

A Fundamental Cause Approach to Intimate Partner Violence in Marginalized Populations

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PREFACE

I acknowledge that the University of Michigan resides on the traditional Territories of the Three Fire Peoples- the Ojibwe, Odawa, and Bodewadmi. I acknowledge the real ways in which the State of Michigan, the University of Michigan, and residents of this Land have benefitted from the forced and systematic removal of Indigenous peoples from their ancestral lands.

I affirm the knowledge that colonialism did not end with the era of forced removal, and state-sponsored violence against Native peoples continues in real and insidious ways. The ongoing effects of colonialization disrupts Indigenous communities' struggles for self-determination and sustains the colonial-state violence against American Indian, Alaska Native, and Native Hawai'ian communities that continues to negatively affect our society.

I understand that offering this Land Acknowledgement does not absolve my own settler-colonial privileges, nor does it diminish the colonial structures of violence at the institutional level. I recognize that Land Acknowledgements must be preceded and followed by ongoing and unwavering commitments to Indigenous communities. I affirm that the University of Michigan must support Indigenous communities and nations through active recruitment of Indigenous faculty, students, staff, and the funding of Indigenous-centered research. I recognize, support, and vow to continually educate myself and those around me in an effort to make structural change that moves toward reconciliation with Michigan's First Nations as well as with Indigenous communities throughout Turtle Island and across the Fourth World.

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ABSTRACT

Intimate Partner Violence (IPV) is a serious public health concern that transcends partnership types and societies, affecting approximately one-third of women worldwide. Men in same-sex relationships likely experience violence at similar rates. This dissertation takes a fundamental cause approach to social-ecological and minority stress theories, arguing that structural forces are the root causes of violence in two target populations: women residing in low- and middle-income countries (LMIC) and Indigenous men who have sex with men (MSM) in the United States. Consisting of eight chapters, four of which are empirical studies, this body of work creates new knowledge surrounding how social scripts, environments of stigma, and contexts of inequality shape the risk for IPV in marginalized populations.

Chapter 4 uses the Demographic and Health Surveys (DHS) fieldworker dataset to test for interviewer bias in the DHS Domestic Violence Module. Multilevel modeling was used to test associations between three types of IPV and socio-demographic interviewer characteristics. Previous experience as a DHS interviewer was associated with significantly lower odds (aOR: 0.67) of reporting physical IPV. In addition to highlighting a potential source of bias, this paper argues for the expanded use of the fieldworker survey to control for potential interviewer bias in the DHS.

Chapter 5 studies how individual deviation from community norms shapes the risk for sexual IPV in 32 low- and middle-income countries (LMIC). Using a positive deviance approach, this analysis seeks to better understand how transcending community norms alters the

risk for violence, and how this relationship changes across six structural contexts fundamental to IPV. Positive deviance is associated with both increased and decreased odds of reporting sexual IPV and the nature of these relationships vary by structural environment. Lessons from this paper may highlight pathways for future interventions to change restrictive social scripts and increase women's social capital while avoiding an unintended increase in violence.

Chapter 6 represents the first nationwide study of IPV in Indigenous MSM, a population experiencing multiple structural vulnerabilities. A 30-minute online survey consisting of instruments previously validated in LGBT or Indigenous communities was targeted to Indigenous MSM using social media algorithms. Logistic regression models were fit to calculate adjusted associations between race- and sexuality-based structural stressors, theory-derived points of resiliency, and lifetime experience of physical, sexual, and emotional IPV. Results suggest that Indigenous MSM experience high levels of IPV, and that structural stressors play a significant role as antecedents of violence

Chapter 7 uses a birth cohort analysis of 25 Demographic and Health Surveys (DHS) to examine whether the socio-political environments in which a woman forms her attitudes around IPV influences its reporting, and whether this cohort effect varies by rate of decline in gender inequality. Results suggest a birth cohort effect is present in physical IPV, sexual IPV, and the justification of IPV across the 25 countries, with women reporting less IPV with each successive cohort. This effect wanes as the rate of gender inequality decline slows. Chapter 8 provides summary, conclusions, and recommendations for future work to mitigate and prevent IPV in LMIC women and Indigenous MSM

Chapter 1: Introduction

Outline: Intimate Partner Violence (IPV) is a pervasive public health concern that occurs across all societies, cultures, and partnership types (Stephenson, Khosropour, & Sullivan, 2010; World Health Organization, 2012; World Health Organization, 2013). Comprised of physical, sexual, and emotional violence, as well as controlling behaviors, IPV is rooted in the dynamics of power and control within relationships (Krug, 2002; World Health Organization, 2013; World Health Organization/ London School of Hygiene and Tropical Medicine, 2010). Worldwide, approximately one-third of women will experience physical or sexual violence from a male partner in their lifetimes (World Health Organization, 2013). While the burden of IPV globally is borne by women in male-female partnerships (World Health Organization & London School of Hygiene and Tropical Medicine, 2010; World Health Organization, 2017), emerging evidence suggests people in same-sex relationships (Hall, Goldenberg, Andes, Finneran, & Stephenson, 2017; Mustanski, Andrews, & Puckett, 2016; Stephenson, Sato, & Finneran, 2013) and transgender persons (Bunger, Steensma, Cohen-Kettenis, & de Vries, 2017; Rodríguez-Madera et al., 2017; L. R. Smith et al., 2017) experience IPV at rates at least as high as those of women in male-female partnerships.

Experiencing IPV leads to negative physical health consequences such as physiological trauma, reduced immune system functioning, and sexually-transmitted infections, including HIV (J. Campbell, 2002; J. Campbell et al., 2002; Epel et al., 2004; Weiss et al., 2008a; Woods et al., 2005), negative mental health consequences such as anxiety, depression, and post-traumatic stress disorder (J. Campbell, 2002; Warshaw, Brashler, & Gil, 2009; World Health Organization, 2013), adverse maternal and child health outcomes including premature birth (J. Campbell et al., 2002; Coker, Smith, Bethea, King, & McKeown, 2000; Plichta, 2004; World Health Organization, 2013), low birthweight (J. Campbell, 2002; J. Campbell et al., 2002; World Health Organization, 2013), and underutilization of prenatal care (Metheny & Stephenson, 2017b; World Health Organization, 2013), as well as adverse stress-response behaviors such as increased sexual risk-taking and substance misuse (Decker et al., 2014; Duncan et al., 2016; Silverman, Raj, Mucci, & Hathaway, 2001; Stults, Javdani, Greenbaum, Kapadia, & Halkitis, 2015; World Health Organization, 2013). The negative health outcomes resulting from exposure to violence make mitigating and preventing IPV one of the most pressing global health concerns. The World Health Organization recognizes the importance of the elimination of IPV and holds it as one of the Global Goals (target 5.2) (World Health Organization, 2015).

Social-ecological theory suggests that factors at all levels of a person's environment are associated with experiencing IPV (Bronfenbrenner, 1979; L. L. Heise, 1998). These include individual (i.e. pregnancy state (J. Campbell, Garcia-Moreno, & Sharps, 2004; Kiely, El-Mohandes, El-Khorazaty, & Gantz, 2010; Yoshikawa, Agrawal, Poudel, & Jimba, 2012), interpersonal (i.e. financial stress/poverty (World Health Organization, 2013), and community-level effects (i.e. social scripts (Beyer, Wallis, & Hamberger, 2015). However, fundamental cause theory (Hatzenbuehler, Phelan, & Link, 2013) posits that factors at the structural level are

foundational to all others because they 1) biologically alter the risk for IPV itself (DuBois, Powers, Everett, & Juster, 2017; Han & Stewart, 2014a; Inslicht et al., 2006; Pico-Alfonso, Garcia-Linares, Celda-Navarro, Herbert, & Martinez, 2004; Pinto, Correia-Santos, Costa-Leite, Levendosky, & Jongenelen, 2016); 2) impact access to resources (e.g. knowledge, financial means, social support) that can be used to avoid or mitigate other risk factors (Meiksin, Meekers, Thompson, Hagopian, & Mercer, 2015a; World Health Organization, 2013; World Health Organization/ London School of Hygiene and Tropical Medicine, 2010); and 3) promulgate health inequities across time and space (Franklin & Kercher, 2012; Kerley, Xu, Sirisunyaluck, & Alley, 2010; Mandal & Hindin, 2015). Taking a fundamental cause approach, this dissertation focuses on how macrosocial forces such as sexuality-based stigma (Hatzenbuehler et al., 2013), gender inequity, and the justification of violence (Jewkes, 2002; World Health Organization, 2013) are associated with IPV, arguing that intervening at this level is the most effective way to reduce its incidence.

Structure of the Dissertation: This dissertation focuses specifically on violence in two contexts: women in male-female relationships who reside in low-and middle-income countries (LMIC) and American Indian/Native American, Alaska Native, and Native Hawai'ian (hereafter referred to collectively as Indigenous) men who have sex with men (MSM) who reside in the United States. These populations were chosen because they experience multiple structural stressors, such as poverty, racism, historical trauma, gender inequality, and the normalization of violence, that compound to increase the prevalence of IPV (Pantalone, Schneider, Valentine, & Simoni, 2012; Simoni, Walters, Balsam, & Meyers, 2006; Stöckl et al., 2013; Walters, Horwath, & Simoni, 2001; World Health Organization, 2013; World Health Organization, 2016). This chapter serves as an introduction to the topic and the specific aims of the dissertation. The

second chapter consists of a review and critique of the current IPV literature in the populations of interest, concentrating on its epidemiology, correlates, and pathways to associations with specific health outcomes. It also includes current methodological challenges and gaps in the literature that the proceeding chapters aim to address. The third chapter reviews theoretical approaches to the study of IPV in these populations. Alternate theories are considered and social ecological theory (Bronfenbrenner, 1979; L. L. Heise, 1998) is used to ground the studies contained within the dissertation, revisiting the central theme of this body of work- that structural-level factors are the fundamental causes of IPV. In addition to social-ecological theory, minority stress theory (Meyer, 1995; Meyer, 2003) is used to understand the structural-level antecedents of violence in male couples that are different to those driving IPV in LMIC women. Chapters Four to Eight comprise four independently publishable units, each addressing the structural level of the social-ecological model as well as how macrosocial forces interact with other levels of the environment. These units work outward from the individual level and are thus ordered in a way that follows an adapted version of Heise's (1998) social-ecological model (see Figure 1). The specific aims of the studies contained within this dissertation are summarized below.

Specific Aims: The overall objective of this dissertation is to demonstrate the fundamental nature of the structural drivers of IPV in two marginalized populations. While the literature has begun to acknowledge the multilevel nature of this phenomenon (Beyer et al., 2015; Finneran & Stephenson, 2014a; Franklin & Kercher, 2012; Freeland, Goldenberg, & Stephenson, 2016; Hatcher et al., 2013a; Jesmin, 2015; A. Taft & Small, 2014), there is insufficient empirical evidence to support the theoretical primacy of higher-order factors (Hatzenbuehler et al., 2013; Link & Phelan, 2001). Through four independently publishable

units, this body of work aims to bolster the existing empirical evidence and provide support for future studies that intervene primarily at the structural level to reduce the incidence of IPV.

Specific Aim/Study 1: The first study examines how cultural and demographic differences between Zimbabwean women and their survey enumerator are associated with the reporting of IPV. This study considers factors that are more proximal to the individual, analyzing how interpersonal differences between respondent and enumerator might be connected to structural drivers.

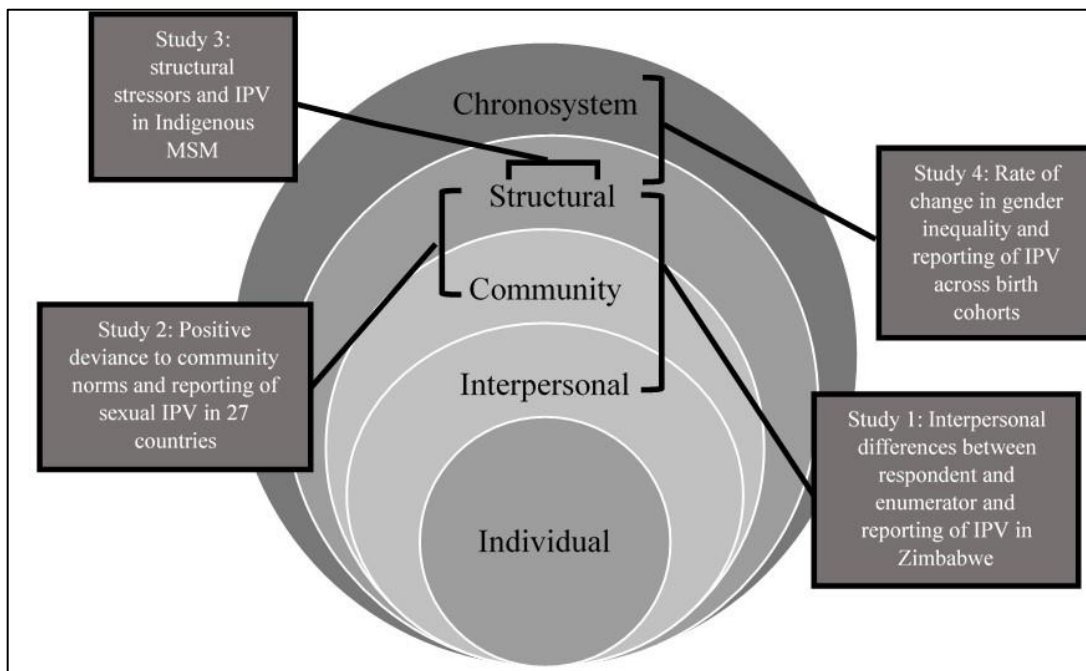
Specific Aim/Study 2: The second study examines positive deviance to community norms and the risk for sexual IPV across 27 LMIC. These relationships are modeled across six structural contexts, showing how the relationship between positive deviance and sexual IPV may change based on levels of gender inequality and the extent to which violence is normalized.

Specific Aim/Study 3: This study is the result of a primary data collection effort studying the relationship between structural stressors such as racism, homophobia, and historical trauma and the reporting of IPV among a sample (n=186) of Indigenous MSM in the United States.

Specific Aim/Study 4: The fourth study is a birth cohort analysis of women in 40 LMIC that aims to understand how a country's change in gender inequality over the past 20 years is associated with IPV across women born in different social-ecological environments. This study connects the two outermost layers of the social-ecological model.

The last chapter summarizes the four publishable units and draws collective conclusions. It also reiterates the contribution of these studies to nursing science and offers potential next steps in this line of inquiry.

Figure 1: Concept Map of Dissertation Studies Overlaid onto Social-Ecological Model



Innovation: The four studies contained within this dissertation expand the evidence base for studying IPV in marginalized populations in innovative ways. Studies one, two, and four are secondary analyses of the Demographic and Health Surveys (DHS), a comprehensive set of publicly-available data across more than 40 LMIC (ICF International, 2017b). Study one is the first to show that interviewer error may exist in the DHS and highlights how community and structural norms (i.e. those surrounding language, ethnicity, and social scripts for women) may shape the data upon which most of global health demography depends. It also suggests potential ways to improve the methodology of future studies using this important source of secondary data. Study two is the first to employ the concept of positive deviance to study IPV and is a novel approach to examining how the relationship between community norms and IPV may be shaped by macrosocial forces. The final study uses the DHS to study temporal dimensions of IPV, suggesting that correlates may change over time. This study aims to expand the conversation of

how best to mitigate violence in LMIC to considering both space and time, recognizing that community and structural norms are fluid across both these dimensions. Specific Aim/study three is a primary data collection effort that represents one of the first forays into a largely unstudied population (Indigenous MSM) that is highly stigmatized within the United States and experiences a multiplicity of structural stressors (Balsam, Huang, Fieland, Simoni, & Walters, 2004; Ristock, Zoccole, Passante, & Potskin, 2017; Simoni et al., 2006). It aims to provide a foundation on which to build future work with this population. The studies contained in this dissertation provide the methodological and theoretical basis for a well-rounded and robust understanding of the complex phenomenon of IPV in marginalized populations.

Relevance to Nursing Science: The importance of this dissertation to the expansion of Nursing Science is grounded in the metaparadigm of nursing. At its core, nursing's ontology consists of the person, environment, health, and nursing (Fawcett, 1984). Nursing research exists within and across each of these "encapsulating phenomena" (Fawcett, 1984), with the goal of nursing being the movement of individuals and communities towards an end-state of wellbeing (health). Nursing, therefore, is the process by which this positive movement is effected (Donaldson & Crowley, 1978). The metaparadigm of nursing requires that nurses work to maximize the wellbeing of individuals and communities, recognizing that 1) humans are in a constant state of interaction with their environments; and 2) marginalized communities require differential inputs from the majority community to achieve this wellbeing (Bowleg, Huang, Brooks, Black, & Burkholder, 2003; Fawcett, 1984; Seng, Lopez, Sperlich, Hamama, & Meldrum, 2012). The importance of a structural perspective to nursing was underscored by Nightingale in her environmental theory of nursing (Hegge, 2013). This theory, extracted from her personal writings, considers unjust social policies central to the imperilment of human health,

and challenging them as central to the ontology of nursing (Hegge, 2013). Nightingale specifically referred to gender inequality and colonialization as examples of unjust social policies that negatively influence human health (Hegge, 2013), drawing a direct line from the precursors of nursing's metaparadigm to the overarching theme of this body of work.

This dissertation aims to look holistically at IPV in two marginalized populations from a structural perspective. Guided by the metaparadigm of nursing and grounded in social-ecological thinking, this dissertation expands the field of nursing science by using innovative methods to examine how overlapping structural marginalities interact with other levels of the environment to alter the risk of IPV. Results of the publishable units contained within this body of work will provide new knowledge on how the structural landscape shapes IPV.

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Chapter 2: Intimate Partner Violence: A Review of the Literature

Introduction: This chapter provides an overview of the current state of the science regarding IPV in marginalized populations, specifically women in low- and middle-income countries (LMIC) and Indigenous men who have sex with men (MSM) in the United States. It first reviews the definitions of IPV and draws distinctions between IPV and other types of interpersonal violence. The scale of the burden of IPV globally and in the target populations is then discussed as are correlates of IPV as they correspond to the levels of Heise's (1998) Integrated Social-Ecological Model. The three main pathways through which IPV leads to negative health outcomes are summarized, along with specific health implications (World Health Organization, 2013). Throughout this chapter, gaps in the literature and methodological shortcomings of the current evidence base are highlighted in an effort to show how this dissertation addresses them.

