

EXAMINING THE QUALITY OF GENDER MEASUREMENTS IN CRIMINOLOGICAL
AND CRIMINAL JUSTICE RESEARCH: PERVASIVE APATHY OR BAD RESEARCH
METHODOLOGY?

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ABSTRACT

Criminology has often been criticized for its lack of gender inclusivity and ‘androcentrism,’ particularly by feminist and queer criminologists who note that the field rarely uses separate measures of gender and sex assigned at birth or ones that extend beyond the binary, severely limiting the applicability of evidence-based, gender-responsive services in the criminal justice system. Other fields have adopted measures of gender that capture multiple identities and acknowledge the complexity of gender. However, it is unclear whether criminology has heeded these calls for inclusivity. Using a gender theory perspective, the current study analyzed 566 articles published between 2011 and 2020 from four criminological and criminal justice (CCJ) journals to explore the published studies’ gender operationalizations. Findings indicate that quality gender measurements are lacking, gender and sex assigned at birth are often conflated, and author and publication type are significant with regards to the inclusion of quality gender measurements.

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CHAPTER I

INTRODUCTION

Criminology, the social science field devoted to studying crime and criminal behavior, has historically been predominately male-focused (Belknap, 2015; Cook, 2016). This phenomenon is exemplified by the fact that many of the major theoretical foundations for explaining crime and criminality have their roots in studies with male-only samples. In response to the lack of analysis surrounding female criminality, feminist scholars were at the forefront of arguments pushing for female inclusion in studies during the 1970's and 1980's (Belknap, 2007; Chesney-Lind & Shelden, 2004). The disregard of female offenders and victims as valuable to studies created a justice system meant only for men, particularly cis men. Knowledge about offending patterns and treatment needs were generalized to both male and female offenders, ignoring the fact that gender-specific differences might exist (Cook, 2016; Franklin, 2008; Renzetti, 2013). More current research shows, however, that men and women have distinct factors that lead them into offending. For instance, female offenders are more likely to exhibit a history of intimate partner violence, adverse childhood experiences, and substance abuse, leading to a need for individualized interventions and responses (DeHart, 2018; DeHart et al., 2013; McKee & Hilton, 2017). However, the generalization of research based on male-only samples to female populations ignores these unique patterns and reduces the likelihood of accurate gender-responsive programming in the system.

Following the lead of the feminist movement, feminist criminologists were especially interested in gender operating as a social mechanism rather than biologically based assumptions. Daly and Chesney-Lind (1988) specifically felt that gender should be operationalized in the same way that it had been socially constructed which included acknowledging that gender roles and stereotypes, gender expression, and gender identity impact social behavior. Despite this, there is evidence to suggest that many articles in the field continue to only account for sex assigned at birth (Crittenden et al., 2022). Generally speaking, the term ‘sex assigned at birth’ is used to refer to biological characteristics and differences, and ‘gender’ to social and cultural ones that are typically associated with notions of femininity and masculinity (Anderson & Fine, 2017; Fausto-Sterling, 2005; Gentile, 1993).

The practice of ignoring gender in scholarly articles has been referred to as the ‘add women and stir effect’, in which researchers have simply included female individuals in their samples to try and account for gendered patterns, but still fail to include operationalizations based in theory that isolate gender from sex assigned at birth (Bernard et al., 2010; Kahle, 2018). As such, it is arguably difficult for criminologists to establish an understanding about gender and crime patterns that is anything more than conjecture. For instance, studies have often argued that women receive leniency in criminal cases, but these studies have only measured gender as sex assigned at birth and fail to account for patterns surrounding gender expression and identity (Doerner, 2012; Fernando Rodriguez et al., 2006; Freiburger & Sheeran, 2020). Evidence of this failure exists in cases such as child abuse and neglect, where children were more likely to be removed from the home when women were the primary aggressors, though it should be noted this outcome can vary by race (Crawford & Bradley, 2016; Middel et al., 2022; Scourfield, 2001). Scholars contend that this distinction is related to the crime being perceived as

contradictory to assigned gender stereotypes and roles. Specifically, the societal expectations that women are the primary caregivers, nurturers, and protectors.

Even more, when researchers do study gender on a social level, they still overwhelmingly do so in a binary way (male/female) which is non-reflective of gender's fluid nature (Crittenden et al., 2022; Westbrook & Saperstein, 2015). Binary constructions of gender involve having expectations and assigned roles for individuals based on their status as a 'man' or a 'woman' (Anderson & Fine, 2017). However, most individuals do not always conform to these expectations. This misconception has led researchers in both queer and feminist criminology to point out the additional need for measurements that fall outside of heteronormative rules and beliefs, such as including options for non-binary identities (Crittenden et al., 2022; Kahle, 2018; Valcore & Pfeffer, 2018). As a field, queer criminology has influenced new literature on LGBTQ+ identities, but many articles are only focused on victimization, which presents a gap in knowledge itself (Kahle, 2018; Messerschmidt, 2012).

Separating gender from sex assigned at birth and moving away from a binary framework represent two large obstacles facing researchers today. Through theory, crime has come to be understood as a complex phenomenon that is a product of biological, environmental, and social processes/experiences simultaneously. This mechanism is the lens through which gender should be viewed in all sociological efforts according to feminist scholars, gender theorists, and queer criminologists (Belknap, 2007; Daly & Chesney-Lind, 1988; Kahle et al., 2018). Recent research has highlighted the lack of criminological studies focused on gender outside of feminist spaces and the primary measurement of gender as a binary variable (Crittenden et al., 2022; Eigenberg & Whalley, 2015; Valcore & Pfeffer, 2018). However, further research into the quality of gender operationalization in criminal justice research is needed. In other social science fields (e.g.

psychology), researchers have created measures that capture multiple gender identities and acknowledge several different ‘facets’ of gender (Ansara & Hegarty, 2014; Joel et al., 2014; Lindqvist et al., 2021). However, it is unclear if criminology has similarly responded to the repeated criticism regarding its treatment of gender in research. Therefore, this study will attempt to analyze the quality of gender operationalizations by examining the frequency at which criminological studies use accurate gender measurements as opposed to using the concept as interchangeable with sex assigned at birth.

CHAPTER II

LITERATURE REVIEW

Gender vs. Sex Assigned at Birth

Although the two are often used interchangeably, sex assigned at birth and gender are two different concepts. As previously noted, the term ‘sex assigned at birth’ is used to refer to biological characteristics and differences, and ‘gender’ to social and cultural ones (Anderson & Fine, 2017; Fausto-Sterling, 2005; Gentile, 1993). In fact, it seems that most major research journals did not even commonly include the term ‘gender’ until the 1980’s, when feminist scholars began to discuss the social construction of women’s status as something separate from biological categorizations (Haig, 2000; Torgrimson & Minson, 2005). This trend picked up quickly, and in the 1990’s the term began to be used even more than ‘sex’ in articles across fields (Haig, 2000; Torgrimson & Minson, 2005). However, even though the term gender began appearing more, it did not necessarily mean the field was evolving. Rather, researchers point out that gender has also increasingly been discussed in a way that conflates the concept with sex assigned at birth, contributing to confusion between the two even in scholarly settings (Haig, 2000; Torgrimson & Minson, 2005). Gender was used as a more “politically correct” way to say sex assigned at birth or biological sex (Haig, 2000; Torgrimson & Minson, 2005).

Even though gender was originally intended to be an entity separate from sex assigned at birth, referring to only socially and culturally constructed ideas/beliefs, it was misconstrued over

time as being interchangeable with sex assigned at birth (Butler, 1990; Gentile, 1993). Gender, however, is an inadequate synonym for sex assigned at birth. Social scientists and gender theorists point out that it is irresponsible to assume that sex assigned at birth comes before gender because this isolates and ignores those who have different experiences (Bittner & Goodyear-Grant, 2017; Butler, 1990; Fausto-Sterling, 2012; Westbrook & Saperstein, 2015). Although social science should work towards inclusivity of all experiences because it is good research practice, there is also evidence of the separation of gender and sex assigned at birth already present outside of a gender theory perspective.

