the United States, including several countries in the Global South, while the rest of the articles represent the United States context. Further, there were several best practices and recommendations that were developed within the United States but validated in other countries such as Brazil. However, both of these situations highlight the imbalance of gender minority research globally, with a large amount of the widely cited practices coming out of high-income countries. While there is some evidence to support these best practices through validation in other countries, they may not fully

capture the experiences and needs of gender minority populations in low- and middle-income countries. Relatedly, even though there were several articles included in this review that provided national and global context, only articles published in English were included, which limits the generalizability of this review to non-English-speaking populations and excludes measurement tools in languages other than English. Future studies should include a diverse range of articles that are written both in English and in other languages.

Public Health Measurement Implications & Future Directions

This systematic review provides several implications for future research. First, researchers who develop new surveys of sexual violence, whether for general populations or for gender minority populations specifically, should consider the five key themes of this review throughout the research process, from question development to pilot testing.

Second, existing surveys of sexual violence and campus climate should be critically reviewed to determine how well they capture the sexual violence experiences of gender minority individuals. For example, a future direction for public health research might include modifying the Canan et al. *Sexual Experiences Survey – Short Form Victimization* tool to include inclusive language that will resonate with, and better capture the experiences of, gender minority individuals.

CONCLUSION

The first objective of this systematic review was to describe the range of current methodological approaches and challenges when measuring sexual violence against gender minority populations. The second objective of this systematic review was to identify best practice recommendations for measuring and researching gender minority populations. A systematic review of five databases yielded 980 articles, with 11 articles selected for inclusion after full-text review. Though limited

by the relatively small number of published articles focused specifically on gender minority populations, a thematic analysis of the included articles generated five key themes: (1) survey/question validity, (2) utilizing a two-step approach to measuring gender, (3) use of gender-neutral language, (4) measurement tool development and pilot testing, and (5) involvement of gender minorities in research. These recommendations should be used to guide future research on and measurement of sexual violence involving gender minority populations. As the body of evidence on this topic continues to grow, additional literature reviews and qualitative interviews with gender minority individuals can expand on these conclusions.

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