Defining Intimate Partner Violence

What is Intimate Partner Violence?

Intimate Partner Violence is broadly defined by the World Health Organization as, “*any behavior within an intimate relationship that causes physical, psychological, or sexual harm to those in the relationship*” (World Health Organization, 2012, p. 1). The Centers for Disease Control and Prevention (CDC) and the National Institute of Justice (NIJ) go further in their definition, stating IPV can be perpetrated by a current *or former* intimate partner (Centers for

Disease Control and Prevention, 2016; National Institute of Justice, 2007). All three organizations define IPV as consisting of physical, sexual, or psychological violence, as well as controlling behaviors such as stalking (Centers for Disease Control and Prevention, 2016; National Institute of Justice, 2007; World Health Organization, 2012). The term ‘intimate partner’ is not exclusive to cohabitating couples, and does not require sexual intimacy (Centers for Disease Control and Prevention, 2016). Hence, IPV is defined as abuse perpetrated by one member of a dyad against another, though intimate partners most often include boyfriends, girlfriends, spouses, dating partners, or sex partners (Centers for Disease Control and Prevention, 2016; World Health Organization, 2012).

The exact definitions of what constitutes the four types of IPV (physical, sexual, psychological, and controlling behaviors) vary by organization and measurement tool. However, physical violence usually includes the use of physical force such as shoving, choking, shaking, slapping, punching, burning, or the use of weapons, strength, or body size with the potential to cause death, disability, injury, or physical harm (Centers for Disease Control and Prevention, 2016; National Institute of Justice, 2007; World Health Organization, 2012). Sexual violence is defined by the WHO as being “*physically forced to have sexual intercourse when you did not want to, having sexual intercourse because you were afraid of what your partner might do, and/or being forced to do something sexual that you found humiliating or degrading*” (World Health Organization, 2013, p.6). Other organizations’ definitions further divide sexual violence into categories:

- Rape or penetration- a completed or attempted act of intercourse against the victim, usually involving actual or threatened physical harm and including alcohol/drug-facilitated intercourse that is unwanted (Centers for Disease Control

and Prevention, 2016; National Institute of Justice, 2007). The act need not include physical pressure, however, and may be the result of verbal intimidation or misuse of authority (Centers for Disease Control and Prevention, 2016).

- Unwanted sexual contact: includes forced touching of the victim or perpetrator on the genitalia, anus, groin, breast, inner thigh, or buttocks without the victim's consent, and constitutes sexual violence regardless of whether or not it is a precursor to rape or attempted rape (Centers for Disease Control and Prevention, 2016; National Institute of Justice, 2007).

Psychological violence is defined broadly as verbal or non-verbal abuse wherein one member of the dyad that has the intent of harming the other member mentally or emotionally while simultaneously exerting control over that person (Centers for Disease Control and Prevention, 2016; National Institute of Justice, 2007). Examples of acts deemed psychological abuse include (but are not limited to) insults, belittling, constant humiliation, and intimidation, (World Health Organization, 2012). Threats to commit physical or sexual violence also constitute psychological violence and are considered IPV (Centers for Disease Control and Prevention, 2016; National Institute of Justice, 2007; World Health Organization, 2012). While controlling behaviors are often subsumed under the umbrella of psychological violence, they have distinct characteristics. Exerting psychological control over a partner's interactions with children, family, and friends, his/her financial transactions, and freedom of movement without specific threats or intimidation (e.g. through suspicion of infidelity or jealousy) can also be considered IPV (World Health Organization, 2013). Stalking, or the excessive monitoring of a current or former partner's whereabouts, is a form of controlling behavior and is shown to have distinct health implications. (Basile, Arias, Desai, & Thompson, 2004; Coleman, 1997; Edwards et al., 2015). However,

while it is undisputed that psychological violence and controlling behaviors are forms of IPV, there is currently a lack of agreement in the research community on the threshold at which unkind or insulting acts cross into being considered violence (World Health Organization, 2013). This ambiguity precludes psychological violence and controlling behavior from being included in many large, international studies (World Health Organization, 2013).

Terminology of Actors involved in IPV

While the word ‘perpetrator’ is almost universally used to describe the person enacting the violence in the context of IPV (World Health Organization, 2013), there is considerable controversy in the IPV community on the language used to describe the person on whom the violence is enacted. Some researchers in the field refer to this person as the “victim”, while others (and many feminist activists) feel this term connotes a helplessness or passivity that contributes to the trivialization of IPV in what is often a male-dominated discourse (L. Kelly, 2013). ‘Survivor’ is commonly used as an alternative to ‘victim’ when discussing those who experience IPV (Dunn, 2010). This term connotes personal strength and overcoming, as well as a sense moving forward from traumatic experiences and taking back control from the perpetrator (L. Kelly, 2013). It is for this reason that many people who experience IPV self-identify as ‘survivors’, and the advocacy literature often refers to them as such (Ghandour, Campbell, & Lloyd, 2015; Substance Abuse and Mental Health Services Association, 2016). However, because IPV is a crime in most jurisdictions, anyone who experiences it is legally considered a ‘victim’, and this term is used more often in policy and criminology literature (Benson, Fox, DeMaris, & Van Wyk, 2003; Coulter et al., 2017; Reuter, Newcomb, Whitton, & Mustanski, 2017). Further, standard definitions of IPV and other forms of interpersonal violence use the

term “victim” (Centers for Disease Control and Prevention, 2015; Garcia-Moreno, Jansen, Ellsberg, Heise, & Watts, 2005; Krug, 2002; World Health Organization, 2011; World Health Organization, 2012; World Health Organization, 2013; World Health Organization/ London School of Hygiene and Tropical Medicine, 2010).

These terms need not be mutually exclusive, and the agency for whichever term is used should be given to the person who experiences the violence. In research, both terms may apply, with context determining the more appropriate descriptor. For the sake of clarity, the term ‘victim’ will be used throughout this dissertation to refer to those who experience IPV.

How does IPV differ from other forms of Interpersonal Violence?

There are important distinctions between IPV and other forms of interpersonal violence, yet the terms “violence against women”, “gender-based violence”, “domestic violence”, and “battering” are all separate constructs with which IPV is sometimes mistakenly conflated. Each of these terms refer to different forms of interpersonal violence, and it is important to define exactly what is meant by intimate partner violence.

Violence Against Women

Violence against Women is an umbrella term that incorporates IPV as well as other types of violence enacted against women. Violence against Women is a manifestation of systemic gender inequality, leading to socially sanctioned discrimination of women by men (United Nations Entity for Gender Equality and the Empowerment of Women, 2012; World Health Organization, 2016). This overarching definition encompasses several discrete phenomena and includes violence enacted against both women and girls. The Declaration on the Elimination of Violence Against Women (DEVAW), an international treaty adopted by the United Nations in 1993, includes “*battering, sexual abuse of female children, dowry-related violence, marital rape,*

female genital mutilation [FGM] and other traditional practices harmful to women, non-intimate partner violence, and violence related to exploitation” as well as sexual harassment and workplace intimidation, educational discrimination, human trafficking, and forced prostitution as forms of Violence Against Women (United Nations Entity for Gender Equality and the Empowerment of Women, 1993; United Nations General Assembly, 1993). DEVAW also include state-sponsored violence targeted towards women (United Nations General Assembly, 1993). This broad definition has since been upheld by the 1995 Beijing Declaration and Platform for Action (United Nations, 1995) and the WHO (World Health Organization, 2016).

Gender-Based Violence

The Council of Europe Convention on preventing and combatting violence against women and domestic violence defines gender-based violence (GBV) as, “*violence that is directed against a woman because she is a woman or that affects women disproportionately*” (Council of Europe convention on preventing and combating violence against women and domestic violence, 2011), Article 3d). It is often used interchangeably with Violence Against Women since this form of violence is inherently gender-based (United Nations Population Fund, 2014). Since the global burden of gender-based violence is borne by women and the de facto heteronormative/cis-normative society in which these definitions are created, GBV has historically referred specifically to violence enacted against women by men (United Nations Entity for Gender Equality and the Empowerment of Women, 2012). However, gender is a socially constructed identity that attributes roles and scripts in a binary system attached to the biological sex assigned to a person at birth (Institute of Medicine, 2011; United Nations Population Fund, 2014; World Health Organization, 2016). Using this understanding of gender, the concept of gender-based violence is broadened to encompass violence towards any person

based on cultural expectations about the gender roles and scripts typically associated with a person's sex (United Nations Entity for Gender Equality and the Empowerment of Women, 2012). GBV may therefore include violence on the basis of fulfillment/non-fulfillment of proscribed gender roles or norms against any person. Through this lens, GBV includes not only violence against women, but also violence perpetrated against sexual and gender minorities, including gay men, lesbian women, and transgender, gender non-conforming, and gender-fluid individuals.

Domestic Violence

While the United States government still considers domestic violence and IPV interchangeable (Centers for Disease Control and Prevention, 2015; National Institute of Justice, 2007; United States Department of Health and Human Services, 2015), domestic violence is an umbrella term that includes any type of violence occurring among people residing in the same home. Using this wider definition, domestic violence can include child and elder abuse in addition to some types of IPV (World Health Organization, 2012). As an example, the phenomenon of intergenerational transfer of violence (discussed in detail later) refers to the correlation between experiencing or witnessing violence as a child and propensity to perpetrate or experience IPV as an adult (Caetano, Schafer, Clark, Cunradi, & Raspberry, 2000; J. C. Carroll, 1977; Franklin & Kercher, 2012; Kerley et al., 2010; Toro-Alfonso & Rodriguez-Madera, 2004). The experience of domestic violence-child abuse is therefore associated with domestic violence-IPV as an adult. Similarly, IPV need not be domestic violence. Stalking behavior, for example, is often perpetrated by former intimate partners who no longer (or never did) reside in the same home as the victim (Edwards et al., 2015).

Battering

A subset of IPV, battering refers to a recurrent, severe, and escalating form of IPV that is characterized by multiple forms of abuse in the presence of threats of violence and possessive, controlling behavior (Hegarty & Roberts, 1998; Krantz & Garcia-Moreno, 2005; Krug, 2002; World Health Organization, 2012). Early in the research of IPV, studies often referred to all women who experience IPV, especially those who experience physical IPV, as ‘battered women’ (Coker, Smith, McKeown & King, 2000; Craparo, Gori, Petruccelli, Cannella & Simonlli, 2015; Perez, Johnson & Wright, 2012), leading to some conflation of IPV and battering as well as confusion in later research. The term is most likely a vestige of the Battered Women’s Movement of the late 1980s and 1990s, which advocated for the first shelters for victims of abuse in the United States and helped pass the first federal law against IPV, the Violence Against Women Act (Indiana Coalition Against Domestic Violence, 2009). However, it is important to differentiate between battering and IPV in the literature so that the physical and mental health implications specific to battering as it is currently understood can be specifically explored and addressed.

How is IPV measured in Women and MSM?

There are several instruments commonly used to measure IPV, all of which use similar constructs and follow the general definition of IPV outlined above (see Table 1). This section is tailored to those measures used most often in the populations of interest (LMIC women and Indigenous MSM), with a brief overview of other common instruments. The most relevant instruments include the Conflict Tactics Scales (M. A. Straus, Hamby, Boney-McCoy, & Sugarman, 1996; M. A. Straus & Douglas, 2004), the WHO Violence Against Women Instrument (Garcia-Moreno et al., 2005; Garcia-Moreno, Jansen, Ellsberg, Heise, & Watts, 2006), and the IPV-GBM scale for gay and bisexual men (Stephenson & Finneran, 2013).

The Conflict Tactics Scales and Variants

The Conflict Tactics Scales (CTS) were the first major attempt to measure discrete forms of violence within the family and were specifically designed for husband-wife partnerships (Straus, 1979). The CTS operates using Straus' conflict theories, which stipulate that conflict is inevitable in any social group and that it is necessary to resolve conflicts of interest between members of said group (Adams, 1966; M. A. Straus, 1979). 'Conflict tactics' are therefore ways to resolve conflicts of interest, both in healthy (i.e. open communication) and unhealthy (i.e. violence) ways. The CTS originally included three domains of conflict tactics: Reasoning, Verbal Aggression, and (physical) Violence (M.A. Straus, 1979). The 19 items in the original CTS are factorial, lending themselves well to measuring not only IPV, but child abuse and other types of domestic violence by applying the same item stems to husbands, wives, and children (M. A. Straus, 1979). Each stem contains an action or 'conflict tactic' in statement form (i.e. "I yelled and/or insulted") along with a five-point frequency scale ranging from 0 (never) to 5 (more than once per month) (Straus, 1979). The CTS also repeats each item for victimization and perpetration of violence (i.e. "my wife yelled at/insulted me"), thereby assessing bidirectionality violence. The CTS quickly became the most common measure of IPV worldwide, with more than 100 publications citing it (DeKeseredy & Schwartz, 1998) from 20 countries it in its first two decades (M. A. Straus et al., 1996).

However, the first iteration of the CTS was critiqued for its measurement only of physical violence, its limited ability to ascertain the severity of the violent act, and its measurement of violent acts without context (DeKeseredy & Schwartz, 1998; R. P. Dobash, Dobash, Wilson, & Daly, 1992; Kimmel, 2002; Kurz, 1993; Marshall, 1992; M. A. Straus et al., 1996). This final point was especially divisive, with critics stating that the CTS disregards critical aspects of IPV

such as the intention, pattern of abuse, severity, and structural correlates of IPV such as social norms and patriarchy (Kimmel, 2002). In response to some of these critiques, a revised version of the CTS (CTS2) was published by Straus in 1996 (M. A. Straus et al., 1996). It adopted gender-neutral language, replacing “wife/husband” with “partner” and coded items as either exhibiting “minor” or “severe” violence. The CTS2 also expanded on the original measure by adding additional items to the physical violence and verbal aggression scales and renaming the latter “psychological aggression” in order to encompass the larger construct of psychological violence and reflect the evolving definition of IPV (M. A. Straus et al., 1996). It also reformatted the Reasoning scale and added items to measure a new construct- Negotiation. Two new scales were also included- sexual coercion and injuries sustained due to violence. This lengthened the CTS2 considerably, adding 20 additional items and making it a total of 78 items when including bidirectional questions, roughly doubling the time needed to administer it. However, the authors of the CTS2 did not agree with critiques that the measure should gather contextual information, stating instead that explanatory, context, and consequence variables should be measured alongside the CTS with different instruments altogether (M. A. Straus et al., 1996).

A shortened version of the CTS2 was published eight years later to address critiques that the CTS2 was onerous to both take and administer (M. A. Straus & Douglas, 2004). The CTS-Short contains the same scales and subscales as the CTS2 but contains only 20 items including bidirectional questions. It uses two questions from each of the existing scales, one from the items measuring severe abuse and one from the items measuring non-severe (“minor”) abuse (M. A. Straus & Douglas, 2004). However, questions were reworded to include more than one behavior from each class. For example, the physical violence perpetration question broadens the chosen “I beat up my partner” to “I punched or kicked or beat up my partner”. Though double-barreled

questions are usually avoided in survey methodology, asking about a single behavior to measure an entire construct would likely underestimate its prevalence (M. A. Straus & Douglas, 2004). In an attempt to address the critiques surrounding its lack of context and structural correlates, the questionnaire accompanying the CTS-Short includes items from the Personal and Relationships Profile Scale, which includes risk factors for IPV such as justification for IPV (M. A. Straus, Hamby, Boney-McCoy, & Sugarman, 1999; M. A. Straus & Mouradian, 1999). While the CTS and CTS2 provide the basis for most other assessments of IPV and have been used extensively in LMIC, their lack of consideration for the structural elements that underlie IPV make them insufficient for a fundamental cause approach to violence in marginalized populations.

The WHO Violence Against Women Instrument

Developed for the WHO Multi-Country Study on Domestic Violence, the Violence Against Women Instrument (VAWI) is based on the CTS2 and draws on its critiques (Garcia-Moreno et al., 2005; Garcia-Moreno et al., 2006; Nybergh, Taft, & Krantz, 2012; Nybergh, Taft, & Krantz, 2013). Measuring aspects of physical and sexual IPV, the VAWI was used successfully in the 10 countries sampled for the Multi-Country Study and has since been statistically validated in women in Brazil (Schraiber, do Rosário Dias O Latorre, M., França Jr, Segri, & Lucas D'Oliveira, 2010), Sweden (Nybergh et al., 2013), and Iran (Azadarmaki, Kassani, Menati, Hassanzadeh, & Menati, 2016). Unlike the CTS2, which uses the framework of conflict negotiation, the VAWI specifically frames the survey items in terms of the behaviors themselves. This addresses the fact that IPV is culturally viewed as discipline or punishment in many LMIC, and thus women in these settings may not view the behaviors as violence (Garcia-Moreno et al., 2006). The VAWI has been used extensively in research with women in LMIC (Ally et al., 2016; Bates, Schuler, Islam, & Islam, 2004a; Dunkle, Jewkes, Gray, McIntyre, &

Harlow, 2004; Dunkle et al., 2004; Jewkes, Dunkle, Nduna, & Shai, 2010a; Silove et al., 2016) and adapted for use in assessing perpetration of IPV in heterosexual men (Dunkle et al., 2006).

The IPV-GBM Scale

Until recently, the focus of IPV research on heterosexual couples required the limited research on same-sex couples to use either a modified version of the CTS2 (Balsam, Rothblum, & Beauchaine, 2005; Finneran & Stephenson, 2013; Greenwood et al., 2002; Pantalone et al., 2012; Stephenson, Rentsch, Salazar, & Sullivan, 2011) or questions designed by the researchers (Bimbi, Palmadessa, & Parsons, 2008; Friedman, Marshal, Stall, Cheong, & Wright, 2008; Koblin et al., 2006; Rhodes et al., 2010). A validation of the VAWI among a mixed sample of heterosexual and homosexual Swedish men found that this tool may be inappropriate for use with MSM without significant adaptation (Nybergh et al., 2012). While some researchers have used post-hoc modification of existing scales to be inclusive of same-sex couples (i.e. altering 'her' to 'him'), this may not be sufficient to capture the nuances of IPV in male-male relationships (Finneran & Stephenson, 2014a; Stephenson & Finneran, 2013). Further, because none of these methods were designed to be used with MSM, the accuracy of their measurement is questionable.