Many individuals who deny the separation of gender and sex assigned at birth use biology as the basis for their argument, citing that there are clear sex-based differences between men and women (Gelman, 2003; Skewes et al., 2018). Yet, requiring that sex assigned at birth be strictly binary fails to acknowledge that intersex individuals exist. The term ‘intersex’ refers to individuals who have biological sex characteristics such as hormones, chromosomes, and anatomy that fall outside of the typical male-female binary, and it is estimated that about 1.7% of the entire population can be classified as such (Blackless et al., 2000; Crocetti et al., 2021; Haghghat et al., 2023). Notably, though, this number does differ depending on the exact definition used. Medically, intersex characteristics have been pathologized and altered either surgically or through medication (e.g. hormones) to make individuals fit into the binary, which has been deemed as problematic and harmful by feminist and queer scholars (Carpenter, 2018; Haghghat et al., 2023; Jenkins & Short, 2017; Johnson et al., 2017). This may also contribute to the relatively low numbers of its estimated prevalence as these changes are often made at birth or close to birth without consent of the intersex individual.

There is also evidence that points to sex assigned at birth itself being non-binary when accounting for multiple characteristics of the human body. Anthropologists have highlighted that in relation to other mammals and pre-historic humans, humans today exhibit limited sexual dimorphism (Larsen, 2003; Plavcan, 2001; Ruff, 2002). Sexual dimorphism refers to the presence of differences between two sexes in the same species, and this is related to certain aspects of anatomy including body size and shape, with modern-day humans being especially similar between men and women (Larsen, 2003; Plavcan, 2001; Ruff, 2002). When it comes to brain makeup, studies have found that the average female and male brain are indistinguishable, with individuals seeming to have their own unique ‘brain mosaic’ comprised of both female *and* male characteristics (Joel, 2021; Joel, 2015; Zhang et al., 2021). This finding has led some biologists to suggest that sex assigned at birth is somewhat socially constructed (Fausto-Sterling, 2012; Fujimura et al., 2008). These findings do not deny that there are biological differences that clearly separate the two sexes. However, these differences have been emphasized through a binary framework in a way that essentially ignores the diversity that occurs within these groups, much like gender.

The conflation of sex assigned at birth with gender through a binary lens is even more problematic on a cultural and social level. This conflation would assume that sex assigned at birth can create social behavior and expectations, leading to direct, noticeable differences in men and women regardless of the surrounding environment. This is not scientifically sound. A meta-analysis of multiple studies shows that there are actually more in-group differences than between-group differences for men and women in regards to cognition, personality, and social behaviors (Hyde, 2014). Much like with sex assigned at birth and ‘brain mosaics’, research points to individuals having their own unique identities which may be similar or different to

others in their gender group. Furthermore, biological sex characteristics such as hormone composition have traditionally been thought to produce certain behaviors. For example, testosterone is often associated with aggressive and violent behavior (Archer, 1991; Mazur & Booth, 1998), but some studies have found that testosterone can lead to pro-social, caring behaviors (Dreher et al., 2016; Van Honk, 2011; Zhao et al., 2023). These mixed findings may be the product of gender/sex assigned at birth conflation, in which even research has failed to discern between the two. It is unclear how sex assigned at birth might contribute to preferences in clothing, activities, personality traits, and other forms of expression without some form of socialization. Even still, identification with any of these factors that does not conform to traditional gender roles does not inherently mean anything about one's gender or sex assigned at birth (Ellemers, 2018). One study found that 35% of cisgender respondents 'felt' somewhat like the other gender, both, or neither at times when given a non-dichotomous gender identity survey (Joel et al., 2014). This finding reflects the complexity of gender as well as its ability to be fluid even for individuals who share their perceived 'synonymous' sexual identity.

Gender Theory

To understand more clearly what gender is, it is essential to look to prominent gender theorists who have studied the concept more deeply. Gender theory had its start in early feminist thought which began to deconstruct the ideas of sex assigned at birth and gender to understand women's place in society. Early feminists recognized that gender was socially constructed to some extent. It was Simone De Beauvoir (1949) who said, "one is not born, but rather becomes, a woman" (p. 267), and gender theory has evolved to view gender identity as something one constantly performs, rather than a biologically based manifestation (Butler, 1990; Jule, 2014;

Rubin & Reiter, 1975). More importantly, gender can have individual, cultural, institutional, and structural definitions. Gender can impact the way individuals choose to express themselves physically and behaviorally, but is also used as an organization tool for labor division, social status, and cultural expectations, none of which are solely biologically based (Butler, 1990; Lindqvist et al., 2021; Morgenroth & Ryan, 2018). These facets of everyday life are taught and then maintained through these same channels. For example, children are taught how to act according to their gender, internalize these roles, and then teach the same things to their children as adults (Morgenroth & Ryan, 2018; West & Zimmerman, 1987). Lindqvist et al. (2021) give the example of researchers who operationalize gender as a variable with only two options, stating that these researchers are ‘performing’ and maintaining the social construction of gender as a binary. Many gender theorists have simply recognized the concept as incredibly complex, constantly being defined and redefined on an individual and systemic level through social interaction (Lucal, 1999; Short et al., 2013; West & Zimmerman, 1987).

The reliance on a binary system of classification ignores the complexity of gender. This can apply to binary views of gender itself as well as a binary perspective of the relationship between sex assigned at birth and gender. Typical binary gender constructs usually expect individuals to identify themselves as a ‘man’ or a ‘woman’, ‘masculine’ or ‘feminine’, or some other form of the concepts with no other options, and these come with certain expectations for how one presents themselves (Cloke & Johnston, 2005; Lucal, 1999; Messerschmidt et al., 2018). Despite this, both cisgender and transgender individuals diverge from these expectations in everyday life without changing their gender identity. Lorber (1994) argues that the focus on a solely woman/man binary only serves to further gender inequality by emphasizing differences which are construed to be sex-based. In conjunction with this inequality, the traditional binary

view of gender is often used as a basis for other forms of oppression such as homophobia and racism (Butler, 2020; Nagoshi & Nagoshi, 2013; Stryker & Whittle, 2013). Therefore, recognizing that gender and sex assigned at birth are different concepts is not enough- society's view of gender must be critically deconstructed to fully understand how gender impacts human behavior, including crime.

Similarly, gender theorists have cautioned against adopting a simplistic binary view of the relation between sex assigned at birth and gender (Fausto-Sterling, 2005; Short et al., 2013). While the two are not the same, it would also be incorrect to completely restrict sex assigned at birth to inside the body and gender to the outside. Gender theorists recognize that sex assigned at birth and biological differences often do contribute to gender perceptions and experiences (Fausto-Sterling, 2005; Short et al., 2013). On the other hand, gender socialization can have biological impacts on health and physiological characteristics (Jordan-Young, 2011; Krieger, 2014; Pardue & Wizemann, 2001; Rieker et al., 2010). As such, it is important for research to use a theoretical foundation to truly capture the elaborate nature of gender *and* its relationship to sex assigned at birth.

Operationalizing Gender in Research

As stated previously, gender measurements should be founded in theory and extend beyond typical societal binary constructions. Good research methodology includes having variables that are exhaustive (Rennison & Hart, 2022). Specifically, categorical variables, as gender is often treated, should have all possible options included in their operationalization. Given the fact that gender is not a binary concept, an exhaustive gender variable would include more than just 'male'/'female' or other versions of the terms (Ansara & Hegarty, 2014; Lucal,

1999; Richards et al., 2016). Despite this, it appears most social scientists continue to measure it with only two categories, leaving out non-binary and gender non-conforming options (Crittenden et al., 2022; Westbrook & Saperstein, 2015). This finding represents a measurement issue that is prevalent in mainstream articles. Researchers risk not capturing patterns related to alternative gender identities and misrepresenting their findings at the very least.

In survey research, nonbinary and transgender individuals may skip gender questions altogether if they feel misrepresented by the categories, or they may select an option that is not truly representative, leading to methodological problems with missing data or data that is invalid (Tate et al., 2013). The practice also contributes to discrimination against gender minorities and presents ethical problems for researchers by ignoring the existence of nonbinary gender identities (Ansara & Hegarty, 2014; Frohard-Dourlent et al., 2017; Westbrook & Saperstein, 2015).

Especially in survey research, researchers should endeavor to make the categories exhaustive so that their respondents do not have to choose an attribute that does not accurately represent them. Researchers are expected to follow ethical practices to avoid doing harm to vulnerable populations, but many overlook the use of binary gender measurements as potentially harmful despite the fact that nonbinary, transgender, and gender-queer individuals report feeling misgendered and disregarded when not presented with their preferred gender option in surveys (Frohard-Dourlent et al., 2017; Hyde et al., 2019), which are signs of psychological harm.

This potential for measurement issues and harm to research subjects continues to grow over time. Estimates reveal that around 0.5% of all adults in the United States are non-binary or transgender, with this number more than doubling to 1.3% for individuals aged 13 to 17 years and 1.4% for individuals 18 to 24 years (Herman et al., 2022). Researchers also noted that this number has risen exponentially each year when surveying younger populations (Herman et al.,

2022), meaning that studies using adolescent or college-aged samples especially need to be cognizant of the language used in research instruments. For criminologists specifically, research also shows a growing number of people coming into contact with the justice system, particularly inmates, who identify as transgender or gender non-conforming (Flores et al., 2016). Insight into this population is paramount to providing evidence-based risk assessments, treatments, and resources. Given the fact that gender is a known influential factor which impacts individuals' pathways into the criminal justice system as well as their specific needs once introduced, there are bound to be further patterns unique to the non-binary and transgender population (DeHart, 2018; DeHart et al., 2013; McKee & Hilton, 2017). Some survey research has already shown that nonbinary and transgender individuals face unique obstacles in accessing housing, rehabilitation services, and healthcare while in the system, meaning that further research is needed to create evidence-based practices for this population (Buist & Stone, 2014; Grant et al., 2011).

Researchers should also be aware that using more inclusive measurements of gender does not mean only adding a third categorical option to their studies. Cameron and Stinson (2019) suggest using a single-item open-ended question when possible. In their example, this looks like 'I identify my gender as: _____ (please specify)'. The benefits of using a measure similar to this are that individuals are allowed to self-identify using their own preferred terminology, and researchers can still transform responses into categorical variables during data entry (Cameron & Stinson, 2019). When using closed-ended options is necessary, categories such as 'other' or 'prefer not to say' should be avoided. The latter option leads to incomplete data similar as to when respondents skip a question or choose an option that is not truly reflective of their identity (Cameron & Stinson, 2019; Tate et al., 2013). Furthermore, these terminologies seem to imply that transgender and non-binary identities are abnormal and deviant and contribute

to the ‘othering’ of minority populations. The term ‘othering’ refers to the discriminatory practice of setting apart or isolating a group of people for their characteristics or identities in order to paint them as not fitting into standard societal norms (Bhabha, 1983). Research has a responsibility to create a place where people of all gender identities can find representation that is non-discriminatory in nature.

Some scholars have argued even further for the ‘multi-question approach’ to the gender measurement (Bauer et al., 2017; Tate et al., 2013; Westbrook & Saperstein, 2015). This approach clearly separates sex assigned at birth and gender from one another by asking participants a question about their sex assigned at birth first and then following up with a question about their gender identity. According to Westbrook and Saperstein (2015), the multi-question approach offers much more insight into the prevalence of transgender and non-binary identities compared to traditional survey methods. Some scholars have pointed out that the term ‘transgender’ may refer more so to an experience rather than an identity (Ansara & Hegarty, 2014; Lindqvist et al., 2021). For example, a transgender woman is someone whose sex assigned at birth is male but identifies as a woman. In a research instrument which only provides the options ‘man’, ‘woman’, ‘transgender’, or ‘nonbinary’, it can be difficult for that individual to ascertain which option most applies, and it would be equally problematic for a researcher to imply that individuals should somehow rank their relevant identities and experiences over one another. This example represents another area in which the multi-question approach is beneficial by removing the need for an individual to choose transgender as their gender identity while still allowing the researcher to discern between transgender and cisgender respondents.

Overall, researchers must make the ultimate decision on what method of measurement makes the most sense in the context of their study. Gender theorists state that there is no

definitive best-practice for measuring gender because each individual study has a different reason for measuring it, and researchers should address this reason clearly in their methodology (Ansara & Hegarty, 2014; Cameron & Stinson, 2019; Lindqvist et al., 2021). In doing so, researchers should clearly describe their operationalization of gender and the theoretical foundation for it. Cameron and Stinson (2019) also argue that researchers should state what was done with data about transgender and nonbinary participants. For example, if the frequency of transgender and nonbinary participants did not meet necessary sample sizes and therefore needed to be excluded from analysis, this should be noted in the methodology along with the specific measurement used for the variable.

Multidimensional Gender Operationalizations

Since gender is a complex notion encompassing multiple aspects of an individual's life and experience, Lindqvist et al. (2021) argues that social scientists should determine the best-fit measurement by looking at the research question/s they wish to answer. In truth, social science research is typically more interested in the social/cultural aspects of one's gender identity rather than biological characteristics, making the fact that most continue to use binary measurements of sex assigned at birth problematic. For some studies, using a multidimensional measure over a simple categorical one might best capture the patterns researchers are interested in. While not perfect, several researchers have already created models that can be used as a starting point.

One of the first alternative gender measures developed was the BEM Sex-Role Inventory, which attempted to score respondents' masculine or feminine gender expression (Bem, 1974). The most important aspect of the inventory was that it did not treat gender as two mutually exclusive categories, meaning that respondents could score high in both masculinity and

femininity, low in both, or high in one and low in the other. Although the inventory has been criticized for attempting to define what it means to be ‘masculine or ‘feminine’ with mostly stereotypical assumptions (Connell, 2020; Hoffman & Borders, 2001), researchers might find that the model is a beneficial starting place for measuring patterns related to gender expression rather than self-defined gender identity.

A more recent multidimensional gender measurement comes from Joel et al. (2014) in what they call the Multi-Gender Identity Questionnaire. The questionnaire analyzes respondents’ self-identification with masculinity and femininity in relation to their sex assigned at birth, personal gender expression, and gender identity. For instance, respondents are asked in one section of the questionnaire how much they *feel* like a man or a woman, and are also asked to what extent they *wish* to be a man or woman no matter what they report as their gender identity (Joel et al., 2014). Results from the questionnaire showed that many individuals displayed diverse responses that were at times synonymous with their gender identity and at times not synonymous (Jacobson & Joel, 2018; Joel et al., 2014). In other words, gender identity can have many facets that goes beyond labels, and some studies may better unearth patterns and correlations through measuring gendered self-concepts, like that of masculinity and femininity. For example, Clinkinbeard et al. (2020) found that individuals who considered themselves to be more masculine were more likely to consider joining the police. This trend was apparent among both men and women in the sample, again highlighting that self-concepts of masculinity and femininity are not always in line with sex assigned at birth or gender identity, and at times this self-concept impacts research outcomes. Another benefit of the questionnaire is that it attempts to measure gender performance with certain items (Joel et al., 2014; Lindqvist et al., 2021). For example, respondents are also asked whether they feel as if they have had to work to be a man or

a woman in the past 12 months. A key element of gender theory is the idea of gender being something that individuals perform, sometimes referred to as ‘doing gender’ (Butler, 1990; Jule, 2014; Rubin & Reiter, 1975). The concept of gender performance is especially relevant to criminology. Peterson (2018) asserts that gender performance is an important defining factor for gang-involved men and women who must alter their behavior to fit into a hyper-masculine environment, and even more so for members who do not identify as cisgender or heterosexual.