To address these limitations and more accurately assess IPV in male couples, Stephenson and colleagues created the Intimate Partner Violence in Gay and Bisexual Men (IPV-GBM) scale (Stephenson & Finneran, 2013). The IPV-GBM scale is currently the only scale created specifically to measure IPV among MSM and was validated in a diverse sample of American men (Stephenson & Finneran, 2013). It contains items regarding physical, sexual, and emotional IPV as well as controlling behavior, monitoring behavior, and HIV-related IPV. The latter three domains reflect the nuanced antecedents of violence in MSM as well as the disproportionate

burden of HIV in this population. By using a more targeted and nuanced definition of violence, the IPV-GBM scale measured a higher prevalence of IPV in a sample of gay and bisexual men in the United States than an adapted CTS2 and the CDC definition of IPV- one that is likely closer to the true prevalence of IPV in this population (Stephenson & Finneran, 2013).

Since its inception, the IPV-GBM scale has been used extensively, including in the largest study of male couples in the United States (Stephenson et al., 2017) as well as in diverse samples of men throughout the United States (e.g. Stephenson & Finneran, 2017a).

Critiques of CTS2, VAWI, and IPV-GBM Scale

The main instruments used in global health research, the CTS2 and the VAWI, both have serious critiques. While the CTS2 measures all four types of violence, the time it takes to administer it and its lack of consideration of the contextual factors that underlie IPV decrease its utility in LMIC. The decreased sensitivity of the CTS2 Short limits its use in research, and it may exacerbate underreporting for an already widely underreported issue. The inability of the VAWI to capture psychological violence or controlling behaviors is a serious drawback to its future utility in global health research. While it improves upon the physical and sexual violence portions of the CTS2, more research into how best to include other types of IPV is necessary to better assess IPV globally. Despite its limitations, the use of the VAWI in large, international research projects supports its continuation as the measurement of choice in LMIC settings (World Health Organization, 2016). Existing scales such as the Composite Abuse Scale (Hegarty, Bush, & Sheehan, 2005) and Measure of Wife Abuse (Rodenburg & Fantuzzo, 1993) have well-defined subscales with high internal consistency for each type of violence, and these could be used as frameworks for developing culturally sensitive measures of psychological abuse and controlling behaviors to expand the VAWI. Although developed expressly for, and tested

among, MSM, the IPV-GBM scale need not be limited to use with this population. Use of the IPV-GBM in populations of transgender youth (Stephenson, Metheny, Sharma, Sullivan, & Riley, 2017) and heterosexual women is currently underway, and could be expanded to include populations outside the United States. However, until the IPV-GBM scale is validated in additional populations or a more comprehensive measure can be developed for use with LMIC women, the VAWI remains the best instrument for measuring IPV among women in LMIC.

Critiques of the IPV-GBM scale are largely related to its limited use. Although it was statistically validated among a racially diverse sample of American MSM, this sample consisted largely of white and black men (Stephenson & Finneran, 2013), and there is little data on its use in other racial or ethnic minorities- including Indigenous MSM. While studies using the IPV-GBM scale in global settings (i.e. South Africa) are underway, more work needs to be done to ensure this measure is valid in MSM across contexts. Due to the paucity of research on Indigenous MSM in the United States overall, study three of this dissertation represents the first use of the IPV-GBM scale in this population. Preliminary results (discussed in detail in Chapter 6) suggest the scale's reliability extends to Indigenous MSM, and it therefore remains the preferred measure for measuring IPV among MSM in this dissertation.

Additional IPV Measures

Since the advent of the CTS, a plethora of measures have been developed to measure IPV (see Table 1). Early instruments considered only physical and sexual IPV (Attala, Hudson, & McSweeney, 1994; W. Hudson, 1991; Koss & Gidycz, 1985; Marshall, 1992; Rodenburg & Fantuzzo, 1993) before including controlling behavior, stalking, and additional forms of psychological violence at the turn of the 21st century (Basile et al., 2004; Mechanic, Weaver, & Resick, 2000; C. M. Murphy & Hoover, 1999; Riger, Ahrens, & Blickenstaff, 2000; Sackett &

Saunders, 1999; Sheridan, 2001; Thompson, Basile, Hertz, & Sitterle, 2006; Tolman, 1999).

While some of these measures have been implemented globally (e.g. the Sexual Violence Against Women Scale (SVAWS) (Marshall, 1992; Valdez-Santiago et al., 2006), the majority are used solely in the United States, some are tailored to a specific subpopulation such as college/university women (e.g. Sexual Experiences Survey (SES)(Koss & Gidycz, 1985; M. Testa, VanZile-Tamsen, Livingston, & Koss, 2004), and none are tailored to MSM. They are therefore outside the focus of this chapter.

Table 1: Common Measures of IPV

Scale	Type(s) of IPV Measured	Characteristics	Psychometrics (Chronbach's α unless otherwise noted)	Developer(s)
Revised Conflict Tactics Scale (CTS-2)	Physical, Psychological, Sexual	78-item scale measuring perpetration (n=39 items) and survival (n=39 items) of IPV in dating, cohabiting, or married partnerships. Subscales are grouped into "minor" and "severe" based on physical injury and extent of physical force. Physical assault subscale (n=12 items), sexual assault subscale (n=7 items), psychological aggression subscale (n=8 items) can be used alone or as a comprehensive measure of IPV	(Victimization, minor and severe together) Physical=0.88-0.94 Sexual coercion=0.55-0.74 Psychological=0.78-0.82	(Lucente, Fals-Stewart, Richards, & Goscha, 2001; Mechanic et al., 2000; M. A. Straus et al., 1996; Sung Hyun, 2011)
Revised Conflict Tactics Scale-Short Form (CTS-2 Short)	Physical, Psychological, Sexual	20-item shortened version of the CTS-2. The CTS-2 Short measures the same constructs as the CTS-2, but uses only two questions from each subscale.	No way to calculate based on 2-question scales; used concurrent validity measures with CTS-2 Physical- r=0.72 Sexual coercion- r=0.65 Psychological-r=0.77	(M. A. Straus & Douglas, 2004)
WHO VAW Study Instrument (VAWI)	Physical, Sexual	13-item scale based on the CTS and used in WHO publications, validated in Swedish and Brazilian women	Total scale: 0.79-0.89	(Nybergh et al., 2013; Schraiber et al., 2010)

The IPV-GBM Scale	Physical, Sexual, Psychological, Controlling Behavior, HIV-related	25-item scale with five domains measuring receipt and perpetration of IPV in male-male relationships	Total scale=>0.90	(Stephenson & Finneran, 2013)
Abusive Behavior Inventory (ABI)	Physical, Psychological	30-item scale for females with current or former partners; physical abuse subscale (n=13 items); psychological abuse subscale (n=17 items)	Physical subscale= 0.70 Psychological subscale=0.88-0.92	(Shepard & Campbell, 1992)
Composite Abuse Scale	Physical, Psychological, Stalking/Controlling Behavior	30-item scale for females with current or former partners lasting one month or longer; contains physical abuse subscale (n=7 items), psychological subscale (n=11 items), and harassment subscale (n=4 items)	Physical subscale=0.94 Psychological subscale=0.93 Harassment=0.87	(Hegarty, Sheehan, & Schonfeld, 1999; Hegarty et al., 2005)
Measure of Wife Abuse (MWA)	Physical, Sexual, Psychological	60-item scale for females with current or former partners; physical abuse subscale=11 items; sexual abuse subscale=12 items; psychological abuse subscale=15; verbal abuse subscale=14 items	Total scale= 0.93 Physical subscale= 0.81 Sexual subscale=0.73 Psychological=0.94 Verbal=0.83	(Rodenburg & Fantuzzo, 1993)
Partner Abuse Scale-Physical	Physical	25-item scale that measures presence and magnitude of physical assault in partners who are dating, cohabitating, or married. N=2 items measure sexual abuse	Total scale=0.90	(Attala et al., 1994; W. Hudson, 1991)
Partner Abuse Scale- Non-Physical	Psychological, Sexual	25-item scale measuring non-physical abuse in partners who are dating, cohabitating, or married including psychological (n=23	Total scale=0.90	(Attala et al., 1994; W. W. Hudson, 1997)

		items) and sexual (n=2 items) abuse		
Severity of Violence Against Women (SVAWS) Scale	Physical, Sexual	46-item scale measuring both threatened and enacted violence against women. Enacted violence subscale=21 items, sexual violence subscale=6 items	Total Scale=0.89-0.96 Threats= 0.94 Enacted Physical= 0.95 Sexual= 0.84	(Marshall, 1992)
National Women's Study and National Violence Against Women Survey Scale (NWS/NVAWS Scale)	Sexual, Stalking/Controlling Behavior	4-5 item scale that assesses attempted and enacted rape in adult men and women. The fifth item pertains to a resultant pregnancy and is thus only asked of females. An additional 8-item scale measures stalking behavior	Total scale-5 item=0.76 Stalking= 0.89	(Basile et al., 2004; P. G. Tjaden & Thoennes, 2000)
Sexual Experiences Survey (SES)	Sexual	10-item scale measuring sexual victimization among college women	Total scale=0.73	(Koss & Gidycz, 1985; M. Testa et al., 2004)
Index of Psychological Abuse	Psychological	33-item scale measuring ridicule, harassment, criticism, and emotional withdrawal in females who are dating, cohabitating, or married	Total scale=0.97	(C. Sullivan, Parisian, & Davidson, 1991; C. M. Sullivan & Bybee, 1999)
Multidimensional Measure of Emotional Abuse	Psychological	28-item scale developed with female college students measuring constructs of psychological abuse including restrictive engulfment, hostile withdrawal, denigration, and dominance/intimidation	Restrictive engulfment=0.85 Hostile withdrawal=0.91 Denigration=0.92 Dominance/Intimidation=0.91	(C. M. Murphy & Hoover, 1999; C. Murphy, Hoover, & Taft, 1999)
Profile of Psychological Abuse	Psychological	21-item scale measuring jealousy, ridicule, and criticism among women	Jealous control=0.85 Ridicule=0.79 Criticism of behavior=0.75	(Sackett & Saunders, 1999)

Psychological Maltreatment of Women Inventory	Psychological	58-item scale measuring dominance, isolation, and emotional and verbal abuse of women by male partners	Dominance/isolation=0.95 Emotional/verbal abuse=0.93	(Tolman, 1999)
Women's Experiences with Battering (WEB)	Psychological	10-item scale that measures the repeated-occurrences of psychological abuse consistent with battering among women with male partners	Total scale=0.91-0.99	(P. H. Smith, Earp, & DeVellis, 1995)
Harassment in Abusive Relationships: a Self-Report Scale (HARASS)	Stalking/Controlling Behavior	23-item scale measuring the level of distress caused to women due to harassment by their male partners. Three subscales: stalking, threatening, and controlling behaviors	Total Scale=0.92-0.93	(Sheridan, 2001)
Work/School Abuse Scales (W/SAS)	Stalking/Controlling Behavior	12-item scale measuring the behaviors of an intimate male partner that prevents or interferes with a women's participation in work or school	Total scale=0.82 Restraint tactic=0.73 Interference=0.77	(Riger et al., 2000)

Epidemiology of Intimate Partner Violence

What is the Prevalence of IPV in Women in Low- and Middle-Income countries?

The exact prevalence of IPV among women in LMIC is difficult to quantify because many women may be reluctant to report violence (Krug, 2002; World Health Organization, 2013). Feelings of shame, fear of being blamed or not believed, and/or reluctance to be seen as ‘disloyal’ to their partner are often cited as reasons women do not disclose violence in their relationships (Jewkes, Levin, & Penn-Kekana, 2002), as are fears of violence reprisal and worries about losing societal status (Palermo, Bleck, & Peterman, 2014). Widespread justification and acceptance of IPV in many societies may also lead women to not view the abuse they experience as IPV, thus negatively affecting reporting (Palermo et al., 2014; Stephenson, Koenig, Acharya, & Roy, 2008). Further, instrumentation issues such as differences in question wording, the number of questions asked, lack of rapport with the interviewer, and not holding the research interview in a private place can negatively skew prevalence estimates (Ellsberg, Heise, Peña, Agurto, & Winkvist, 2001). According to the World Health Organization (WHO) Multi-Country Study on Women’s Health and Domestic Violence, between 34% and 79% of women have disclosed physical IPV to anyone, fewer than 10% have reported to the police, and fewer than 6% have reported violence to medical services (Garcia-Moreno et al., 2005; Garcia-Moreno et al., 2006).

Among women who do report IPV, accurate data collection is often more difficult in LMIC than in resource-rich areas. This is compounded by the fact that the same factors hampering data collection in these areas are also shown to be positively associated with experiencing IPV. Areas engaged in civil conflict, those with poor health care infrastructure, informal urban settlements, and remote areas pose barriers to data collection efforts and remain

understudied (Palermo et al., 2014). All proceeding prevalence data should therefore be viewed in light of these issues, with the understanding that many women suffer IPV in silence.

Prevalence Estimates for women in LMIC

In 2013, a consortium of researchers from the WHO, the London School of Medicine and Tropical Hygiene (LSHTM), and the South African Medical Research Council (SAMRC) synthesized the current body of literature regarding the prevalence of IPV worldwide (World Health Organization/ London School of Hygiene and Tropical Medicine, 2010). This report is the first to show global and regional prevalence estimates for lifetime experiences of physical and sexual IPV. In reviewing 185 studies from 86 countries, the authors ascertained lifetime and recent prevalence estimates for physical and sexual IPV among ever-partnered women by region and age group. According to the report, the global lifetime prevalence of physical and sexual IPV is 30.0% (World Health Organization/ London School of Hygiene and Tropical Medicine, 2010). These estimates vary widely by WHO region (see Table 2). Since IPV tracks heavily with socio-economic status (Chaudhary, Girdhar, & Soni, 2009; Diop-Sidibe, Campbell, & Becker, 2006; Meyer, 2016; Spriggs, Halpern, Herring, & Schoenbach, 2009; Stephenson, Simon, & Finneran, 2014), the authors created a seventh region comprised of all resource-rich countries from the six traditional WHO regions. By region, the WHO report estimates for LMIC countries range from 24.6% in the Western Pacific (95% CI: 20.2-26.2) to 37.7% in South-East Asia (95% CI: 32.8-42.6). Prevalence in the African, Eastern Mediterranean, and South-East Asian regions was approximately 37% while prevalence in the Western Pacific, European, and Americas regions, were below 30%.

Table 2: Region-Specific Prevalence Data (World Health Organization, 2013)

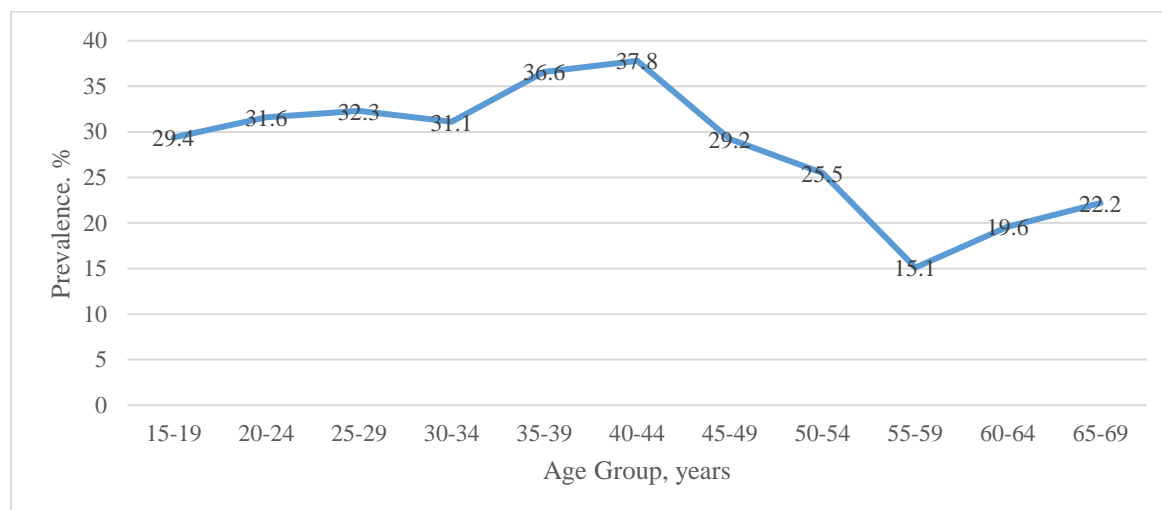
Region	IPV Prevalence Estimate (%) and 95% CI	
Africa	36.6	32.7-40.5
Americas	29.8	25.8-33.9
Eastern Mediterranean	37.0	30.9-43.1
Europe	25.4	20.9-30.0
South-East Asia	37.7	32.8-42.6
Western Pacific	24.6	20.1-29.0
High-Income	23.2	20.2-26.2

These estimates are comparable to previous meta-analyses and WHO reports on IPV. A meta-analysis of 141 studies of IPV in 81 countries also found a 30.0% prevalence rate worldwide (Devries et al., 2013). Regions were more thoroughly divided by sub-region in this study, decreasing the breadth of the confidence intervals and giving more precise estimates. The prevalence of lifetime experiences of physical or sexual IPV ranged from 19.30% in Western Europe to 65.64% in central Sub-Saharan Africa (Devries et al., 2013). The WHO Multi-Country Study on Women's Health and Domestic Violence, which surveyed more than 24,000 women at 15 sites in 10 countries also arrived at similar results (Garcia-Moreno et al., 2005; Garcia-Moreno et al., 2006). The extrapolated prevalence estimate for lifetime physical IPV found a wide variation in prevalence that ranged from 13% in Japan to 61% in rural Peru, with sexual IPV ranging from 6% in Japan to 59% in Ethiopia (Garcia-Moreno et al., 2005; Garcia-Moreno

et al., 2006). A third report from the turn of the 21st century, the World Report on Violence and Health, synthesized 48 population-based studies of physical IPV from 34 countries (Krug, 2002). Between 10% and 69% of women reported lifetime experience of physical IPV, with most estimates falling between 30% and 40% of respondents (Krug, 2002).