In psychology, Egan and Perry (2001) developed a multidimensional model for measuring gender in adolescents and children. Their model included five distinct scales or ‘levels’ of gender which was used to analyze a child’s overall gender category and level of confidence in being able to fit into that category. The model was used as inspiration by Tate et al. (2014) to create a ‘gender bundle’ measurement which also included five unique components of gender: birth assigned gender (can also be called sex assignment), current gender identity, gender roles and expectations, gender social presentation, and gender evaluations (pg. 303). The authors do not describe a set way to measure each of these facets, but they encourage researchers to look to different areas of study when deciding how to, namely anthropology, psychology, sociology, gender studies, and sexuality studies. Each of the components are meant to draw attention to how individuals self-define their own gender, express this gender, their feelings and experiences related to fitting into gender roles and expectations, and how they perceive and judge ingroup *and* outgroup members of their gender category (Tate et al., 2014). The authors also bring special attention to the way they prefer to group populations for analysis under this model. Compared to the Egan and Perry (2001) measure which divided individuals based on their sex assigned at birth, or birth assigned gender as the authors refer to it, Tate et al. (2014) suggest that researchers group their sample by self-defined gender identity. This argument is supported by evidence that

transgender individuals are equally as predictive of gendered outcomes as cisgender individuals (Gülgöz et al., 2019; Olson et al., 2015). In other words, transgender individuals display patterns more in line with their self-identified gender group than their sex assigned at birth group.

As with categorical measures of gender, researchers are encouraged to build multidimensional models of gender when it best fits the context of their study and in a way that makes sense for the research question/s. One disadvantage of multidimensional models is their tendency to be extensive (Lindqvist et al., 2021). The Multi-Gender Identity Questionnaire itself has 32 individual questions that researchers would need to code for (Joel et al., 2014). In a study which only intends to use gender as a control variable, this might not be the best fit. This fact is why gender theorists and scholars emphasize the thoughtful consideration of gender as a variable, including its purpose and hypothesized outcomes in a study (Ansara & Hegarty, 2014; Cameron & Stinson, 2019; Lindqvist et al., 2021). Even for articles whose main focus is not gender per se, researchers should still analyze which component/s of gender are relevant to their study in order to create more intricate models. As stated by Cameron and Stinson (2019), “*any gender inclusive measure is better than a binary one*” (p. 9).

The State of Gender Across Fields

Accuracy in the assessment of gender seems to be lacking across all fields, but there is some variation in how this may manifest. The social sciences have made the most progress in adapting the way gender is considered in studies, most notably through the increased use of nonbinary gender categories in fields such as psychology (Curtin & Okuyan, 2017). Additionally, many of the models and guidelines relevant to measuring gender were created by scholars in a social science (Ansara & Hegarty, 2014; Bauer et al., 2017; Cameron & Stinson, 2019; Joel et

al., 2014; Lindqvist et al., 2021; Tate et al., 2014; Tate et al., 2013; Westbrook & Saperstein, 2015). Even still, scholars have criticized the overall lack of conceptually correct measurements for gender in social science just like with other fields (Cameron & Stinson, 2019; Gentile, 1993). Despite producing the most research regarding the separation of sex assigned at birth and gender, many social science scholars are still conflating the two when carrying out studies that are not specific to the topic, meaning that more mainstream, non-specialty journals and articles continue to lack theoretical foundation in gender (Cameron & Stinson, 2019; Westbrook & Saperstein, 2015).

Several pieces of research have been devoted to the lack of inclusion of sex assigned at birth and gender to begin with as well as the poor operationalization of the concepts when they are used in public health research (Day et al., 2019; Hammarström & Annandale, 2012; Mena & Bolte, 2019; Miani et al., 2021). The inclusion of sex assigned at birth and gender as variables in public health articles is often done so in a way that conflates the two terms and reflects binary gender roles and stereotypes (Wandschneider et al., 2020). Interestingly, surveys of public health clinicians found that a majority recognized that sex assigned at birth and gender were not interchangeable concepts (Biskup et al., 2022; Risberg et al., 2003). However, there was much variation in the individual definitions that clinicians gave for sex assigned at birth and gender, pointing to a need for a more standardized use of gender theory.

Specialty journals and articles, especially from a feminist or queer perspective, produce the most complex, theoretically founded measurements of gender across certain fields (Alexander et al., 2021; Phillips, 2005), though it should be noted research in this area is severely limited. In health articles, specialty journals related specifically to women's healthcare as well as physicians with a background in obstetrics and gynecology display more awareness of gender

(Risberg et al., 2003). This reflects somewhat of a disregard by mainstream research for inclusivity and uncovering nuanced gendered patterns that go deeper than sex assigned at birth differences because topics focused solely on gender have typically been relegated to special research. This notion is further supported by the fact that ‘gender’, or sex assigned at birth in actuality, is most often included as a control or ‘dummy’ variable (Hardies & Khalifa, 2018; Shapiro et al., 2021). Some authors feel that this enables the oversimplified operationalization of the variable and also allows researchers to give no justification for their inclusion of gender to begin with (Hardies & Khalifa, 2018; Shapiro et al., 2021). To expand knowledge about gender across disciplines, calls must be made for more adequate operationalizations.

Gender and Criminology

Early criminological research was based almost entirely on men, meaning that most crime theories are made to explain male offending and not to identify nuanced gendered patterns (Cook, 2016). Despite the push from feminist criminologists in the 1970’s and 1980’s for the inclusion of gender as a variable to highlight the unique experiences and needs of female offenders and victims in comparison to men (Belknap, 2007; Daly & Chesney-Lind, 1988), modern criminology still suffers from a lack of inclusive gender measurements. Even with the increased use of women in research samples, many criminal justice researchers continue to generalize findings from male-only studies to female populations (Cook, 2016; Hannon & Dufour, 1998). Furthermore, many studies which claim to be interested in ‘gender’ employ a narrow framework which only features cisgender, heterosexual, white women and ignores gender and sexual minorities (Anderson & Fine, 2017; Valcore & Pfeffer, 2018).

The field also exhibits a lack of gender and sex assigned at birth inclusivity in terms of authorship. Several studies have indicated that men still dominate criminal justice publications as sole authors and first authors, and are more likely to work with other men rather than women (Crittenden et al., 2022; Eigenberg & Whalley, 2015; Zettler et al., 2017). This phenomenon is similarly reflected in the composition of editorial review boards (Lowe & Fagan, 2019). On the other hand, women make up the majority of authors for feminist journals and are more often the ones exploring topics related to gender (Eigenberg & Whalley, 2015). In other words, gender has become normalized as a ‘special topic’, effectively isolating it from mainstream criminological research, because female authors who publish articles centered around gender primarily do so in specialized journals. Therefore, articles in non-specialty journals reflect somewhat of a disinterest in uncovering more nuanced gendered patterns in criminology, and this is further supported by the way gender is treated by authors in these journals.

Gender is mostly used as a control variable in mainstream criminal justice articles and often operationalized as a binary ‘male/female’, which conflates gender with sex assigned at birth and subsequently fails to acknowledge non-binary and transgender identities (Crittenden et al., 2022; Valcore & Pfeffer, 2018). This non-inclusive measure creates generalizability problems. Similar to applying research based on men to women, it is irresponsible and invalid to apply results from binary gender measurements to people of all gender identities. Evidence suggests that transgender and nonbinary individuals are disproportionately represented within the criminal justice system, and present unique needs for social services, housing options, healthcare, and rehabilitative services (Buist & Stone, 2014; Grant et al., 2011). Valcore and Pfeffer (2018) note that a major obstacle facing criminology in using more inclusive measurements of gender is the field’s over-reliance on secondary data from federal, state, and local sources in comparison to

other sociological fields like psychology. Major datasets such as the U.S. Census or police reports utilize a binary measurement of gender and do not separate the concept from sex assigned at birth (Grant et al., 2011). In this sense, it seems that criminology reflects the overarching belief that gender and sex assigned at birth are synonymous and binary.