Age-Specific Prevalence Estimates

The prevalence of IPV is not static across the lifespan. The 2013 LSHTM/WHO/SAMRC study is the first large-scale report to calculate prevalence of IPV by age group, finding a risk curve for partnered women ages 15-69 (World Health Organization, 2013). According to the report, prevalence of physical and sexual IPV increases gradually from the teenage years until a peak at ages 40-44 (see Figure 2). This is similar to another large-scale study of IPV in LMIC, which found increased prevalence of IPV both in younger years and at mid-life (Peterman, Bleck, & Palermo, 2015). However, experiencing physical or sexual IPV may not be directly related to age itself, but rather to a confluence of potent confounders, such as lack of education and marital duration, for which age is acting as a proxy (Jewkes, 2002; Jewkes et al., 2002). While the prevalence for IPV may be higher in women under 45, IPV is a phenomenon that can occur at any age. The paucity of data from LMIC on IPV in women over 45 renders the prevalence estimates less robust for older women (WHO, 2013). Therefore, these rates are likely underestimated and should be viewed with caution.

Figure 2: Prevalence Rate of Physical and/or Sexual IPV by Age Group (WHO, 2013)

As previously mentioned, previous worldwide reports on the prevalence of IPV in LMIC focus exclusively on physical and sexual forms of violence (Garcia-Moreno et al., 2005; Krug, 2002). The newest WHO report maintains that while psychological violence and controlling behaviors are highly prevalent, measures of these constructs are not standardized across countries, and there is a lack of consensus in the scientific community about when a partner's unkind or insulting behaviors cross the line to become IPV (World Health Organization/ London School of Hygiene and Tropical Medicine, 2010). Therefore, it is difficult to synthesize literature regarding these forms of violence into regional- or even country-level prevalence estimates.

What is the prevalence of IPV among Indigenous MSM in the United States?

A paucity of literature on IPV in Indigenous MSM renders prevalence estimates difficult to ascertain. For this reason, the (relatively) larger body of work on IPV in MSM writ large will first be reviewed to provide insight into violence in male couples across racial and ethnic categories. Prevalence estimates for IPV in male couples vary widely, partly because there is far less research on IPV in same-sex couples compared to heterosexual couples (C. J. Alexander, 2002; Davis et al., 2015; Edwards, Sylaska, & Neal, 2015; Edwards et al., 2015; Jacobson, Daire,

Abel, & Lambie, 2015; Kimmel, 2002; Murray & Mobley, 2009; Stephenson et al., 2011). Methodological issues such as the ad-hoc adaptation of measures and the lack (until recently) of a scale to measure IPV in male couples specifically are also to blame for the lack of accurate prevalence estimates (Murray & Mobley, 2009; Stephenson & Finneran, 2013). The lack of an adequate sampling frame from which to draw probability samples relegates most studies of IPV in this population to convenience samples with men who self-identify as MSM (Balsam et al., 2005; Finneran & Stephenson, 2013; Nieves-Rosa, Carballo-Diequez, & Dolezal, 2000; S. S. Owen & Burke, 2004; Stephenson et al., 2011; Welles, Corbin, Rich, Reed, & Raj, 2011). This may skew estimates of IPV because it relies on men who are more comfortable disclosing their sexual identity. Small sample sizes in most studies reduce both the robustness of prevalence estimates and generalizability beyond the participants themselves (Murray & Mobley, 2009). Lastly, the diversity of definitions and recall periods regarding IPV among MSM complicate efforts to aggregate measures of IPV prevalence in this population (Stephenson & Finneran, 2013). In literature on IPV in MSM, recall periods range from six months (Bogart et al., 2005; Edwards et al., 2015) to fifteen years (Nieves-Rosa et al., 2000). Non-specific recall periods such as lifetime prevalence (Houston & McKirnan, 2007; Nieves-Rosa et al., 2000; Pantalone et al., 2012; P. Tjaden, Thoennes, & Allison, 1999) and ‘within-current relationship’ (Stephenson et al., 2011; Welles et al., 2011) are also used, further complicating an overall prevalence estimate.

There is only one systematic review of the literature concerning IPV in MSM that surveys both MSM-specific samples and studies in which MSM participants are a subset of larger studies (Finneran & Stephenson, 2013). In it, the authors found that the prevalence of any type of IPV ranged from 29.7% (Waldner-Haugrud, Gratch, & Magruder, 1997) to 78.0% (Pantalone et al., 2012). The most common type of IPV reported was physical IPV, which ranged

from 11.8% (Stephenson et al., 2010) to 45.1% (Craft & Serovich, 2005), while experiences of sexual violence ranged from 5% (Greenwood et al., 2002) to 30.7% (Balsam et al., 2005). As in the wider IPV literature, physical and sexual violence are measured more often among MSM than psychological violence (Finneran & Stephenson, 2013). In the six studies found in the systematic review measuring experience of psychological violence in male partnerships, the prevalence across all recall periods ranged from 5.4% (Rothenberg et al., 2000) to 73.2% (Pantalone et al., 2012). Despite the lack of precise prevalence estimates, the literature broadly agrees that IPV occurs in male couples at least as often as it does in male-female couples (Hall et al., 2017; Pruitt, White, Mitchell, & Stephenson, 2015; Stephenson et al., 2013; Toro-Alfonso & Rodriguez-Madera, 2004).

Unlike in male-female partnerships (R. P. Dobash et al., 1992; World Health Organization, 2012), there is evidence to suggest that substantial bidirectionality exists in the perpetration of IPV in male partnerships (Oringher & Samuelson, 2011; J. L. Stanley, Bartholomew, Taylor, Oram, & Landolt, 2006; Stiles-Shields & Carroll, 2015a). That is, men in partnerships may be both survivors and perpetrators of IPV. Therefore, traditional views of distinct perpetrator-survivor roles such as those that exist in much of the heterosexual IPV literature may be inappropriate when studying IPV in male relationships. The literature concerning perpetration of IPV in male partnerships is sparse, however, and suffers from the same methodological difficulties as other studies of IPV in MSM (Finneran & Stephenson, 2013). In their review, Finneran & Stephenson found perpetration of any type of IPV ranged from 12.0% (C. F. Wong, Weiss, Ayala, & Kipke, 2010) to 35.9% (Welles et al., 2011). Physical IPV perpetration ranged from 3.6% (Stephenson et al., 2010) to 39.2% (Craft & Serovich, 2005)

and sexual IPV perpetration from 0.7% (Stephenson et al., 2010) to 27.5% (Craft & Serovich, 2005).

The results of the few existing studies of Indigenous MSM point to a need for more research in this area. In a qualitative pilot study of 14 lesbian, gay, bisexual, transgender, and Two Spirit (LGBT2S) American Indians, IPV was cited a “major concern” that is not addressed in this population (Walters et al., 2001). Similarly, a mixed-methods study of 71 American Indians in New York City found 50% of MSM (n=10) had experienced physical *and* sexual IPV (Simoni et al., 2006). Research with Indigenous populations from countries with a similar history of British colonialism may provide some clues to the underlying social stressors leading to IPV in this population. One qualitative study of Maori MSM in New Zealand (n=8) found that all of them had experienced sexual IPV and stated non-consensual sex is common in their communities (Aspin, Reynolds, Lehavot, & Taiapa, 2009). A slightly larger, quantitative study of Indigenous, Canadian MSM (n=189) indicated 16% had experienced sexual IPV in the past year (Monette, Albert, & Waalen, 2001). However, there are no published studies of IPV in Indigenous MSM that use the IPV-GBM scale, and measures assessing violence in the aforementioned studies are one- or two-item questions adapted from scales written for female victims of IPV. Drawing on the available data and combined with theoretical evidence suggesting high levels of intersectional race- and sexuality-based structural stress (Balsam et al., 2004; Simoni et al., 2006), IPV is likely to be high among Indigenous MSM.

Correlates and Risk Factors for Intimate Partner Violence

According to socio-ecological theories, correlates associated with IPV exist at the individual, dyadic, community, and societal levels (Capaldi, Knoble, Shortt, & Kim, 2012; B. E. Carlson, 1984; Garcia-Moreno et al., 2005; L. L. Heise, 1998; Jewkes, 2002; S. Vyas & Watts,

2009; World Health Organization, 2013), and are fluid across time (Bronfenbrenner, 2004; Bronfenbrenner, 1992). This section explores correlates at each of these levels and is divided into three sub-sections: individual, dyadic/household, and community/societal factors. Individual factors are those in the victim's personal history or demographics that are shown in the literature to be associated with IPV. Dyadic factors consider the personal history and demographics of the intimate partner, as well as relationship dynamics such as trust, intimacy, and jealousy. Community and societal factors consider the environments in which intimate relationships are embedded as well as the macro-level norms, cultures, policies, and belief systems that govern these environments. Since many of these are found to be correlated with IPV both populations of interest, references to women in low-resource countries and MSM are used together where evidence finds the risk factor affects both populations.

Individual- level correlates of IPV

Financial Stress

Financial stress is perhaps the most pervasive and widely cited correlate of IPV and is one of the only socio-demographic characteristics consistently associated with IPV across cultures and societies (Jewkes, 2002; World Health Organization, 2013) (Jewkes, 2002). In LMIC women (Audi, Segall-Correa, Santiago, Andrade Mda, & Perez-Escamila, 2008; Bates, Schuler, Islam, & Islam, 2004b; Chaudhary et al., 2009; Kiss et al., 2012; S. Vyas & Watts, 2009; Weiss et al., 2008b) and MSM (Houston & McKirnan, 2007; Stephenson et al., 2013; West, 2012), a higher household socioeconomic status (SES) is generally associated with reduced IPV. For many men, stress over finances may generate frustration over their inability to live up to the prescribed gender role as the provider for their family that may then overflow into acts of violence (World Health Organization & London School of Hygiene and Tropical

Medicine, 2010). This hypothesis is strengthened by evidence from studies finding a dose-response effect, meaning the risk of IPV falls in a linear fashion with an increase in household SES (Bates et al., 2004a; Hindin & Adair, 2002b; Koenig, Ahmed, Hossain, & Alam Mozumder, 2003; Yount, 2005). Viewed through the lens of social exchange theory (Goode, 1971), a partner with few socioeconomic resources may use violence as an alternative resource to gain the power and control he lacks from low levels of education, community social status, or financial stability (S. Vyas & Watts, 2009).

However, there is also some evidence among LMIC women that being in extreme poverty can be associated with reduced risk of IPV (Jewkes, 2002). Conflicts between partners regarding household finances that lead to violence likely decrease if there are few resources over which to argue. The correlation between high levels of poverty and high levels of gender inequality (J. C. Kim & Watts, 2005; Paruzzolo, Mehra, Kes, & Ashbaugh, 2010) may also be an explanation. In heavily unequal societies, the power structures and gender roles may be so deeply embedded that violence is not needed to enforce female subjectivity (World Health Organization/London School of Hygiene and Tropical Medicine, 2010). Either way, the literature belies a common assumption that poverty itself is completely responsible for an increased risk of IPV.

To account for this, the theory of resource exchange has since been expanded to include relative resource theory, or differences in resources between partners, in addition to the absolute level of resources (McCloskey, 1996). This occurs when one partner is more educated, of a higher socio-economic class, or has a higher social standing in the community than the other. This imbalance of power upsets the power dynamics of a relationship, increasing the potential for IPV. This is explained in detail in the section on dyadic differences.

Education

A low level of education is also consistently associated with experiencing IPV (Boyle, Georgiades, Cullen, & Racine, 2009; Edwards et al., 2015; Koenig, Stephenson, Ahmed, Jejeebhoy, & Campbell, 2006; Najafizada, Bourgeault, & Labonte, 2017; World Health Organization/ London School of Hygiene and Tropical Medicine, 2010). Education and financial stress are highly correlated because increased educational attainment is often directly related to access to monetary resources and social capital (Flake, 2005; Kishor & Johnson, 2005; Paek, Lee, Salmon, & Witte, 2008; Pronyk et al., 2008; Yount, 2005). In LMIC, women who report attaining primary education or below are, on average, two to five times more likely to experience IPV in their lifetimes than more highly educated women (Ackerson, Kawachi, Barbeau, & Subramanian, 2008; World Health Organization/ London School of Hygiene and Tropical Medicine, 2010). This same relationship is seen among male couples in the United States, with studies finding a high school education or higher to be associated with a reduced odds of experiencing IPV (Stephenson et al., 2013; Stephenson et al., 2011).

While studies of male-female couples across LMIC show that an increased level of education for women is associated with a lower odds of ever experiencing IPV, a majority of the existing evidence shows this effect only after the woman completes secondary school (Hindin & Adair, 2002a; Metheny & Stephenson, 2018a; Munoz, Brady, & Brown, 2017; Reuter et al., 2017; S. Vyas & Watts, 2009). In fact, an increased risk of experiencing IPV has been found in women who complete some education, but do not complete secondary schooling (Gage, 2005a; McCloskey, Williams, & Larsen, 2005; Peterman et al., 2015). That is, as education level increases, the balance of power in the relationship is disrupted and (among male-female couples) the traditionally subordinate role of women in the community is challenged. This prompts the male partner to use violence as a means to restore the status quo. This may result in an increased risk

for IPV until a threshold level of education is reached. At this point, there may be less financial dependency in the relationship and there is a greater chance the male partner also has a secondary education, leading both members of the dyad adopt more egalitarian views (Flake, 2005; Jewkes, 2002; Kishor & Johnson, 2005; Stephenson et al., 2013; Stephenson et al., 2011; S. Vyas & Watts, 2009). While this has not been studied in male couples, the inverse U-shaped curve to the protective effect of education may be similar for both populations.

Intergenerational Transfer of Violence

Witnessing and/or experiencing violence as a child is commonly associated with IPV victimization and perpetration as an adult (Gil-Gonzalez, Vives-Cases, Ruiz, Carrasco-Portino, & Alvarez-Dardet, 2008; Stith et al., 2000; World Health Organization/ London School of Hygiene and Tropical Medicine, 2010). The intergenerational transfer of violence is considered an individual factor for the purposes of this section because even though it involves more than one person, it concerns the personal history of the individual and does not involve the intimate partner. The theoretical rationale for the intergenerational transfer of violence is based in Social Learning Theory, which states that humans model their adult behavior on what they experience as children (Bandura & Walters, 1977). In terms of victimization, empirical studies and meta-analyses show women in LMIC (E. K. Martin, Taft, & Resick, 2007; Söchting, Fairbrother, & Koch, 2004; Stith et al., 2000; Vung & Krantz, 2009) and MSM (Bartholomew, Regan, Oram, & White, 2008; Craft & Serovich, 2005; Friedman et al., 2008; West, 2012) who experience violence (especially sexual violence) as children are also more likely to experience violence as adults. In addition to modeling learned behavior, experiencing violence as a child may subconsciously lead to an increased acceptance or justification of IPV, and thus a greater chance of entering into an abusive relationship and/or staying with an abusive partner (World Health

Organization/ London School of Hygiene and Tropical Medicine, 2010). Strong cultural norms of IPV normalization may also strengthen the intergenerational transfer of violence by teaching children that violence is an normal and appropriate way to resolve conflict (Koenig et al., 2006; Uthman, Lawoko, & Moradi, 2009; World Health Organization/ London School of Hygiene and Tropical Medicine, 2010).

Witnessing or experiencing violence as a child is also associated with increased odds of perpetrating IPV as an adult. Meta-analyses find that men who experience violence as a child are three- to four-times more likely to perpetrate IPV against their female (Gil-Gonzalez et al., 2008; Gil-González, Vives-Cases, Álvarez-Dardet, & Latour-Pérez, 2006) and male (Craft & Serovich, 2005; Welles et al., 2011) partners as adults. Another meta-analysis had similar results, but only among men who experienced sexual violence (Jespersen, Lalumière, & Seto, 2009). The existence of a global patriarchy suggests that men, regardless of sexual orientation, are socialized to be aggressive (Meiksin, Meekers, Thompson, Hagopian, & Mercer, 2015b; Pallitto & O'Campo, 2005; Sugarman & Frankel, 1996). This, compounded with exposure to violence as a child, this may increase justification of violence as an appropriate conflict resolution tactic.

There are nuances of the intergenerational transfer of violence that make a difference- especially the gender of the violent parent and whether the violence was experienced directly by the child or witnessed as IPV between adults (Stith et al., 2000). For example, one meta-analysis of studies involving male-female couples found a significant association between girls witnessing their mothers' experiences of violence and future IPV victimization as well as boys witnessing their fathers' perpetration of violence and future IPV perpetration (Stith et al., 2000). The opposite was found in studies of MSM, where only mother-perpetrated violence (and not father-perpetrated) was associated with future IPV perpetration (Bartholomew et al., 2008; Craft

& Serovich, 2005). In both male-female and male-male couples, role socialization of traditional gender norms may be influencing which behaviors are learned. In male-female IPV, the learned behavior likely comes from modeling what is seen in the same-gender parent, as children often use this parent as a role model (Stith et al., 2000). Conversely, many young men who identify as gay have strained relations with their fathers (Bartholomew et al., 2008), causing these children to model the behavior of the mother- to whom they may be more emotionally connected (Bartholomew et al., 2008; Craft & Serovich, 2005). Since little of the empirical literature on the intergenerational transfer of violence considers these gendered effects, there is a need for more work to substantiate these explanations.

There are several methodological challenges of existing studies of the intergenerational transfer of violence, especially those in LMIC. Most studies use small, non-representative samples and long recall periods, often over decades (Franklin & Kercher, 2012; Kerley et al., 2010; Mandal & Hindin, 2015; Vung & Krantz, 2009). Another limitation is a lack of consideration for potential mediators in the intervening years between childhood experiences of violence and IPV as an adult. One such mediator may be changes in community and societal norms during the years between childhood and experiences of IPV as an adult. Increased societal intolerance of IPV, improved gender equality in some areas, or simply moving as an adult to a community where violence is less normalized may impact how violence is transferred across generations (Mandal & Hindin, 2015; World Health Organization, 2013). More well-controlled studies of this phenomenon in both LMIC women and MSM are necessary to establish the extent to which the cycle of violence continues from childhood into adulthood.