Relatedly, the type of methods used in criminological studies do not provide the greatest context for measuring gender. In comparison to quantitative methods, qualitative studies are used to capture deeper themes or patterns and can explore more nuanced social processes (Rennison & Hart, 2022). Due to these characteristics, gender might be more adequately captured in qualitative studies. In criminology, however, quantitative methods are more frequently used over qualitative methods by researchers (Copes et al., 2020; Tewksbury et al., 2012). When looking at all articles published between the years 2010 and 2019 within 17 different journals, Copes et al. (2020) found that only 11.3% used qualitative methods. Furthermore, only 5.3% of the articles published in the top five criminological journals used qualitative methods (Copes et al., 2020). These findings suggest that criminology prioritizes research methods that are not necessarily the best for understanding gendered patterns and processes. However, further research is still needed to establish that qualitative studies more adequately measure gender or capture themes related to gender than quantitative ones.

Current Study

The extant literature appears to suggest that criminology lacks inclusive gender measurements. Feminist scholars, gender theorists, and queer criminologists have pointed out time and time again that researchers are not adequately operationalizing gender, and therefore continue to only account for sex assigned at birth differences (Belknap, 2007; Belknap, 2015;

Crittenden et al., 2022; Daly & Chesney-Lind, 1988; Kahle, 2018; Valcore & Pfeffer, 2018).

Measurements in all social sciences rarely extend beyond the typical binary, and interest in gender as a complex concept is mostly present in specialty focused journals and articles written by female identifying authors (Crittenden et al., 2022; Eigenberg & Whalley, 2015; Valcore & Pfeffer, 2018). Criminologists may have begun to include gender more frequently as a variable, but it appears there may be issues in the field regarding the quality of measurement.

Furthermore, the field overwhelmingly uses quantitative research methods as opposed to qualitative ones, which may contribute to the inadequate analysis of gendered patterns and themes in criminology (Copes et al., 2020; Tewksbury et al., 2012). As such, this study aims to assess the extent to which criminologists have responded to calls for inclusive, more complex gender variables by answering the following research questions:

1. To what extent do criminological articles adequately measure gender?
2. To what extent do criminological articles use sex assigned at birth and gender interchangeably?
3. What is the relationship between the type of study (qualitative or quantitative) and the quality of gender measurements?
4. What is the relationship between the gender of the author team and the quality of gender measurements?

CHAPTER III

RESEARCH METHODOLOGY

Data and Sample

This study utilizes a content analysis of prominent criminological journals. Content analysis is a primarily qualitative method which allows researchers to identify and categorize patterns within data (Rennison & Hart, 2022). Both manifest and latent content analysis were used to examine the specific operationalization of gender as a variable in the methodologies of criminological articles. Manifest content analysis involves coding for elements of the data that are explicitly present and visible with little interpretation from the researcher (Rennison & Hart, 2022). This study used information already present within the text related to gender operationalization, often found within the article's methodology. For articles that used qualitative methods which involved identifying themes after data collection, content within the results section of the article related to the authors' observance of gendered patterns was analyzed. Latent content analysis, which involves the interpretation of content by the researcher to find meaning (Rennison & Hart, 2022), was used to assess the inclusivity and quality of gender measurements.

Data for this study was obtained using all articles published within the journals *Race & Justice*, *Journal of Research in Crime and Delinquency*, *Feminist Criminology*, and *Criminology* between the years 2011 and 2020, which resulted in a total of 936 articles. However, only articles which included gender or sex assigned at birth as variables were used for analyses, resulting in a

total sample size of 566 articles. The *Journal of Research in Crime and Delinquency* and *Criminology* were chosen because of their status as some of the most top-cited journals in criminology (Barranco, 2016). This will allow the current study to generalize results more accurately to mainstream criminological research. Additionally, research into gender and gender minorities has been almost exclusively done by female authors in specialty journals (Crittenden et al., 2022; Eigenberg & Whalley, 2015). Therefore, the current study chose to include *Race & Justice* and *Feminist Criminology* to compare how patterns of measurement might differ between general and special-topic journals. Moreover, *Race & Justice* states in its aims and scopes that the journal is interested in publishing articles that explore the intersection of race, ethnicity, and gender (SAGE, 2023). *Race and Justice*, *Feminist Criminology*, and *Criminology* are published by the American Society of Criminology (ASC), which is a well-respected, prominent organization of criminologists (ASC, 2020).

Coding Technique

The current study serves as an extension of a previous study aimed at analyzing the way gender, race/ethnicity, and sexual orientation are measured and operationalized in criminology. The original data was collected by two trained coders using a coding sheet which examined each distinct section of the articles (title, keywords, abstract, introduction, literature review, methods, findings, discussion/conclusion) (Crittenden et al., 2022). Sections were inspected for mentions of gender or sex assigned at birth to assess their use as a variable and operationalization. Specifically, data was coded as either yes (1) or no (0) for whether or not gender/sex assigned at birth were mentioned in each section of the article and whether or not gender/sex assigned at birth was used as an independent, dependent, or control variable (Crittenden et al., 2022). The

specific operationalization of the variable was noted for each article and further coding was completed to indicate if the measurement was binary (0) or other (1). Coders also examined the gender of the author team of each article by using pronoun information present in the authors' biographies. If no pronouns were used, the author was classified as "unknown" rather than assuming a gender. The author team was coded as either 'no author' (0), 'all male' (1), 'all female' (2), or 'mixed gender' (3). Lastly, article information including the year of publication, volume, issue number, title, and the journal of publication were included. The information included in the original analyses provided much-needed insight into the inclusion and use of gender as a variable in criminology, specifically that gender is most often used as only a control variable and measured on a binary (Crittenden et al., 2022). To build upon these findings, this study will further assess the quality of gender measurements in the field.

Each of the 566 articles selected for analyses were examined and coded by one researcher for information regarding gender and its operationalization. Measurements of 'gender' were coded as either 'no information' (0), 'gender' (1), 'sex assigned at birth' (2), or 'interchangeably' (3). When gender is used as a categorical variable, scholars argue that it should be exhaustive in nature by including nonbinary categories, and should acknowledge that sex assigned at birth is a separate concept, usually by using a multi-question approach (Bauer et al., 2017; Cameron & Stinson, 2019; Tate et al., 2013; Westbrook & Saperstein, 2015). Studies which are interested in the effects of gender on a more complex level should utilize a multidimensional approach of some sort which includes several 'facets' of gender (Ansara & Hegarty, 2014; Joel et al., 2014; Lindqvist et al., 2021; Tate et al., 2014). Therefore, observed measurements of gender as detailed by the authors of each article were coded as 'gender' (1) if they employed any of the aforementioned measurements. For some qualitative studies without explicit variables,

measurements were coded as ‘gender’ (1) if the authors identified gendered patterns and themes through their research. This was determined by whether ‘gender’ was included in the title of a heading in the results or themes section of the article. On the other hand, articles were coded as measuring for ‘sex assigned at birth’ (2) if the authors explicitly stated in the text or included datasets that the included variable was ‘sex’, ‘sex assigned at birth’, ‘biological sex’, ‘male/female’, ‘male’, ‘female’, or some other form of a binary measurement which alludes to sex assigned at birth without mentioning gender. Articles were coded as measuring sex assigned at birth and gender ‘interchangeably’ (3) if the authors stated they were measuring ‘gender’ but used any measurement which was non-exhaustive (binary), failed to acknowledge the separation of gender and sex assigned at birth, and/or was not multidimensional in nature. Lastly, articles in which no details from the text or from tables at all could be discerned about how gender was being measured were coded as ‘no information’ (0).

Regarding the type of study, articles were coded as either ‘quantitative’ (0), ‘qualitative’ (2), or ‘mixed methods’ (3) using content from the abstracts, methods, analysis, or results section of the article. In most cases, authors explicitly stated the type of methodology used and were subsequently coded as such. In cases where the type of method used was not mentioned by the authors, the type of analyses employed in the study was used to make the most accurate categorization. In general terms, quantitative studies use numerical data and statistical analyses to measure outcomes, whereas qualitative studies involve the use of observation and interpretation to identify patterns and themes in data (Rennison & Hart, 2022). Some studies employ both methods at once, which would be categorized as a ‘mixed methods’ (3) study.

CHAPTER IV

ANALYSIS AND FINDINGS

Both univariate and bivariate analyses were conducted. Due to the nominal level of the variables used, multivariate analyses were not appropriate for use (Walker & Maddan, 2020). Descriptive statistics were used to calculate the frequencies of each of the included variables, and these are displayed in Table 1. Of the 566 articles in the sample, 32% were from *Criminology*, 29.9% were from the *Journal of Research on Crime and Delinquency* (JRCD), 20.5% were from *Race & Justice* (R&J), and 17.7% were from *Feminist Criminology*. These percentages are somewhat similar to the publication rates of the journals across the 10-year span. Of the original 936 articles, 30.8% were from *Criminology*, 28.6% were from the *Journal of Research on Crime and Delinquency*, 20.4% were from *Race and Justice*, and 20.2% were from *Feminist Criminology*. The year of publication for each of the articles was divided into two categories, with 49.3% of the articles being published between 2011 and 2015, and the other 50.7% being published between 2016 and 2020. As might be expected, 78.3% of the articles used quantitative methods, 16.4% were qualitative, and only 5.3% were mixed methods. The articles' authors were most frequently comprised of mixed gender teams (45.4%), with 28.8% of the author teams being all male, and 25.8% of the author teams being all female.

Regarding the articles' measurement of gender as a variable, 72.4% of the articles used gender as a control variable and 27.6% of the articles did not. Furthermore, 79.7% of the articles

included gender as an independent variable and 20.3% did not. When examining the quality of gender measurements, 47.7% of the articles used gender and sex assigned at birth interchangeably. One such example explored the impact of extended neighborhood levels of poverty on ‘gendered’ patterns of juvenile offending but measured the variable as ‘male’ or ‘female’ (Graif, 2015). 37.6% of the articles measured only sex assigned at birth, as seen in one article which examined sex differences in sentencing, where the subsequent measurement was ‘male’ or ‘female’ (Embry & Lyons, 2012). Only 9.9% of the articles accounted for gender. A notable example is an article that included a separate measure for sex assigned at birth in addition to asking respondents about their own self-concepts of masculinity to understand who aspires to join the police (Clinkinbeard et al., 2020). 27 (4.8%) of the examined articles provided no information on how gender was measured in their study such as one article which simply stated demographic information including gender were recorded (Lieberman et al., 2014). Furthermore, no specific data about gender was recorded within the article’s data tables, as the variable was described again only as ‘gender’.

Table 1 Article Characteristics

	n	%
Journal		
Criminology	181	32%
JRCD	169	29.9%
R&J	116	20.5%
Feminist Criminology	100	17.7%
Year of Publication		
2011-2015	461	49.3%
2016-2020	475	50.7%
Study Type		
Quantitative	443	78.3%
Qualitative	93	16.4%
Mixed methods	30	5.3%
Gender of Author Team		
All male	163	28.8%
All female	146	25.8%
Mixed gender	257	45.4%
Gender as Control Variable		
No	156	27.6%
Yes	410	72.4%
Gender as Independent Variable		
No	746	79.7%
Yes	190	20.3%
Gender Measurement		
No information	27	4.8%
Gender	56	9.9%
Sex assigned at birth	213	37.6%
Interchangeably	270	47.7%

Note: n = 566

Following the application of univariate analyses, Chi-square tests were employed to explore the relationship between quality gender measurements and each of the above listed variables. A Chi-square test is a bivariate analysis that calculates the difference between how often a value is observed and how often it is expected to be observed (Walker & Maddan, 2020). The corresponding Chi-square value of the test relates to the relative size of the difference between the expected value and actual value. Specifically, the larger the difference between the

expected and actual values, then the larger the Chi-square value will be (Walker & Maddan, 2020). Furthermore, the relative size of this value indicates the likelihood of a significant relationship between the two variables, as reflected by the corresponding p-value (Walker & Maddan, 2020). These values are displayed below in Table 2.

Table 2 Chi-Square

	No Info	Gender	Sex	Changeable	χ^2
Journal					127.449***
Criminology	29.6% (8)	10.7% (6)	32.4% (69)	36.3% (98)	
JRCDD	14.8% (4)	5.4% (3)	40.8% (87)	27.8% (75)	
R&J	33.3% (9)	16.1% (9)	17.4% (37)	22.6% (61)	
Feminist Criminology	22.2% (6)	67.9% (38)	9.4% (20)	13.3% (36)	
Year of Publication					2.512
2011-2015	55.6% (15)	39.3% (22)	44.1% (94)	47.4% (128)	
2016-2020	44.4% (12)	60.7% (34)	55.9% (119)	52.6% (142)	
Study Type					201.952***
Quantitative	55.6% (15)	10.7% (6)	86.9% (185)	87.8% (237)	
Qualitative	40.7% (11)	76.8% (43)	9.9% (21)	6.7% (18)	
Mixed	3.7% (1)	12.5% (7)	3.3% (7)	5.6% (15)	
Gender of Author Team					74.891***
All male	33.3% (9)	10.7% (6)	35.2% (75)	27.0% (73)	
All female	33.3% (9)	71.4% (40)	19.2% (41)	20.7% (56)	
Mixed	33.3% (9)	17.9% (10)	45.5% (97)	52.2% (141)	
Gender as Control Variable					55.488***
No	33.3% (9)	67.9% (38)	18.3% (39)	25.9% (70)	
Yes	66.7% (18)	32.1% (18)	81.7% (39)	74.1% (200)	
Gender as Independent Variable					22.508***
No	59.3% (16)	41.1% (23)	74.2% (158)	66.3% (179)	
Yes	40.7% (11)	58.9% (33)	25.8% (55)	33.7% (91)	

*Note: *** = p<.001, ** = p<.01, * = p<.05; Sex=sex assigned at birth; Changeable=Interchangeably*

The Chi-square analyses revealed several significant relationships between the included variables and quality gender measurements. First, measurements differed significantly depending on the publication outlet. For example, a vast majority of the articles that measured gender came from *Feminist Criminology*, as shown in Table 2. Specifically, 67.9% of the articles that contained inclusive or multidimensional gender measurements or included gender as a major theme of exploration in the case of qualitative studies were published in *Feminist Criminology*. On the other hand, only 10.7% of the ‘gender’ articles came from *Criminology* and 5.4% from *JRCD*. Despite being a specialty journal and having a stated interest in gender, only 16.1% of articles with quality gender measurements were published in *R&J*, though this number is still larger than the two more mainstream journals.

The highest percentages of articles that measured only sex assigned at birth or used gender and sex assigned at birth interchangeably came from *Criminology* and *JRCD*. In fact, only 9.4% of the articles that measured sex assigned at birth had been published in *Feminist Criminology* and 17.4% by *R&J*, whereas 32.4% were from *Criminology* and 40.7% were from *JRCD*, though it should be noted that the variation in percentages between journals was much smaller for articles that measured gender and sex assigned at birth interchangeably. Specifically, 36.3% of the articles coded as ‘interchangeably’ were from *Criminology*, 27.8% were from *JRCD*, 22.6% were from *R&J*, and 13.3% were from *Feminist Criminology*, suggesting that there is still a need overall for more quality gender measurements.

The percentage of articles which accurately measured gender varied significantly between the types of study as well. Only 10.7% (6 articles) of the articles in the sample that included quality gender measurements were quantitative studies, whereas 76.8% were qualitative articles which explored gendered patterns and themes. Even when gender was not necessarily the

focus of study, many qualitative articles uncovered patterns related to the concept. For instance, one of the major themes found in an article examining the experiences of victims in a Latino sex trafficking ring was the intersection of gender, race, and class (Sabon, 2018). Of the ‘gender’ articles, 12.5% were mixed methods studies, which is still slightly higher than the percentage for quantitative studies. Similarly, 87.8% of the articles that used gender and sex assigned at birth interchangeably were quantitative studies while only 6.7% of them were qualitative studies and an even smaller percentage (5.6%) of the ‘interchangeably’ articles were mixed methods. Following a similar trend, 86.9% of the articles that measured sex assigned at birth were quantitative in nature while only 9.9% of them were qualitative.