History of Abuse in Prior Relationships

In addition to experiencing violence as a child, a history of IPV in previous relationships is associated with experiencing IPV again in the future (P. C. Alexander, 2009; Bockers, Roepke, Michael, Renneberg, & Knaevelsrud, 2014; Coolidge & Anderson, 2002; Iverson et al., 2013). A history of non-intimate partner abuse has also been found to be associated with experiencing IPV (World Health Organization, 2013), with one study in India reporting women who experienced physical or sexual abuse by a non-partner to be 3.8 times more likely to have also experienced IPV (Boyle et al., 2009). While the exact mechanisms for this relationship are unclear, previous abuse of any type may alter a person's ability to accurately assess the risk of violence a partner's behavior presents and increase the acceptability or justification of violence (Bockers et al., 2014). Previous abuse may also lower the victim's self-esteem, lead to feelings of shame, and reduce feelings of assertiveness or autonomy, leading to a greater chance of revictimization. (Coolidge & Anderson, 2002; Söchting et al., 2004; World Health Organization & London School of Hygiene and Tropical Medicine, 2010). While most studies of this kind have drawn from samples in rich countries, there is some evidence for the association between an individual's justification of violence and revictimization among women in LMIC specifically (Abrahams, Jewkes, Hoffman, & Laubsher, 2004; Jewkes et al., 2006a; Uthman et al., 2009). In these settings, the justification of violence often tracks with other attitudes of gender inequality and patriarchal values such as the subordination of women and reduced female autonomy (World Health Organization/ London School of Hygiene and Tropical Medicine, 2010). These attitudes, as well as the psychological harm caused by experiencing IPV, lead some people to partner with abusers even after leaving a previous abusive relationship and/or stay in a relationship where IPV is present, perpetuating a cycle of violence (Bockers et al., 2014; Iverson et al., 2013). This often leads to an escalation of the type and severity of violence that is withstood by the victim, with

the most important risk factor for intimate partner homicide being previous IPV (J. C. Campbell, Glass, Sharps, Laughon, & Bloom, 2007).

While revictimization of IPV in subsequent relationships has yet to be explored in male couples, instances of enacted discrimination in adulthood have been shown to be associated with both perpetrating and experiencing IPV (Finneran, Chard, Sineath, Sullivan, & Stepheneon, 2012). Although this too perpetuates the cycle of violence, the underlying mechanism is likely different. Rather than feminist constructs of patriarchy and autonomy, MSM who experience instances of homophobic violence who also perpetrate or experience IPV likely have high levels of minority stress. Explored in detail in Chapter 2, this theory posits that enacted stigma increases psychological stress and can lead to IPV (Meyer, 1995; Meyer, 2003). Partnering with multiple men who have high levels of this type of stigma- perhaps by living in a non-affirming environment where many MSM experience enacted stigma- may lead to revictimization. Regardless of the mechanism, experiencing IPV in one relationships seems to be risk factor for future experiences of IPV.

Pregnancy

Studies of LMIC women indicate IPV during pregnancy is a substantial public health concern (Ahmed, Koenig, & Stephenson, 2006; Alhusen, Ray, Sharps, & Bullock, 2015; J. Campbell et al., 2004; Devries et al., 2010; Nasir & Hyder, 2003; Van Parys, Verhamme, Temmerman, & Verstraelen, 2014; Van Parys et al., 2015), with prevalence estimates of IPV during pregnancy ranging from 4% to 29% (Nasir & Hyder, 2003; Van Parys et al., 2015). While there is no conclusive evidence that the risk of IPV increases during pregnancy, it is plausible that pregnancy may exacerbate underlying tensions or conflict, which then lead to IPV. For primiparous women and their partners, this may include the emotional and financial stress of

transitioning to parenthood (United Nations Children's Fund, 2009). Pregnancy may cause women- especially young women and those who were previously employed- to become more economically dependent on their partners, compounding financial stress and reducing their ability to leave a violent relationship (Devries et al., 2010). While data from the United States indicates IPV decreases during pregnancy for a majority of women, pre-existing IPV continues for many (Devries et al., 2010; Van Parys et al., 2015) and becomes more severe for others, especially those whose partners do not desire the pregnancy (Hammoury, Khawaja, Mahfoud, Afifi, & Madi, 2009; Lau, 2005). Escalation of IPV present before pregnancy is also a concern. Homicide by an intimate partner is recognized as an important component of maternal mortality both in the United States (American College of Obstetricians and Gynecologists, 2012; El Kady, Gilbert, Xing, & Smith, 2005) and LMIC (Espinoza & Camacho, 2005; Pan American Health Organization, 2005; World Health Organization, 2012).

In some contexts, childlessness may also be a correlate of IPV. This is more common in societies with entrenched, pronatal fertility norms (Koenig et al., 2006; Stellar, Garcia-Moreno, Temmerman, & van der Poel, 2016). In these communities, the blame for failing to conceive often falls on the woman, and childlessness may be used a justification for violence (Stellar et al., 2016). Further, gendered expectations of men in some LMIC communities to have many (often male) children may link childlessness or sub-fertility to a failure to fulfill socially proscribed roles, including passing on land, wealth, and securing care for elders, increasing the propensity for violence (Becker, Castrillo, Jackson, & Nachtigall, 2006; Stellar et al., 2016).

Alcohol Use

There is evidence to suggest that experiencing IPV is associated with increased alcohol use as a stress-response behavior to experiencing violence (K. M. Graham, 2008; K. Graham,

Bernards, Wilsnack, & Gmel, 2011; Jewkes, 2002; T. P. Sullivan et al., 2016). It is important to specify the direction of this effect: it would insinuate fault on behalf of the victim to suggest that alcohol use is linked to later victimization. Rather, alcohol use is shown to be associated with male perpetration of IPV in male-female couples in LMIC (Ally et al., 2016; Gil-González et al., 2006; K. Graham et al., 2011; S. Stanley, 2012) and MSM in the United States (Davis, Kaighobadi, Stephenson, Rael, & Sandfort, 2016; Stults et al., 2015). Results of cross-sectional studies from LMIC estimated that men who abuse alcohol are 1.6 to 4.8 times more likely to perpetrate IPV (World Health Organization/ London School of Hygiene and Tropical Medicine, 2010), and a meta-analysis of male-female couples from resource-rich countries and LMIC estimated that problem alcohol use was associated with a 457% increase in the likelihood of perpetrating any type of IPV (Gil-Gonzalez, Vives-Cases, Alvarez-Dardet, & Latour-Perez, 2006).

Among MSM specifically, alcohol use is associated with increased odds of IPV perpetration and victimization (Bimbi et al., 2008; Davis et al., 2016; Duncan et al., 2016; West, 2012). Recent evidence from MSM in the United States indicates men who abuse alcohol are 11%-27% more likely to experience physical or sexual IPV and 13-23% more likely to perpetrate physical or sexual IPV (Davis et al., 2016). Alcohol use is also seen as an underlying source of tension in male-male relationships. Qualitative studies of MSM in the United States suggest alcohol is responsible for violence in its own right, but also exacerbates other issues, potentially increasing the severity of the violent acts (Finneran & Stephenson, 2014a; Goldenberg, Stephenson, Freeland, Finneran, & Hadley, 2016).

Despite its general acceptance as a risk factor among researchers and policymakers, there are methodological issues in many of the studies that weaken its evidence base. In one meta-

analysis, Gil-Gonzalez et al. (2006) state that the lack of rigor in the included studies and mostly cross-sectional designs preclude making any causal inferences about how alcohol may influence IPV perpetration. Further, the strong association found in these early studies and the logical link between alcohol and violence may encourage a publication bias, wherein only positive results are disseminated (K. Graham et al., 2011).

The existing literature also rarely distinguishes between types of relationships and IPV with which alcohol use may be associated (Davis et al., 2016). Most studies of LMIC women sample only those who are married, ignoring the violence that may take place in casual partnerships. This has implications for the type of alcohol-associated violence experienced, which is shown to differ between casual and long-term relationships in rich countries (Brennan, Sinha, Taylor-Butts, & Porter, 2011). It remains to be explored whether this is true in LMIC contexts or among MSM. In a study examining alcohol use and IPV among MSM, Davis et al. (2016) posit that IPV associated with alcohol misuse may differ based on the length of the relationship. Casual partners, for instance, may be associated with more short-term, immediate forms of IPV such as sexual assault, while long-term partners may employ psychological manipulation or verbal aggression (Davis et al., 2016). This hypothesis should be explored further in both populations of interest.

Dyadic Correlates

Dyadic Differences

A growing body of literature in both male-female and male-male couples indicate that differences between partners regarding age, education and socioeconomic status are associated

with IPV (Finneran & Stephenson, 2014a; Goldenberg et al., 2016; McClennen, Summers, & Vaughan, 2002; Morrison, Ellsberg, & Bott, 2007; Stephenson et al., 2011; World Health Organization/ London School of Hygiene and Tropical Medicine, 2010). As referenced previously, the underlying mechanism for this association likely lies with a relative resource scarcity. That is, the power imbalance that results from one partner feeling inferior to the other may result in violence to regain what is seen as an even playing field (World Health Organization/ London School of Hygiene and Tropical Medicine, 2010). In LMIC, the strongest evidence comes from studying disparities in educational attainment. Disparities in education, especially when the woman is more educated than her male partner, is shown to result in higher odds of experiencing IPV among male-female couples in LMIC (Ackerson et al., 2008; Chan, 2009; Flake, 2005; Xu et al., 2005). Many researchers contend this is due to women challenging traditional gender norms and men's position in society as head of the household (S. Vyas & Watts, 2009), while others maintain the risk of violence depends largely on the extent to which the male partner holds egalitarian views (Atkinson, Greenstein, & Lang, 2005). Regardless, this finding highlights the importance of taking a social-ecological approach to IPV. If only individual factors are considered, education reduces the odds of experiencing violence. It is only after considering the dyadic (and higher-level) factors that a more nuanced picture emerges. Dyadic differences in education are also seen as antecedents to IPV in male-male couples in the United States. This is also likely also due an imbalance of power and the financial stability that often accompanies education (Finneran & Stephenson, 2014a). This imbalance of power can also come when one partner is significantly older than the other. Data suggest large differences in age between partners are associated with experiencing IPV in both male-male (Goldenberg et al., 2016) and male-female (Chan, 2009; Jewkes et al., 2006b) couples, most often for the younger

member of the dyad. There is little agreement on what is considered a ‘large difference’, however, and this likely differs between male-female and male-male couples.

Dyadic differences in income and socioeconomic status between partners can create the opportunity for coercive control and violence, and limit the ability for the more dependent partner to leave the relationship (Esquivel-Santoveña, Lambert, & Hamel, 2013; Finneran & Stephenson, 2014a; Goldenberg et al., 2016; McClennen et al., 2002; McClennen, 2005). According to marital dependency theory (R. E. Dobash & Dobash, 1979; Gelles, 1976; Kalmuss & Straus, 1982), status inconsistency between partners- regardless of their combined household SES- leaves the more dependent partner with less agency and therefore less ability to leave an abusive relationship (Holvoet, 2005; Tauchen & Witte, 1995). In practice, however, alleviating the relative differences in economic resources is shown to be associated both with reduced (Gage, 2005a; Kishor & Johnson, 2005) and increased (Kishor & Johnson, 2005; Naved & Persson, 2005) IPV victimization among male-female couples in LMIC. Interventions to increase independent economic empowerment via female-led microcredit schema have shown to be associated with lower odds of experiencing IPV in South Africa (J. C. Kim et al., 2007) but higher odds of experiencing IPV in Bangladesh (Koenig et al., 2003; Naved & Persson, 2005). The inconsistent and complex relationship between economic empowerment and IPV points to the differing social and cultural factors regarding gender norms that may be at play in these contexts (Vyas & Watts, 2009). That is, while increased economic empowerment may allow women to negotiate with their male partners or leave abusive relationships, acquiring more economic independence may challenge traditional gender roles as well as the male spouse’s dominance, which could lead to increased violence.

Dyadic differences have also been found to be associated with IPV in male couples. Evidence suggests that dyadic differences in outness, or the degree to which a partner is open about his sexuality, are seen as a source of tension that could lead to violence in male-male relationship (Finneran & Stephenson, 2014a; Goldenberg et al., 2016). This relationship is potentially bidirectional. The less out partner may feel embarrassed or ashamed to be seen with someone he feels is “too out”. Conversely, the more out partner could perpetrate emotional violence or controlling behavior against his more closeted partner through threats to ‘out’ him to people who may judge his sexual orientation (Goldenberg et al., 2016). Similarly, data suggests that both partners being closeted is also a potential antecedent to violence (Finneran & Stephenson, 2014a). Other dyadic differences in male couples that may be associated with IPV include differing HIV statuses, sexual positioning preferences, and both partners seeing themselves as “alpha males” (Finneran & Stephenson, 2014a). The underlying dynamics of power imbalance and a desire for control that drive violence in male-female couples are likely at play in these scenarios as well, as is the hegemonic masculinity that pervades society as a whole. Lastly, being in an interracial relationship was shown to be associated with increased likelihood of experiencing IPV among male couples in one study (Stephenson et al., 2013), and likely reflects the compounding nature race- and sexuality-based stressors (Bowleg, 2008; Davis et al., 2015).

Relationship dissatisfaction

Low levels of relationship satisfaction have been shown to be associated both with perpetrating and experiencing IPV in male-female (Morrison et al., 2007; Stith, Smith, Penn,

Ward, & Tritt, 2004; Tang & Lai, 2008; Williams & Frieze, 2005) and male-male relationships (Stephenson et al., 2011). While the measurement of relationship satisfaction is often a single question asking to what extent the respondent is satisfied in the current relationship (i.e. Stephenson et al., 2011), the frequency of quarrels and degree of marital discord have also been used to ascertain relationship satisfaction (World Health Organization & London School of Hygiene and Tropical Medicine, 2010). According to Bartholomew and Cobb's dyadic model of IPV, factors relating to the individuals' backgrounds (i.e. personal trauma), the relationship context (i.e. power imbalance), and situational context (i.e. dyadic interaction) jointly act to shape the risk for violence in male-female couples (Bartholomew & Cobb, 2010). Stephenson et al. (2011) provided evidence that this model functions in male couples as well. According to Bartholomew and Cobb's model, as well as other dyadic models of IPV (e.g. Capaldi & Kim, 2007), relationships marked by constructive communication, trust, and an equal balance of power have a low risk of IPV- regardless of either partner's individual propensity for violence. A breakdown in any of these is an invitation for violence to enter a relationship.

Multiple partners/infidelity

In male-female relationships in LMIC, men who report having multiple partners are more likely to perpetrate IPV (especially sexual violence), and perceived infidelity of the either partner is associated with experiencing IPV (Abrahams et al., 2004; Chan, 2009; Dalal, Rahman, & Jansson, 2009; Jewkes et al., 2006a; K. B. Johnson & Das, 2009; Koenig et al., 2004; Tang & Lai, 2008; Vung & Krantz, 2009). Feelings of jealousy by the male partner are also associated with perpetrating violence against a female partner (Capaldi et al., 2012; Jewkes, 2002). Estimates of the increased odds of experiencing sexual IPV in these relationships range from 1.52 in Uganda (Koenig et al., 2004) to 17.1 in South Africa (Jewkes et al., 2006a), while the

lifetime risk of experiencing physical or sexual IPV ranged from 1.5 in Uganda (Koenig et al., 2004) to 2.42 in Vietnam (Vung & Krantz, 2009). Men who seek out multiple partners may do so to elevate their social standing, self-esteem, or as a way to fulfill the gendered notion of manhood in many societies (Jewkes et al., 2006a; World Health Organization & London School of Hygiene and Tropical Medicine, 2010). Men with multiple concurrent partners are also more likely to engage in sexual risk behaviors such as inconsistent condom use (Garcia-Moreno et al., 2005), non-disclosure of STI symptoms (J. C. Campbell et al., 2008), and engage in transactional sex (Gilbert, El-Bassel, Wu, & Chang, 2007), potentially harming the sexual and reproductive health of their partners.

In contrast to male-female couples in LMIC, a growing body of literature suggests many male couples have agreements allowing multiple partners and sexual encounters outside the relationship (Gass, Hoff, Stephenson, & Sullivan, 2012; Mitchell, 2014; Perry, Huebner, Baucom, & Hoff, 2016; Pruitt et al., 2015), and there is some evidence to suggest that having a more open agreement is associated with reduced odds of reporting IPV (Pruitt et al., 2015). However, the conversation regarding having a sexual agreement and its parameters is itself a source of potential violence among some men (Finneran & Stephenson, 2014a), and qualitative data suggests that jealousy and fear of infidelity (which may be elevated in open relationships) are antecedents to violence in male couples (Finneran & Stephenson, 2014a; Goldenberg et al., 2016).

An underlying gender role-socialization of men needing power and control may play a part in the perpetration of IPV against partners who are perceived to be in violation of either monogamy or a pre-defined sexual agreement (McClennen et al., 2002; Perry et al., 2016; Pruitt et al., 2015). Evidence from LMIC suggests a female partner's suspicion of infidelity and

confrontation of this suspicion may be seen as an affront to the gendered notion of a man's honor or virtue, inciting violence (Dalal et al., 2009; K. B. Johnson & Das, 2009; Tang & Lai, 2008). Conversely, men who have multiple partners in some LMIC contexts may do so to garner self-esteem or an elevated status in the community, relating less personally with each of their intimate partners, leading to a reduced emotional bond and higher odds of perpetrating violence (Jewkes et al., 2006a).

Bidirectionality of IPV

As research on IPV gained momentum in the 1970s and 1980s, research regarding the 'gender symmetry' or bidirectionality of violence began to be disseminated (McNeely & Robinson-Simpson, 1987; McNeely & Mann, 1990; Shupe, Stacey, & Hazlewood, 1987; Steinmetz & Lucca, 1988; M. A. Straus & Gelles, 1986; M. A. Straus, Gelles, & Smith, 1990; M. A. Straus, Gelles, & Steinmetz, 1980). The concept of gender symmetry stated that violence against men by women in male-female dyads constituted a public health concern of the same magnitude as that of violence against women. As IPV research had not yet begun in earnest in LMIC, the evidence for this claim came largely from two national surveys carried out in the 1970s in the United States, wherein rates of violence perpetrated by wives against husbands were similar to those of husbands against wives (R. P. Dobash et al., 1992; M. A. Straus & Gelles, 1986; M. A. Straus et al., 1990). The use of the Conflict Tactics Scale in both surveys is part of the reason researchers came to this conclusion. One of the main critiques of the scale is its inability to consider the context of the violent event (Bender, 2016; Kimmel, 2002; Rodenburg & Fantuzzo, 1993) (see Chapter 1 for a detailed discussion of the CTS). This limitation precludes knowing the history and intentions that lead to violence and conflate (among other things) females' self-defense against a violent partner with battering by men. Dobash et al. (1992) began

to dismantle the myth of gender symmetry in IPV in the United States by advocating for a more solid theoretical grounding to IPV research and calling for rigorous investigation into how elements of feminist theory such as patriarchy, gender inequality, and gender norms affect the incidence of IPV.