As Table 2 displays, the gender of the author team also displayed a significant relationship with the way that gender is measured. A greater proportion of the articles with quality gender measurements were published by all female author teams (71.4%) in comparison to all male author teams (10.7%) and mixed gender author teams (17.9%). Similarly, all male author teams (35.2%) and mixed gender author teams (45.5%) published a larger proportion of the articles that only measured sex assigned at birth compared to all female teams (19.2%). Of the articles that used gender and sex assigned at birth interchangeably, the percentage that were published by all male teams (27.0%) and all female teams (20.7%) was quite similar. However, the largest percentage of the ‘interchangeably’ articles were published by mixed gender teams (52.2%).

The last two variables used in analysis related to whether gender was included as a control variable or as an independent variable. Both exhibited a significant relationship with the quality of the gender measurement, as seen in Table 2. First, 66.7% of the articles that contained no discernible information about how gender was measured also used gender as a control

variable. Of the articles that *did* measure gender in an inclusive or multidimensional manner, 67.9% did not use gender as a control variable. This result is in comparison to the 32.1% of the ‘gender’ articles that did include gender as a control variable, again exemplifying that a lack of focus on gender as a main variable of interest potentially leads to lesser-quality operationalizations. To further support this conclusion, most of the articles that only measured sex assigned at birth (81.7%), and the articles that used gender and sex assigned at birth interchangeably (74.1%) included the variable as a control only.

Though the differences are not as stark, the analysis of the gender measurement in relation to its inclusion as an independent variable revealed a statistically significant relationship between the variables. More of the articles that measured gender adequately used the concept as an independent variable (58.9%). Moreover, the percentage of articles that only measured sex assigned at birth or used gender and sex assigned at birth interchangeably was much higher in the articles that did not use the concept as an independent variable. Specifically, 74.2% of the articles that only measured sex assigned at birth and 66.3% of the articles that used gender and sex assigned at birth did not use gender as an independent variable.

CHAPTER V

DISCUSSION

The current study contributes to the existing literature regarding the study of gender in criminology by examining the quality of gender measurements in criminological studies. In particular, the current study uses a framework based in gender theory as well as established inclusive and complex measurements from other fields to assess the adequacy of the gender operationalizations used in criminology. Articles that included gender or sex assigned at birth as a variable and were published between 2011 and 2020 from two major criminal justice journals and two specialty journals were used to determine the overall frequency of quality gender measurements in the field. Additionally, several other factors were coded to analyze their potential relationship with the inclusion of quality gender measurements in articles such as the gender of the author team and the type of study being used. Overall, the results of this study support the conclusion of previous literature that gender is by and large not being measured appropriately or in an inclusive manner in the field.

While the field has performatively made bounds towards inclusivity through its increased analyses of gender and use of women in samples, criminological research still fails to account for nuanced social processes related to gendered experiences (Belknap, 2007; Cook, 2016). The findings of this study support this sentiment, with most of the articles (90.1%) in the sample not containing quality gender measurements. Interestingly, this study found no significant

relationship between year of publication and the inclusion of quality gender measurements. Though the included articles only span about a decade's worth of publications, this finding points to the field having made little progress in gender inclusivity over time, ignoring ongoing developments in gender theory and calls for representation of gender minorities. The findings of this study also show that criminologists continue to use sex assigned at birth and gender interchangeably (47.7% of articles), despite the fact that science recognizes the two as separate concepts (Anderson & Fine, 2017; Fausto-Sterling, 2012; Gentile, 1993). This practice effectively removes the experiences of gender and sex minorities from analyses. Previous studies have called attention to the overuse of binary measurements for gender and sex assigned at birth in criminology (Crittenden et al., 2022; Valcore & Pfeffer, 2018). Binary measurements not only lead to the incorrect conflation of gender and sex assigned at birth but are also not representative of individuals with nonbinary identities. Additionally, researchers are barred from obtaining accurate data regarding participants' gender, leading to misrepresented results (Tate et al., 2013). Though not explicitly measured in this study, articles were coded as measuring gender and sex assigned at birth interchangeably when using binary or otherwise non-inclusive operationalizations. Therefore, this study suggests that criminology often uses non-exhaustive measurements and research methodologies that are not thorough.

The integration of gender into criminological research is often limited to a control variable (Crittenden et al., 2022; Valcore & Pfeffer, 2018). Similarly, 74.1% of the sample in this study utilized gender as a control variable, in comparison to the 20.3% that used it as an independent variable. Again, criminologists have attempted to progress in gender inclusivity, but the field still exhibits a lack of focus and true interest in understanding more complex notions of gender. This notion is further supported by the fact that most of the articles which accurately

measured gender did not measure it as a control variable, yet those that measured gender and sex assigned at birth interchangeably did. In other words, when authors used inclusive or more complex measures of gender, the concept was also used more often as a primary variable of interest rather than simply as a control. Notably, 66.7% of the articles that contained no discernible information about how gender was measured also used gender as a control variable. Like several of the other findings, this points to a perception of gender not playing an incremental role in criminological studies, and therefore not worth even detailing its specific measurement.

Gender theorists in other fields have made notable arguments for the careful consideration of gender and its purpose in research (Ansara & Hegarty, 2014; Cameron & Stinson, 2019; Lindqvist et al., 2021). Similar to the use of other variables, researchers should rationalize their chosen operationalization of gender. This study suggests that doing so may encourage more quality measurements that are based in gender theory and representative of all identities, because most of the articles that did so used gender as an independent variable and not as a control. It may be that those who focus on gender as a primary variable are already conscious of the important role it can play in research. As a result, these researchers may be creating their own unique measurements aimed at exploring gendered patterns or paying close attention to gendered themes in qualitative studies.

One of the topics this study aimed to explore was the relationship between the type of study and the resulting quality of gender measurement. Qualitative methods are often preferred by researchers who want to explore extremely nuanced concepts (Rennison & Hart, 2022). Given the fact that gender is a social construct that is contextual, fluid, and multifaceted (Butler, 1990; Lorber, 1994; Lucal, 1999; Short et al., 2013; West & Zimmerman, 1987), qualitative methods

may be superior to quantitative methods in truly measuring the concept. The findings of this study support this conclusion: a vast majority of the articles that measured gender were qualitative articles (76.8%). On the same note, most of the articles that measured sex assigned at birth and gender interchangeably utilized quantitative methods. The use of qualitative methods like focus groups and interviews may make it easier for researchers to capture gender in action without necessarily having to create incredibly complex operationalizations. However, other fields such as psychology have already created and started using gender measures that can be integrated into quantitative studies. These include categorical variables that are open-ended, non-binary options, and separate sex assigned at birth from gender through the use of at least two different questions (Bauer et al., 2017; Cameron & Stinson, 2019; Tate et al., 2013; Westbrook & Saperstein, 2015), or multidimensional measurements that include several facets based in gender theory (Ansara & Hegarty, 2014; Joel et al., 2014; Lindqvist et al., 2021; Tate et al., 2014). Evidence shows that criminology uses quantitative methods more often than qualitative ones (Copes et al., 2020; Tewksbury et al., 2012). With this fact in mind, it is even more essential for criminologists to adopt more inclusive and quality measurements for gender because of the field's prioritization of quantitative research.