It is important to note that refuting gender symmetry is not the same as claiming violence is not committed against men by their female partners. In fact, the acknowledgement of female-initiated violence opened the door for research regarding IPV in same-sex couples, which initially began with female-female couples (Kimmel, 2002). Rather, while female-initiated violence in male-female couples occurs, and violence against anyone is unwarranted, violence perpetrated by women is often in self-defense (R. P. Dobash et al., 1992; Kimmel, 2002; World Health Organization, 2017).

Since the early 1990s, research on IPV has centered on an understanding that it is largely due to a struggle for power and control abetted by patriarchal societal norms. This understanding means IPV in male-female relationships is now seen by most researchers and policymakers as a phenomenon largely enacted upon females by their male partners, and that bidirectionality as it is commonly understood is an inappropriate lens through which to view IPV (Centers for Disease Control and Prevention, 2015; Garcia-Moreno et al., 2005; Krug, 2002; World Health Organization, 2013).

Conversely, there is mounting evidence that bidirectionality of abuse does occur in male-male dyads (Craft & Serovich, 2005; Davis et al., 2016; Freeland et al., 2016; Goldenberg et al., 2016; Stiles-Shields & Carroll, 2015b). Operating under the same theoretical constructs of power and control that underlie violence in male-female relationships, and considering the gender role-socialization of men in most societies, it is intuitive that IPV would be more bidirectional in male

couples than in opposite-sex dyads. Viewed through the lens of Minority Stress Theory, internalized homophobia (Bartholomew et al., 2008; Edwards & Sylaska, 2013) and concealing a homosexual identity (Edwards & Sylaska, 2013) have been shown empirically to be associated with perpetrating IPV in male couples. Studies of substance abuse and IPV in male couples suggest substance misuse is associated with both perpetration and victimization (Davis et al., 2016; Duncan et al., 2016; West, 2012). Qualitative data of MSM in partnerships support these findings and suggest that minority stressors and substance misuse may be associated with both IPV perpetration and victimization as well (Finneran & Stephenson, 2014a; Goldenberg et al., 2016).

Community- and Structural-Level Correlates

In the past decade or so, there has been an increased interest in how community and structural-level factors are associated with IPV (Beyer et al., 2015; Boyle et al., 2009; Capaldi et al., 2012; Metheny & Stephenson, 2018a; Pallitto & O'Campo, 2005). However, the complexities of how community norms and macrosocial forces shape the risk for violence are only beginning to be explored. In an early, seminal paper exploring the higher-order correlates of IPV globally, Jewkes (2002) distilled two fundamental causes: the unequal status of women in a society and the normalization of violence in conflict. Taking into account the stigma and discrimination faced by MSM in many parts of the world (Finneran & Stephenson, 2014b; Meyer, 2010; White & Stephenson, 2014), it follows that a natural extension of Jewkes' argument should include the unequal status of male couples in most societies as a necessary factor for IPV to occur in these relationships. This section grounds the overarching theme of this dissertation, arguing that factors at the structural level are fundamental in that they create the norms and power structures operationalized at lower levels of the social-ecological model

(Bronfenbrenner, 2004; Hatzenbuehler et al., 2013; L. L. Heise, 1998). It is important to note that while some of these forces (e.g. gender inequality, minority stress) are discussed in relation to their association with IPV in one target population or the other, these forces permeate society as a whole (Jayachandran, 2014; Meyer, 1995).

Gender Inequality

Social-ecological thinking posits that violence against women is grounded in macrosocial forces such as gender inequality (R. P. Dobash et al., 1992; Gracia, 2014; Hindin, Kishor, & Ansara, 2008; Krug, 2002; Levinson, 1989; Pallitto & O'Campo, 2005; C. T. Taft, Bryant-Davis, Woodward, Tillman, & Torres, 2009; World Health Organization/ London School of Hygiene and Tropical Medicine, 2010). These forces create societies wherein men are viewed as superior to women and socialized to dominate their partners, perpetuating hierarchical gender roles (Ali & Gavino, 2008; Jewkes, Sen, & Garcia-Moreno, 2002; Jewkes, 2002; C. T. Taft et al., 2009). Violence is a risk when these structures are threatened- as in when men's privilege, superiority, or ability to provide for his family are threatened (Hall et al., 2017; Jayachandran, 2014; McCloskey et al., 2005; Pallitto & O'Campo, 2005; Papp, Cummings, & Goeke-Morey, 2009). Gender inequality also limits the ability of women to change structures through limited opportunities for advancement, unequal employment, and a reduced representation in government, thus further perpetuating norms of inequality (World Health Organization/ London School of Hygiene and Tropical Medicine, 2010).

The relationship between gender inequality and IPV is often non-linear. As noted previously, a curvilinear line exists between IPV prevalence and women's status in society. In deeply unequal societies where women's low social status is either enshrined in law or heavily socialized, violence may not be needed to ensure women's subordination. Likewise, women in

highly egalitarian societies often have increased agency and the resources to challenge unequal social norms, reducing the prevalence of IPV in much of the rich world (Gracia, 2014; Pallitto & O'Campo, 2005; World Health Organization/ London School of Hygiene and Tropical Medicine, 2010). Therefore, violence is often highest in societies where women attempt to upend the norms of subordination and submission, causing those transitioning to levels of increased gender equity to have the highest rates of IPV (World Health Organization, 2013; World Health Organization/ London School of Hygiene and Tropical Medicine, 2010).

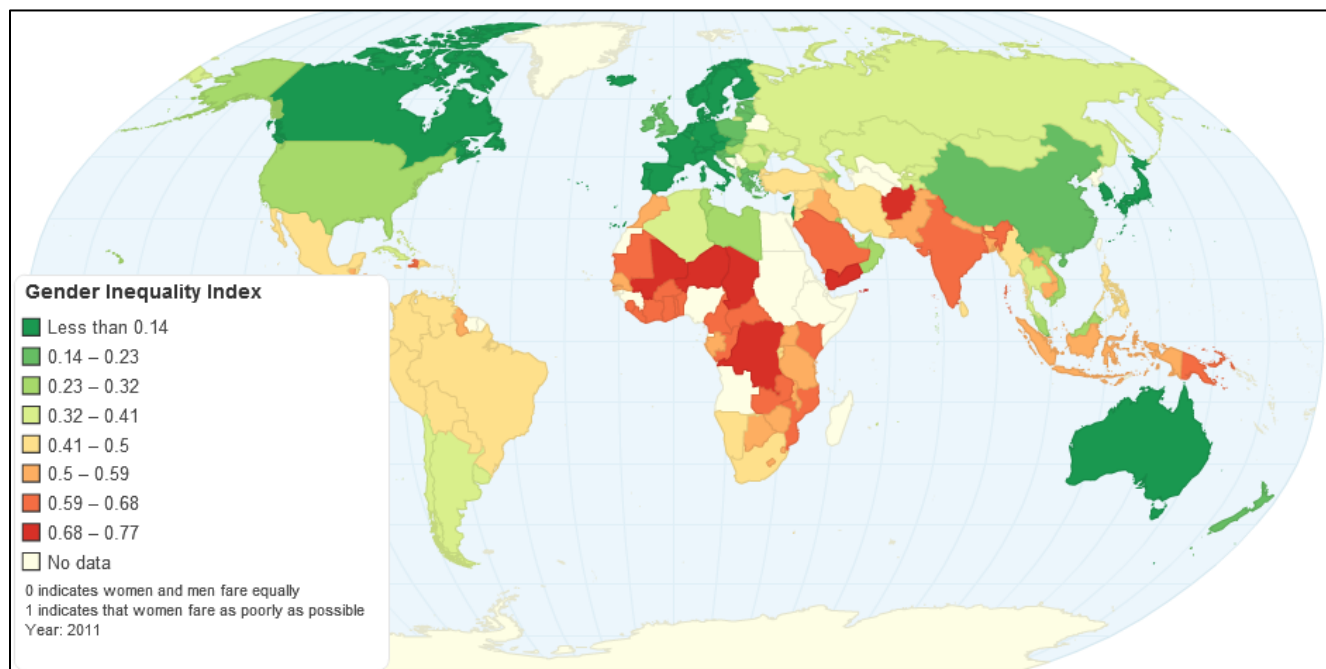
It should be noted, however, that these norms still exist in every society. In the United States, a country thought to be relatively egalitarian (see Figure 1), gender inequality permeates society, leading to things like unequal pay for women (Olivetti & Petrongolo, 2016). This inequality also leads to significant role-socialization for men as dominant beings (Connell & Messerschmidt, 2005; Courtenay, 2010; Oringher & Samuelson, 2011) and plays a significant role in both male-female (Derrick, 2014; Hughes, Bolis, Fries, & Finigan, 2015) and male-male IPV (Goldenberg et al., 2016). Regarding male couples, a jockeying for power in aspects of the relationship from finances (Hall et al., 2017) to sexual positioning (Finneran & Stephenson, 2014a) is likely due in part to the same gender dynamics that work to increase conflict in male-female couples (Goldenberg et al., 2016).

The Gender Inequality Index (GII) provides a useful metric to measure the level of gender inequality at a country level. Collected since 1995, the GII uses measures of reproductive health (maternal mortality ratio and adolescent birth rates), female empowerment (ratio of women to men in national legislative body and ratio of male to female secondary education attainment), and female economic status (male to female labour force participation rate) to measure gender inequality on a 0-1 scale, with a lower score indicating a lower level of

inequality (United National Development Programme, 2015). Country-level prevalence rates of IPV track with score on the GII across both space (geographically) and time (since 1995), supporting the underlying theme of this work that macrosocial forces such as gender inequality are fundamental causes of IPV (United National Development Programme, 2015).

The GII must be used with caution, however, since it cannot measure all aspects of gender inequality. For example, South Korea's GII is one of the highest in the world- on par with most of Western Europe (see Figure 3). Yet South Korean women face extreme wage and employment inequities as well as strict social scripts (Yoon, 2016)- factors not captured by the GII- that increase their risk of IPV (Cho, Choi, Choi, Bae, & Seon, 2018). The GII also masks large variations in country-level social norms affecting the lives of women. As an example, China's country-level GII is on par with that of the United States', but ethnic minorities in autonomous areas, such as the Uyghurs of Xi'an Province, often subscribe to social norms that are more patriarchal and unequal than China as a whole, which may have implications for the level of violence in these communities (Zang, 2017). Understanding these limitations, it is important to understand how macrosocial forces are at play in specific study communities before intervening (Ellsberg et al., 2001; Ellsberg et al., 2015).

Figure 3: Gender Inequality Index by Country, 2017



Normalization of Violence

The normalization of violence is the second of Jewkes' macrosocial factors critical to the existence of IPV (Jewkes, 2002). Normalization is often measured in LMIC using the Demographic and Health Surveys (DHS), which gauges whether women justify physical violence against them in several hypothetical scenarios (ICF International, 2013; Waltermaurer, 2012). Research at the individual level shows women in LMIC often justify violence in these scenarios as or more often than men (Hindin et al., 2008; Uthman et al., 2009; World Health Organization/ London School of Hygiene and Tropical Medicine, 2010), and tend to justify IPV more often the more they are exposed to it (Garcia-Moreno et al., 2005). This suggests an endemic, structural normalization of IPV in many LMIC. Among men, the justification of physical violence is shown to be associated with up to four times the odds of perpetrating it (Johnson & Das, 2009), highlighting the important relationship between justification and actual perpetration.

Again referring to social-ecological thinking, the normalization of violence in a society (as opposed to only within a relationship) has an independent effect on experiences of violence (Bronfenbrenner, 1992; L. L. Heise, 1998). When violence is accepted as a social norm within a community, abused partners may feel their personal opposition to the violence is unwarranted or that it is their duty to tolerate violence for the sake of maintaining the relationship (Jesmin, 2015; Waltermaurer, 2012). This, in turn, may lead to battering and a perceived inability to leave an abusive relationship over time. Unlike gender inequality, the normalization of violence is more often measured at the community, rather than the structural, level. In a seminal study on the topic, Koenig et al., (2006) found that living in a community with a higher degree of violence justification (i.e. a community-level factor) was associated with significantly higher odds of reporting IPV in India. Additional studies found that community-level acceptance of IPV muted the protective factor of higher education for women (Boyle et al., 2009) and Hatcher shaped high levels of violence among pregnant women in Kenya (Hatcher et al., 2013a). Despite strong theoretical support, some studies of women in LMIC found no association between acceptance of violence at the community level and experiences of IPV (Naved & Persson, 2005; Pallitto & O'Campo, 2005). There are still few studies of community-level normalization of violence in LMIC (VanderEnde et al., 2012) and none in male couples, warranting further research into how normalization of violence is associated with violence in these populations.

Since Jewkes' initial paper on the critical factors of IPV, additional community- and structural-level factors have been shown to shape the incidence of violence in LMIC women and male couples. The factors especially relevant to this body of work are reviewed below.

Minority Stress

First conceptualized by Meyer (1995), Minority Stress Theory posits that the social stress experienced by sexual minorities in a heteronormative society produces a chronically high allostatic load, which in turn leads to poor physical and mental health outcomes (Edwards & Sylaska, 2013; Finneran & Stephenson, 2014b; Flood, McLaughlin, & Prentice, 2013; Hatzenbuehler, Nolen-Hoeksema, & Erickson, 2008; McAdams-Mahmoud et al., 2014; Meyer, 1995). A growing body of evidence is finding that this social stress is also associated with IPV in male couples (Bartholomew et al., 2008; Finneran et al., 2012; Finneran & Stephenson, 2014b; Stephenson et al., 2013; West, 2012). Minority stress is discussed in detail in Chapter 3, but it is theorized that societal heteronormativity increases both proximal (i.e. subjective, internal stressors) and distal (i.e. objective, external) stressors, which can lead to IPV (Edwards & Sylaska, 2013; Edwards et al., 2015; Finneran & Stephenson, 2014a).

Community economic status

A growing body of literature suggests living in a poorer community is associated with experiencing IPV over and above the association between household-level poverty and IPV. While the exact mechanism for how community-level economic effects shape individual experiences of IPV is unknown, previous research has cited social disorganization theory as one potential reason for the connection between community-level poverty and IPV (VanderEnde, Yount, Dynes, & Sibley, 2012). This approach posits that community deprivation reduces cohesion and the ability to organize for the common good, leading to increases in crime and violence of all kinds- including IPV (Browning, 2002; VanderEnde et al., 2012). This may be reinforced by social learning, changing the parameters of acceptable behavior, perpetuating IPV as an acceptable way to resolve conflict or assert power (Kravdal, 2004). This finding is present

in both LMIC women (Ackerson et al., 2008; Boyle et al., 2009; Capaldi et al., 2012; Cunradi, Caetano, Clark, & Schafer, 2000; Gage, 2005b; Jewkes, 2002; Koenig et al., 2006) and MSM (West, 2012), though there is no literature on community-level poverty and IPV in Indigenous MSM specifically.

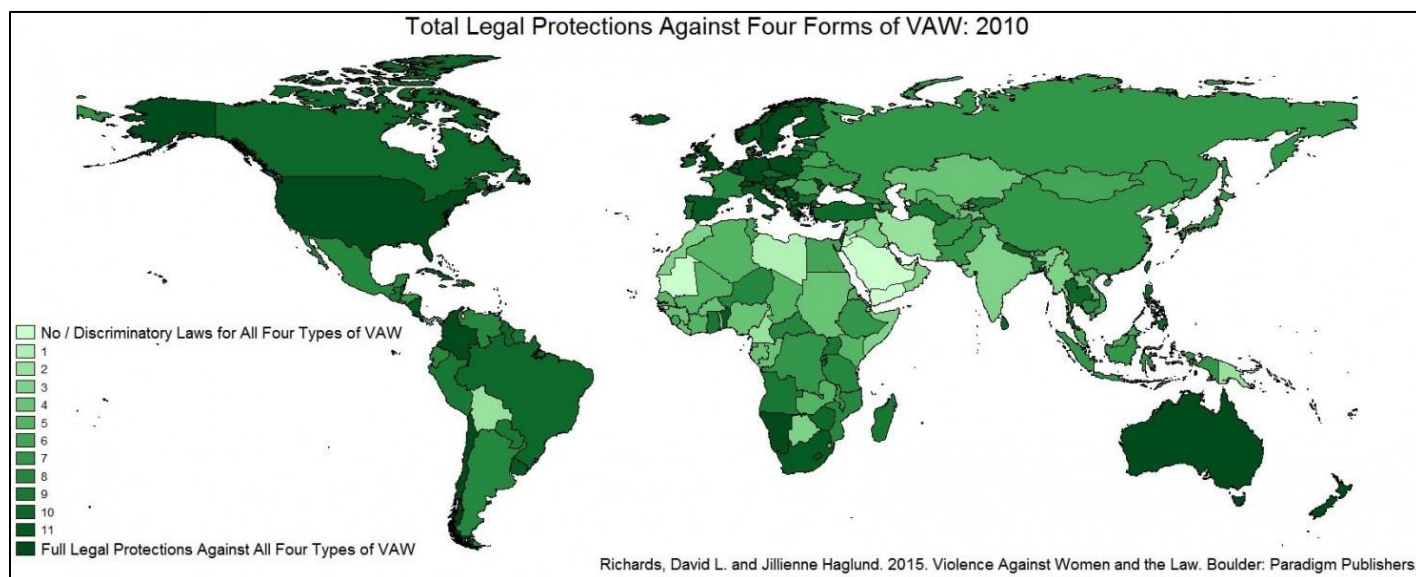
Other research suggests that a community's absolute level of poverty could be less important than its level of economic inequality (Hughes et al., 2015; Jewkes, 2002; J. Kim, Pronyk, Barnett, & Watts, 2008). Tumin (1953) first proposed the notion that economic inequality encourages hostility, leading to a breakdown in social cohesion and an increase in violence- including IPV. A study of 63 LMIC found strong correlations between a country's GINI index (a measure of socioeconomic inequality) and rates of violence, though it did not measure IPV specifically (Wood, 2006). Studies in the United States suggest an association between economic inequality and odds of experiencing sexual (Caetano, Ramisetty-Mikler, & Harris, 2010; Kawachi & Kennedy, 1997) and s physical (Wright & Benson, 2010) violence. Considering low- and middle-income countries are often more economically unequal than high-resource countries on the whole (World Bank, 2015), socioeconomic inequality likely plays a role in the increased prevalence of IPV in these countries and should be investigated further.

Policies/Regulations

Laws and policies influencing IPV include those at all levels of government that relate either to IPV specifically or to other community and societal-level factors such as gender equality and the normalization of violence. While these most often operate within the local sphere (i.e. workplace policies, local ordinances), national and international policies can also be associated with a person's risk for experiencing IPV.

Across LMIC, there is considerable variation in how nations approach intimate partner violence policies in male-female relationships. In an analysis of 196 countries measuring national-level policies against rape, sexual IPV, physical IPV, and sexual harassment, Richards and Haglund (2015) give a comprehensive snapshot of which countries have enacted IPV and sexual violence legislation (see Figure 4).

Figure 4: Legal Protections for Four Types of IPV in Male-Female Relationships (2015)



As with GII, the laws and policies governing IPV largely track with its incidence (World Health Organization, 2013). In countries where IPV remains high but laws and policies offer full legal protections (i.e. South Africa, Colombia), this may reflect recent efforts by governments to recognize the harms of IPV to society and reduce its normalization. Among LMIC, Western Asian countries have the weakest legal frameworks regarding IPV. Despite comprising 10% of the total number of countries in the analysis, this region accounted for 21% of the nations without laws against sexual IPV and 44% of the nations without laws against physical IPV (Richards & Haglund, 2015). Many of these countries go further, establishing specific

roadblocks to women attempting to persecute their perpetrators, such as legal ramifications for filing an “unproven” case of IPV or sexual violence (Cornell Law School, 2017; Jewkes et al., 2002). There are noticeable exceptions for LMIC that have overhauled their national constitutions to have a strong focus on human rights, including Chile, Colombia, Namibia, and South Africa. Conversely, some countries are regressing in terms protections against IPV, as evidenced by a 2016 decision by the Russian Duma to decriminalize domestic violence among first-time perpetrators who do not cause ‘serious physical harm’ to their partners or children (Human Rights Watch, January 23, 2017). This will likely have ramifications for women and affect not only levels of violence experienced in Russia, but the structural climate regarding the normalization of violence.

Referring to the outermost layer of the social-ecological model- the change in macrosocial forces over time (Bronfenbrenner & Ceci, 1994)- Richards and Haglund (2015) found that countries are more likely to adopt full legal protections for IPV as the time since a country ratified CEDAW increases- nearly 25% more likely at 10 years post-ratification. Similarly, countries who did not fully ratify CEDAW had significantly weaker national laws regarding IPV and sexual violence. The analysis also found for every 10% increase in the percentage of women in the national legislature, countries are approximately 10% more likely to have full legal protections for IPV and sexual violence. This supports the United Nations’ assertion that women’s representation in national government is directly related to improved country-level gender equity (United National Development Programme, 2015), which is in turn related to the incidence of IPV.

In the United States, laws regarding the legal status of same-sex couples have changed drastically in recent years. The repeal of the Defense of Marriage Act and the Supreme Court

ruling in *Obergefell v. Hodges* legalized same-sex marriage in the United States in 2015 (Supreme Court of the United States, 2015). Prior to this case, the principle piece of legislation dictating national policy against IPV was revised to include same-sex couples (Congress of the United States of America, 2013). During its reauthorization in 2013, the Violence Against Women Act (VAWA) named LGBT people as an underserved population in need of specific attention to address IPV, preventing VAWA grantees from discriminating against survivors of violence based on sexual orientation or gender identity when providing IPV-related services (Congress of the United States of America, 2013). During this time, Congress also tasked the Office of Violence Against Women (OVW) with directives to include LGBT victims of IPV in all future services and grant-making activities (Stapel & Carey, 2013). While these legal protections are universal for male couples residing the USA, the benefits of improved legal policies are not universally applied. Conservative social norms in many parts of the country still prevent male couples from enjoying the improved social inclusion envisioned by these laws, potentially leading to increased levels of minority stress and IPV (Metheny & Stephenson, 2018b).

State-level laws regarding IPV among same-sex couples remain less comprehensive—especially concerning orders of civil protection. Also known as restraining orders, civil protection order regulations are left to the states, and several US states restrict the language of these laws to include only male-female couples. For example, South Carolina limits civil protection orders to individuals related by, “blood, marriage, or male and female cohabitants”, and ongoing legal battles are underway to attempt legally married same-sex couples from obtaining these orders (American Bar Association, 2016). Similarly, North Carolina, Virginia, and Louisiana leave the interpretation of civil protection order statutes to the discretion of

individual judges, though legally married same-sex couples may qualify for civil protection orders under the current definition (American Bar Association, 2016). Calls by the Trump administration for deep funding cuts to the Office of Violence Against Women and the Department of Justice's Violence Against Women Grants and Legal Services Corporation (Bolton, 2017) create uncertainty for the future of these programs and call into question national-level protections for MSM who experience IPV.

Although 75% of American Indians live outside reservations (Norris, Vines, & Hoeffel, 2012), tribal laws regarding IPV in male-male couples affect a sizeable portion of this population. Due to their unique legal status, Indigenous MSM residing on tribal land may not be under the jurisdiction of federal laws protecting them from predatory male partners or allowing them to marry (Brewer, 2018; Zug, 2016). For instance, only 35 of the 567 federally recognized tribal councils recognize same-sex marriage (Brewer, 2018). While most citizens of tribal nations have attitudes regarding LGBTQ2S people that are more progressive than their tribal nation's policies (Brewer, 2018), the lack of equitable policies for Indigenous MSM in these areas likely has a negative effect on levels of minority stress. Efforts to reintroduce traditional Indigenous views of gender and sexual fluidity that existed in most Native communities prior to colonialization recognize that contemporary discriminatory policies stem largely from the forced conversion to Christianity and destruction of Indigenous knowledge (Brewer, 2018; Zug, 2016). Once again, the paucity of research on Indigenous MSM precludes a discussion of how tribal policies are associated with IPV in Indigenous MSM specifically.

Policies aimed at changing social norms of violence normalization, gender inequality, and heterosexism are essential to reducing the prevalence of IPV (World Health Organization/London School of Hygiene and Tropical Medicine, 2010). In LMIC, greater legal protections

against IPV and non-partner sexual violence are related to increased gender equity, Human Development Index Scores, and lower female HIV rates across LMIC (Richards & Haglund, 2015). In both women and MSM, the existence of protective policies are key to the primary prevention of IPV through encouraging deterrence and working to change social norms. The absence of these policies presents a community and societal-level risk factor for increased violence (World Health Organization/ London School of Hygiene and Tropical Medicine, 2010)

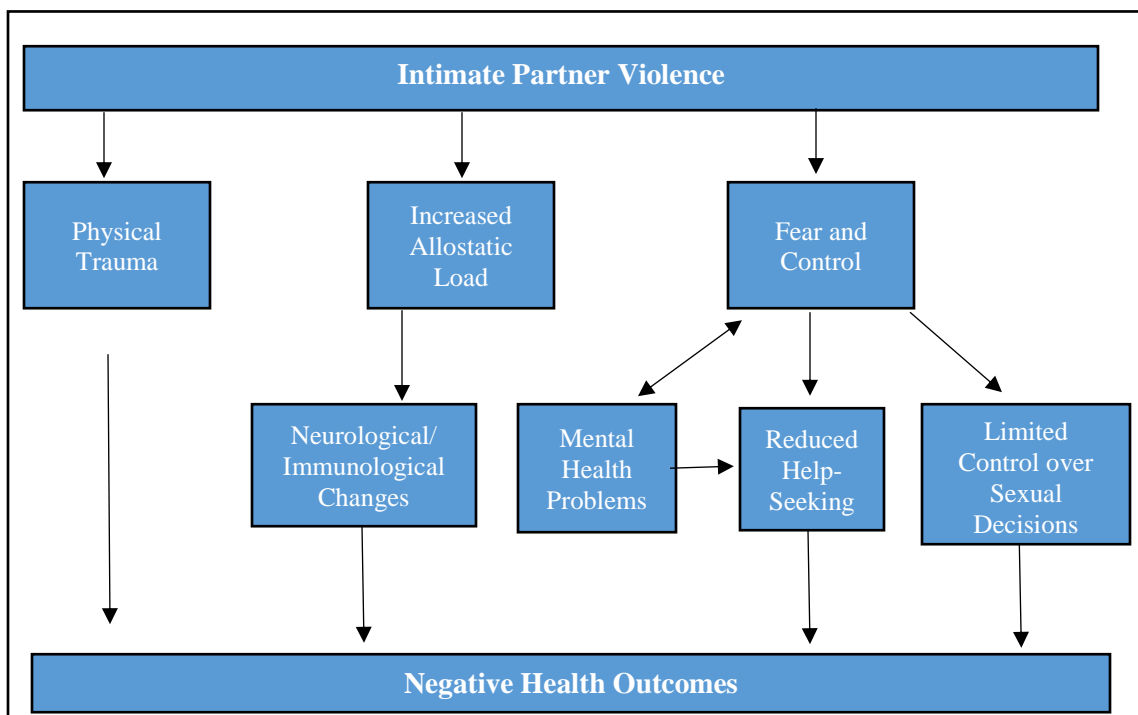
Health Implications of Intimate Partner Violence

Exposure to IPV is associated with a host of negative physical, mental, sexual, and reproductive health outcomes. Negative physical health effects span a wide range of outcomes from trauma related to the abuse itself (J. Campbell, 2002; Garcia-Moreno et al., 2005; World Health Organization, 2016), to hypertension (Coker et al., 2000) and somatoform disorders such as gastrointestinal illnesses (J. Campbell, 2002; World Health Organization, 2012) and fibromyalgia (World Health Organization, 2016). Negative mental health effects of IPV include depression, post-traumatic stress disorder, and anxiety (J. Campbell, 2002; World Health Organization, 2016), as well as sleep and eating disorders (World Health Organization, 2012; World Health Organization/ London School of Hygiene and Tropical Medicine, 2010) and suicidal ideation (Garcia-Moreno et al., 2005; S. L. Martin, Macy, Sullivan, & Magee, 2007; World Health Organization, 2016). This section deals largely with the sexual and reproductive health consequences of IPV, which are currently the most well-understood in the populations of interest. However, the pathways by which IPV likely impacts sexual and reproductive health likely extend to other negative health effects as well.

How does IPV negatively affect health?

Two main pathways exist to explain the effects of IPV on health. These include 1) a direct pathway through the physical or sexual trauma experienced by many victims of physical and sexual IPV; and 2) an indirect pathway consisting of negative responses to the stress, fear, and control present in abusive relationships. This second pathway is envisioned as having two branches- one dedicated to the biological implications of increased stress responses, and the other to the limited sexual and reproductive control and/or reduced healthcare seeking behavior found among many victims of IPV (J. Campbell et al., 2002; J. C. Campbell et al., 2008; Finneran & Stephenson, 2013; Jewkes, 2002; World Health Organization, 2013; World Health Organization/ London School of Hygiene and Tropical Medicine, 2010) (see Figure 5).

Figure 5: Pathways from Intimate Partner Violence to Negative Health Implications



Physical trauma leads directly to poor sexual health outcomes via injuries sustained during physical and sexual IPV such as vaginal or rectal lacerations, which are shown to increase susceptibility to disease transmission (Ghosh et al., 2011; Jejeebhoy, Santhya, & Acharya, 2013; Krug, 2002; Liebschutz, Feinman, Sullivan, Stein, & Samet, 2000; Stephenson, Koenig, & Ahmed, 2006; World Health Organization, 2013). These physical injuries increase blood flow and immune response to the site of injury, allowing for greater systemic uptake of bacterial and viral pathogens. Apart from direct trauma through forced sex or physical violence, perpetrators have also endangered the health of their partners through not disclosing a positive serostatus and forced injections with seropositive blood products (Lichtenstein, 2005).

The first branch of the indirect pathway considers the biological stress responses to IPV and their impact on sexual and reproductive health outcomes. Increased stress from IPV is shown to be associated with alterations to the hypothalamic-pituitary-adrenal (HPA) axis, prolonged hyperactivation of which causes accelerated cell death (apoptosis), leading to mental, somatoform, and chronic illnesses (Radtke et al., 2011; J. Y. Wong, Fong, Lai, & Tiwari, 2014). Additional endocrine responses stemming from exposure to physical, sexual, and psychological violence include increases in cortisol and dehydroepiandrosterone (DHEA) (Breiding, Black, & Ryan, 2008; Inslicht et al., 2006; Pico-Alfonso et al., 2004; Pico-Alfonso et al., 2006). The increased allostatic load caused by chronically high levels of these hormones is associated with complex, interconnected neural responses that can cause decreased neuronal activity and structural changes in critical brain structures such as the hippocampus, amygdala, and prefrontal cortex (Miller, 1998; A. Vyas, Mitra, Shankaranarayana Rao, & Chattarji, 2002; J. Y. Wong et al., 2014). However, due to frequent comorbid traumas in abused women, better-controlled

studies are needed to ascertain the exact effect of IPV on neuroanatomical changes (J. Y. Wong et al., 2014).

The stress caused by IPV is also shown to have a measurable impact on immune functioning. Current understanding indicates a high allostatic load caused by hyperactivation of the HPA axis may cause immune suppression through reducing the production of cytokines (Newton, Fernandez-Botran, Miller, & Burns, 2014; Pace & Heim, 2011; C. M. Wong, 2002), promoting production of inflammatory markers such as C-reactive protein (Heath et al., 2013), and decreasing levels of circulating immunoglobulin A (Herbert & Cohen, 1993; Madrigal, Cardenal, Téllez, & Ortiz-Tallo, 2012), all of which decrease a person's ability to fend off infection. One recent study suggests the increased stress of physical, sexual, and psychological IPV, especially over the long-term, may have direct implications for HIV susceptibility through increased CD4⁺ T-cell activation in victims of IPV who also self-report HIV risk behaviors such as intravenous drug use, unprotected sex, or a recent STI (A. S. Kalokhe et al., 2016). Though exploratory in nature, this study is the first to suggest a direct link between IPV and HIV susceptibility.

The interactions between IPV and neurological and immunological responses are complex, requiring more research on the alterations to the endocrine system, HPA axis, and the neuroanatomy itself to understand comprehensively the extent to which IPV affects the biological processes of victims that may lead to negative health outcomes. Further, all of the current biological research has been conducted on female victims of male-perpetrated IPV, leaving a gap in the literature on how these processes affect male victims of IPV- especially those in male-male partnerships.

The second branch of the indirect pathway relates to the fear and control that exists in many abusive relationships (World Health Organization, 2013). Considering IPV is predicated on a desire for power and control by the perpetrator, it follows that controlling behaviors likely occur alongside, as well as independent of, other types of IPV (Garcia-Moreno et al., 2006; Hindin et al., 2008; Krug, 2002; World Health Organization/ London School of Hygiene and Tropical Medicine, 2010). These controlling behaviors may reduce the victim's autonomy and ability to control his or her own sexual decision making, including whether or not to have sex and whether safe-sex practices such as contraception (for women), pre-exposure prophylaxis, or condoms will be used (Finneran & Stephenson, 2014a; Heintz & Melendez, 2006; L. Heise, Moore, & Toubia, 1995; Kacanek et al., 2013; Moore, Frohwirth, & Miller, 2010; Stephenson et al., 2011). Behavior exhibited by controlling partners may also reduce victims' access to healthcare through limiting social interaction, monitoring his or her behavior, and expecting permission before seeking any type of health care (Blanc, 2001b; World Health Organization/ London School of Hygiene and Tropical Medicine, 2010). Access to sexual and reproductive health care can be especially vulnerable considering the additional suspicions of infidelity, mistrust, and jealousy that surround sex and are exhibited by many abusive partners alongside controlling behaviors (Chan, 2009; Finneran & Stephenson, 2014a; Tang & Lai, 2008; World Health Organization/ London School of Hygiene and Tropical Medicine, 2010).

Through exploiting the unbalanced power dynamics present in abusive relationships, victims' fear of violence reprisal often outweighs their motivation for seeking care for sexual and reproductive health needs. This reduced help-seeking drive is often due to the lack of autonomy present in many abusive relationships, negative mental health sequelae of IPV (i.e. depression and anxiety), or both (Allendorf, 2010; Goo & Harlow, 2012a; Haque, Rahman, Mostofa, &

Zahan, 2012; Koski, Stephenson, & Koenig, 2011; Meiksin et al., 2015b; Metheny & Stephenson, 2017b; Ononokpono & Azfredrick, 2014a; Solanke, 2014; A. J. Taft, Powell, & Watson, 2015). While there is little existing evidence for this mechanism in male-male couples, the available literature indicates it likely functions similarly to male-female couples (McClennen et al., 2002; Merrill & Wolfe, 2000). However, it is possible that the more fluid power dynamics (Goldenberg et al., 2016) and bi-directionality of violence (Stiles-Shields & Carroll, 2015a) present in many male couples may alter how MSM respond to intimidation, fear, and control in their relationships. Regardless, there are likely two indirect mechanisms of action that endanger the health of IPV victims through reducing healthcare access.

Using the two main pathways by which IPV likely affects sexual and reproductive health outcomes in LMIC women and MSM outlined above, this section will now explore the current evidence for the association between IPV and two specific health outcomes. The list is meant to be illustrative of the ways in which IPV can lead to negative health implications in the target populations.

HIV and Sexually Transmitted Infections

Evidence from three cohort studies of LMIC women estimate significantly greater odds of incident HIV (Jewkes et al., 2010a), syphilis (Weiss et al., 2008b), and gonorrhea (Zablotska et al., 2009) infection among women reporting any type of IPV. The World Health Organization estimates women in LMIC who report physical and/or sexual IPV have 52% greater odds of seroconverting than non-abused women (World Health Organization/ London School of Hygiene and Tropical Medicine, 2010). Additional studies using racially and ethnically diverse samples of women support these findings (J. Campbell et al., 2002; Coker et al., 2000). Among MSM, cross-sectional data from the US indicates victims of IPV have significantly greater odds of

reporting any type of STI than men who are not abused (Greenwood et al., 2002; Houston & McKirnan, 2007; Li, Baker, Korostyshevskiy, Slack, & Plankey, 2012; Parsons, Grov, & Golub, 2012; Stall et al., 2003). It should be noted that data from MSM is less robust, and some evidence suggests the relationship between IPV and HIV status can be attenuated by other risk behaviors such as recreational drug use (Li et al., 2012). However, the current evidence points to victims of IPV having a greater likelihood of acquiring HIV or another STI than those who are not abused.