Criminology's interest in research that does not necessarily accurately capture gender extends to its publication patterns. Eigenberg and Whalley (2015) found that women are more likely to publish with other women in specialty journals from a feminist perspective, whereas mixed gender author teams and all-male author teams are published more often in mainstream journals. Additionally, gender is most often studied by women in feminist journals (Eigenberg & Whalley, 2015). To further these findings, the results from the current study suggest that gender is also more adequately measured by all female teams (71.4%), presumably within specialty

journals given the previous literature. Likewise, most of the articles with quality gender measurements were published in *Feminist Criminology*. Altogether, these results paint a picture of articles that focus on gender and contain more quality measurements being subverted to gender-based specialty journals. While this may make some logical sense given the aims of feminist-based research, the lack of publications related to gender on a complex level within mainstream journals only furthers hetero-normativity and cisgenderism in the field. It also reflects a lack of care on the part of criminologists for truly understanding gendered patterns and how they impact criminal behavior and experiences in the system.

CHAPTER VI

CONCLUSION

According to gender theory, gender is a socially constructed performance that is dependent upon the overarching context in which it takes place (Butler, 1990; Lorber, 1994; Lucal, 1999; Short et al., 2013; West & Zimmerman, 1987). In terms of crime and criminology, this means that gender has an important role in explaining patterns of offending, victimization, recidivism, sentencing, rehabilitation, and other important areas of study because of its impact on social behavior. Moreover, gender theorists do not deny the part that biology plays in creating gendered concepts and perceptions (Fausto-Sterling, 2005; Short et al., 2013). Therefore, this study does not completely dismiss the ability of research that uses measures of sex assigned at birth or that allude to sex assigned at birth to uncover *some* gendered patterns. In truth, criminology has uncovered important findings such as the ‘gender gap in crime’ (Campaniello & Gavrilova, 2018), gendered rates of intimate partner violence and sexual victimization (McKinley, 2023), the need for ‘gender-responsive’ services in corrections (DeHart, 2018; DeHart et al., 2013; McKee & Hilton, 2017), and gendered sentencing disparities (Doerner, 2012). Yet, research in these areas has shown to be quite mixed at times. Explanations lack concrete theoretical foundations, as exemplified by the variation in findings of studies that analyze leniency given to women in criminal cases (Crawford & Bradley, 2016; Doerner, 2012; Fernando Rodriguez et al., 2006; Freiburger & Sheeran, 2020; Middel et al., 2022; Scourfield, 2001). Furthermore, interpretations of results and criminological consensus tends to reflect gender

stereotypes and focus simply on differences between men and women (Cook, 2016). While these are one facet of many which make up the concept of gender (Butler, 1990; Lindqvist et al., 2021; Lucal, 1999; Morgenroth & Ryan, 2018; Short et al., 2013; West & Zimmerman, 1987), criminologists need to acknowledge the potential impact that bias and predispositions have on interpreting findings. Moreover, there are many within-group disparities that remain hidden when using traditional measurements. As mentioned previously, Clinkinbeard et al. (2020) found in their study that self-concepts of masculinity were important to both males and females, and that perceived levels of masculinity corresponded with aspirations for policing. In other words, males and females who felt themselves to have higher levels of masculinity actually had more in common with one another than they did with other members of their sex assigned at birth group (Clinkinbeard et al., 2020).

Progress in gender inclusivity is a constant endeavor that has the double-sided benefit of reducing sexism, hetero-normativity, and cisgenderism in the field while also improving research methodology. Measurements that conflate sex assigned at birth and gender are unethical in that they risk causing psychological harm to non-binary and transgender individuals (Ansara & Hegarty, 2014; Frohard-Dourlent et al., 2017; Westbrook & Saperstein, 2015). At the same time, results are misrepresentative if the measurements used are non-exhaustive (Rennison & Hart, 2022; Tate et al., 2013). As already stated, research shows that gender impacts the specific needs of individuals in the system (DeHart, 2018; DeHart et al., 2013; McKee & Hilton, 2017), but most of this research does not include nonbinary and transgender identities. A limited amount of exploratory research has found that nonbinary and transgender individuals face unique obstacles in accessing housing, rehabilitation services, and healthcare while in the system, which exemplifies the need for further research that uses adequate measurements to create and update

policies for these populations (Buist & Stone, 2014; Grant et al., 2011). Given the serious nature of many of the topics in the field, criminologists have a responsibility to do good research, which includes the use of gender measurements that are representative of developments in gender theory and free of prejudice and discrimination.

Since the current study contributes to the field by examining the overall limitations in criminological and criminal justice research, it must be acknowledged that this study itself is not free of its own limitations. As with any qualitative study, specifically those utilizing content analysis, interpretations are often subjective and vulnerable to the biases of the researcher (Kraska et al., 2020; Rennison & Hart, 2022). For the quality of gender measurements in particular, the current study used the analysis and interpretation of only one researcher. To increase reliability and validity, the use of multiple coders for interpreting the quality of gender measurements could have been beneficial in creating a more well-founded dataset. This limitation highlights a need for further research into the way gender is treated by criminological studies as the findings of the current study should be replicated for a more concrete conclusion. Furthermore, content analysis and chi-square analyses cannot be used to infer causal relationships between variables (Kraska et al., 2020; Walker & Maddan, 2020). Therefore, it cannot be stated that any of the included variables do or do not lead to more quality measurements of gender. Similarly, the current study primarily examined information located in the methodology and relevant data tables. Only in qualitative articles did the researcher venture to analyze the full findings and discussion of the included articles. To understand how quality gender measurements lead to improved findings and interpretations, future research would benefit from a more complex examination of the way gender is measured and the corresponding

findings of each article. Such research might offer more definitive proof that improved operationalizations of gender create better research.

The data and sample used for the current study also create limitations related to generalizability. Only four CCJ journals were used to garner publications for analysis. Additionally, the sample was limited to articles that included gender or sex assigned at birth as a variable, resulting in a relatively small sample size of 566 articles. As such, it is invalid to assume the results of the current study are representative of all criminological research. This finding, again, proves a necessity for further research that can replicate these findings in other journals and among a larger number of articles.

Lastly, the technique used to measure the gender of the author team is somewhat flawed. Specifically, pronouns located in the author biographies of articles were used to interpret the gender of the authors. As such, some data may be lacking because not all authors make mention of pronouns or other gendered language in their biographies. Additionally, the measurement is non-exhaustive and unable to account for nonbinary or transgender identities. While this is due in part to the availability of relevant content, future research would benefit by creating better techniques for discerning author gender if possible.

Although the current study is not free of limitations, the findings build upon research related to the overall level of gender inclusivity in criminology and criminal justice. It is notable that a vast majority (90.1%) of the articles in this study did not have adequate gender measurements or did not attempt to measure gender outside of sex assigned at birth. Criminologists continue to conflate sex assigned at birth with gender and utilize mostly binary, overly simplistic measurements for the concept. This phenomenon is perhaps related to criminologists' lack of focus on the topic, as exemplified by gender's inclusion as a control

variable in most studies and the diversion of articles focused on the topic into gender-based specialty journals. Whether a product of rampant and persistent sexism, hetero-normativity, and cisgenderism, or simply of non-thorough research methods, the use of inadequate and outdated gender measurements has lasting impacts on criminal justice policy and practice. Calls have been repeatedly made for gender inclusivity and progress within the realm of criminology, but as shown within this study, they appear to have not been answered. As such, it is up to future research to acknowledge this limitation and take the necessary steps to correct it.

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VITA

Jadon Clark was born in Chattanooga, Tennessee to Jessica and Jeremy Clark. She is the oldest of two children, with a younger brother named J.P. Following her graduation from Dalton High School in 2018, Jadon attended the University of Tennessee at Knoxville in pursuit of a degree in journalism. During this time, she became interested in researching and writing about criminal justice issues. The following year, she decided to transfer to the University of Tennessee at Chattanooga and soon after obtained her Bachelor of Science in Criminal Justice in the Fall of 2021. In Spring of the next year, Jadon enrolled in the Criminal Justice Master's program at UTC and began working as a graduate assistant which allowed her to take part in research, assist in conducting online and face-to-face courses, and instruct an Introduction to Criminal Justice course for undergraduate students. Following her graduation in Fall of 2023, Jadon looks forward to starting her new position as a Probation Officer Assistant with the U.S. Probation Office in Chattanooga.