Sexually transmitted infections may be directly transmitted during forced vaginal or anal sex with a positive abuser. In heterosexual encounters, women are biologically more susceptible to acquiring HIV than men due to the vagina's large surface area of fragile mucosal membranes and the higher viral content present in semen compared to vaginal secretions (J. C. Campbell et al., 2008). This combination translates to a higher probability of transferring the STIs from a seropositive male partner to a seronegative female partner. In both men and women, thin rectal tissue can be easily torn during anal sex, exposing this area's high density of blood vessels and immune cells, thus increasing the probability of transmission (United States Department of Health and Human Services, 2016). However, evidence from studies with both populations indicates physical violence is independently associated with HIV and STI transmission, suggesting sexual IPV does not fully explain how IPV is linked to these indicators (J. C. Campbell et al., 2008; Greenwood et al., 2002; Heintz & Melendez, 2006; Pallitto, Campbell, & O'Campo, 2005; World Health Organization/ London School of Hygiene and Tropical Medicine, 2010). The indirect pathways of reduced sexual decision making and increased fear and control (see Figure 3) may increase the probability of acquiring HIV or another STI through inconsistent use of condoms (J. C. Campbell et al., 2008; Dunkle et al., 2004; Heintz & Melendez, 2006;

Jewkes et al., 2006b; Jewkes, Dunkle, Nduna, & Shai, 2010b; Stephenson & Finneran, 2017b; Watts, 2012) and/or PrEP in the case of HIV (Cohen et al., 2015; Roberts et al., 2016).

Negotiating condom use in a violent relationship may infer accusations of infidelity on the part of either partner, potentially leading to a reprisal of violence (Bergmann & Stockman, 2015; Jewkes et al., 2006b). The reduced help-seeking drive present in many people exposed to IPV may also deter them from approaching their partners about using condoms, feeling that doing so is a futile effort that may result in more violence.

IPV is also related to acquiring STIs via its association with increased sexual risk-taking behaviors by victims of violence. Among female victims of abuse, there is a strong body of evidence supporting the association between IPV exposure and sexual risk-taking via a stress-response mechanism (J. C. Campbell et al., 2008; Coker, 2007; World Health Organization/ London School of Hygiene and Tropical Medicine, 2010). Among MSM, IPV is shown to be associated with a higher number of condomless anal intercourse partners (Duncan et al., 2016) as well as condomless anal intercourse in the past three months (Parsons et al., 2012), six months (Houston & McKirnan, 2007), and at last sex (Finneran & Stephenson, 2014b; Stephenson & Finneran, 2017b). In both populations, the psychological trauma of IPV may lead to impaired risk assessment and/or new sex partners after leaving an abusive relationship, which in turn may lead to greater sexual risk taking (J. C. Campbell et al., 2008; Mustanski, Garofalo, Herrick, & Donenberg, 2007; World Health Organization/ London School of Hygiene and Tropical Medicine, 2010). Evidence from male-female partnerships suggests a desire to regain control of sexual decision making after exposure to violence may also play a role (Coker, 2007). In MSM, this association may be partly due to stress-response behaviors for dealing with minority

stressors such as homophobic discrimination and heteronormative social pressure (Finneran et al., 2012; Finneran & Stephenson, 2014b; Stephenson, de Voux, & Sullivan, 2011).

Pregnancy and Delivery Complications

For female victims of IPV, sexual and reproductive health consequences can extend to pregnancy. Evidence from LMIC indicates IPV is associated with poor pregnancy-related health outcomes for the mother including unintended pregnancy (Han & Stewart, 2014b; Pallitto et al., 2013; Pallitto et al., 2005; Silverman, Gupta, Decker, Kapur, & Raj, 2007), abortion (Han & Stewart, 2014b; Pallitto et al., 2013; Silverman et al., 2007; Stephenson, Jadhav, Winter, & Hindin, 2016), and reduced reproductive health care usage (Ahmed et al., 2006; Haque et al., 2012; Metheny & Stephenson, 2017b; Ononokpono & Azfredrick, 2014b). Adverse maternal health outcomes due to IPV can be explained by the direct physical and sexual violence that marks many abusive relationships (Pool, Otupiri, Owusu-Dabo, de Jonge, & Agyemang, 2014; Yoshikawa et al., 2012) as well as the fear and control that can lead to reduced uptake of care (Goo & Harlow, 2012b; Metheny & Stephenson, 2017b; M. Rahman, Nakamura, Seino, & Kizuki, 2012a). Emotional IPV in the form of sexual coercion can lead to reduced use of contraception, which increases the odds unintended pregnancy and of acquiring STIs (Chandra, Satyanarayana, & Carey, 2009; L. Heise et al., 1995; Kalichman, Williams, Cherry, Belcher, & Nachimson, 1998; N. Stanley et al., 2018).

Conclusion: IPV is not a static concept, and the evolution of research on this complex phenomenon has produced a body of work numbering thousands of articles, books, and policies. Originally consisting only of physical IPV between husbands and wives (i.e. Straus, 1979), the concept of IPV has broadened to include sexual and psychological abuse, controlling behaviors, as well as violence among non-married and same-sex intimate partners. Despite decades of

research and intervention, IPV continues to be a major public health concern, especially in marginalized populations, such as women in LMIC and Indigenous MSM, that experience the compounding effects of multiple structural stressors (Blosnich, Gordon, & Fine, 2015; T. V. Johnson, Abbasi, & Master, 2013).

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Chapter 3: Theoretical Perspectives of IPV and Theoretical Approach

While the previous chapter highlighted similarities between LMIC women and MSM related to the correlates and sexual health implication of IPV, there are important differences in the theoretical grounding for why IPV exists in these populations. Two different theories are used to explain the different structural correlates of IPV in LMIC women and MSM. The first section of this chapter outlines a social-ecological approach (L. L. Heise, 1998), which guides the study of IPV in LMIC women, while the second section adapts the minority stress model (Meyer, 1995; Meyer, 2003) to approach IPV in male couples. Both of these theories are viewed through the lens of fundamental cause theory (Hatzenbuehler et al., 2013; Link & Phelan, 2001), which highlights the primacy of structural factors when studying health outcomes in marginalized populations. These theories should be viewed as a lens through which to view IPV and not as the only valid theory of violence in these populations. The concluding section provides an overview of several competing theories to social-ecological thinking and minority stress theory in order to highlight their limitations, as well as to illustrate the breadth of lenses through which researchers view this complex phenomenon.

Studying IPV in Male-Female Relationships in LMIC: Social-Ecological Theory

Chapter 1 established IPV as a complex phenomenon consisting of factors at several levels, including the individual, dyadic, community, and society. The idea of the environment as a multilevel structure is the basic tenet of social-ecological theory, first introduced in the late

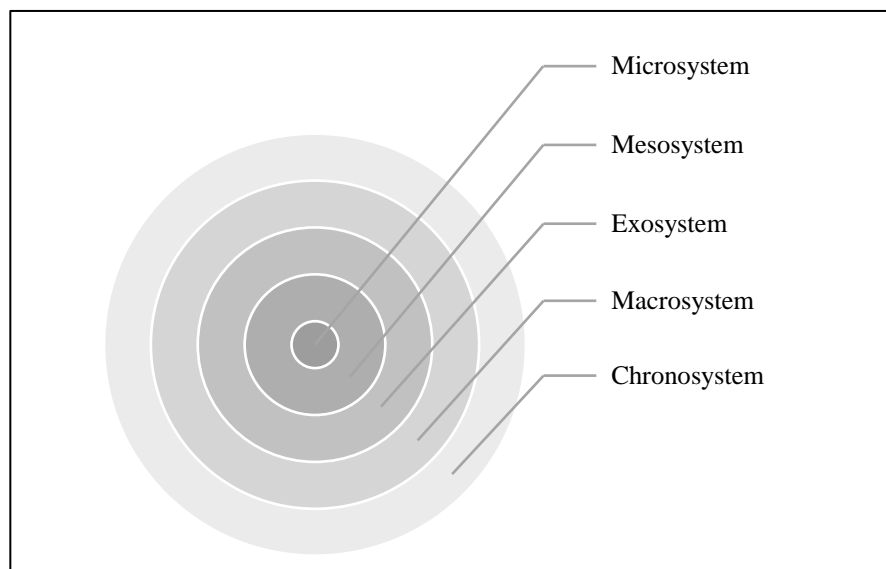
1970s by researchers in developmental psychology (Belsky, 1980; Bronfenbrenner, 1979; Garbarino & Crouter, 1978). Social-ecological theory was developed as a reaction to the prevailing notions of developmental psychology at the time, in which most knowledge was gleaned from controlled experiments, or as Bronfenbrenner himself said “the strange behavior of children in strange situations, observed by strange adults for the briefest possible periods of time” (Bronfenbrenner, 2004). To expand this thinking, Bronfenbrenner proposed a conceptual framework rooted in the Gestalt philosophers of the early 20th century. Key among them was the German philosopher Karl Lewin, who was the first to posit the notion of behavior as a product of an interaction between individuals and their environments (Bronfenbrenner, 1979; Lewin, 1939). While Lewin’s original model did not include a multilevel conceptualization of the environment, Bronfenbrenner and other social-ecological thinkers drew from the little empirical research that existed at the time to point to evidence of an environment composed of nested rings, not unlike a “set of Russian dolls” (Bronfenbrenner, 1979, p.3). The resulting multilevel framework led to a paradigm shift in developmental psychology and spawned a new direction of inquiry that was quickly adapted to understanding other complex phenomena including child abuse, interpersonal violence, and ultimately, IPV (Krug, 2002).

Ecological Systems Theory

Two propositions underlie Bronfenbrenner’s original social-ecological model, dubbed Ecological Systems Theory after his assertion of the primacy of the broader environment (i.e. the ‘ecology’) in human development (Bronfenbrenner, 1979). The first proposition states that human development is a product of progressively complex and reciprocal interactions between humans and their immediate environment (Bronfenbrenner, 2004; Bronfenbrenner, 1979; R. Campbell, Dworkin, & Cabral, 2009). These interactions are referred to as “proximal

processes”. The second proposition states that the, “form, power, content, and direction” of the interactions between person and their immediate environment vary as a function of a broader environmental (i.e. structural) context (Bronfenbrenner, 2004). That is, Ecological Systems Theory stipulates that the environment is divided into a set of nested, concentric rings starting with the most proximal (microsystem) and working outward through the mesosystem and exosystem to the macrosystem, and that factors present in outer layers influence the individual behaviors occurring at the inner layers (see Figure 6).

Figure 6: Bronfenbrenner’s Ecological Systems Theory (Bronfenbrenner, 1979)



The microsystem deals with bio-psycho-social aspects of the person and direct interactions within the immediate environment, including with friends, family, and peers (R. Campbell et al., 2009). It deals not only with the objective properties of the environment, but also with the ways in which these properties are *perceived* by those in that environment (Bronfenbrenner, 1979). This reflects the constructivist view that the consequences of perceived reality are indeed objective (Bronfenbrenner, 1979; Charmaz, 2006). The concept of the

microsystem also involves the notion of role, which is especially relevant when Ecological Systems Theory is adapted to the use of IPV. Defined as “a set of behaviors and expectations associated with a position in society” (Bronfenbrenner, 1979, p.25), role can be thought of as the individualization of a social script. It is a personal identity that is heavily influenced by each proceeding level of the model and is discussed in Chapter 1 as a correlate of IPV at every level (Adegoke & Oladeji, 2008; Hatcher et al., 2013a; Jesmin, 2015).

The second layer of Bronfenbrenner’s model is the mesosystem. Consisting of relationships between two or more settings, the mesosystem is a constellation of each person’s microsystems (Bronfenbrenner, 1979). In developmental psychology, mesosystems multiply as a child is socialized, such that when a child begins kindergarten, her mesosystem now comprises interactions with her bio-psycho-social self and her family members, but also those with peers at school, her teacher, and so forth. This constellation of mesosystems is multidirectional. When an individual is the link between two mesosystems, such as between a child’s parents and his teacher, the child is said to be the ‘primary link’, while the parents and teachers are considered ‘supplementary links’. Interactions between mesosystems in the absence of a primary link (such as a parent-teacher conference) are mesosystems with the child being an “indirect linkage” (Bronfenbrenner, 1979).

Moving outward, the exosystem refers to one or more settings that affect, or are affected by, the developing person, but do not include the developing person as an active participant (Bronfenbrenner, 1979). In Bronfenbrenner’s original model, these included organizations and social systems such as the parents’ place of work, the local school board, and national politics. Exosystems often consist of “power settings” (Bronfenbrenner, 1979, p.256), and can influence resource allocation to (and therefore decision making of) those in the mesosystem and

microsystem. He further hypothesizes that the exosystem's ability to impact the developing individual varies inversely with the number of intermediary linkages (Bronfenbrenner, 1979). For example, drawing on ethnographic studies with racial and ethnic minorities, Bronfenbrenner makes the case that the greater number of intermediary linkages (i.e. distance from power settings) for minorities in the United States places them at a social and economic disadvantage (Bronfenbrenner, 1979). For example, the gerrymandering of congressional districts in many U.S. states increases the intermediary linkages between individuals and their representatives in Congress. This increases their distance from (i.e. say in) governmental decision-making.

The consistency with which this occurs to racial minorities points to a larger "blueprint" of racism permeating American society as a whole. This and other blueprints comprise the macrosystem, which refers to the larger, structural constructs in a society (Bronfenbrenner, 1979). Some aspects of the macrosystem are society-specific while others are more universal. For example, the United States and Canada differ on the concept of health as a human right, reflecting a macrosystem component that differs between two otherwise similar societies, based on the social blueprint for universal access to healthcare. However, healthcare quality and access for poor, Indigenous, and minority residents of both countries is markedly worse than for upper-class residents, reflecting broader constructs of classism and racism as intrasocietal constructs that affect individuals' health- regardless of whether it is enshrined at the exosystem as a human right. Returning to the notion of role (i.e. social script), elements of the macrosystem provide blueprints for the multiplicity of roles (based on race, gender, class, etc.) fulfilled by individuals at the microsystem, each of these trickling down through the exo- and mesosystems to affect an individual's development. For instance, society's macrosystemic notion of gender roles in the

influences which toys are marketed towards girl children (e.g. dolls) versus a boy child (e.g. trucks, sports equipment).

The fifth ring of Bronfenbrenner's model is the chronosystem, which refers to changes in the ecological system over time. This encompasses changes in culture or policy over time that may affect an individual's development (Bronfenbrenner, 2004). As an example, the growing acceptance of sexual minorities in society and the subsequent evolution of policies (e.g. marriage equality) has shaped how included LGBT people feel in American society (Metheny & Stephenson, 2018b). It also refers to how a person's acceptance of this wider societal evolution may differ according to the structural environment under which ideas about LGBT people were formed. The chronosystem also encompasses the concept of ecological transitions- shifts in roles or settings that occur throughout life (Bronfenbrenner, 1979). In child development, these may include starting school or the arrival of a younger sibling, while marriage, moving to a different community, or beginning parenthood constitute significant role shifts in adults (Bronfenbrenner, 1979; Bronfenbrenner, 1992).

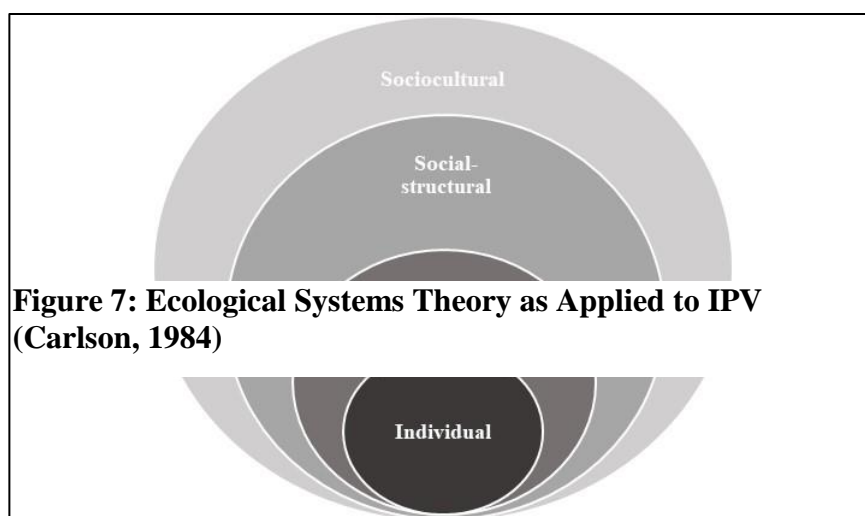
Early Adaptations of Ecological Systems Theory

Ecological Systems Theory outside of child development considered the multilevel correlates of child abuse. Adapting the model involved integrating the individual experiences and beliefs of parents into the primary microsystem in which the developing child exists (i.e. the family) (Belsky, 1980; Cicchetti & Toth, 1995; Garbarino & Crouter, 1978). Considering the importance of the family in early child development, this adaptation removes the mesosystem, collapsing it inside a two-pronged exosystem consisting of the parents' workplace and the family's neighborhood characteristics (Belsky, 1980). Following Belsky's adaptation, a myriad of health behaviors previously thought to largely left to individual choice have been adapted to

encompass interpersonal, community, and structural effects.(J. Sallis, Owen, & Fisher, 2008). These range from acknowledging how the built environment impacts individuals' physical activity (Biddle & Mutrie, 2007; Burton, Turrell, Oldenburg, & Sallis, 2005; Humpel, Owen, & Leslie, 2002; N. Owen et al., 2007; Sami et al., 2013), to state and national policies governing tobacco use and their impact on individual smoking cessation (J. Sallis et al., 2008), the role of macrosocial forces in shaping Type II diabetes self-management in racial minorities (Fisher et al., 2005; McElfish et al., 2016) and the role of “food deserts” in obesity (Blanchard et al., 2005; Egger & Swinburn, 1997).

Application of Social-Ecological Theory to Intimate Partner Violence

Social-ecological theory began to be applied to the study of IPV shortly after the publication of Bronfenbrenner's original theory (1979). While pre-Bronfenbrenner theories of IPV focused largely on one level of the social-ecological model (e.g. the individual), adaptation of Ecological Systems Theory allows for the simultaneous examination of multiple spheres of influence (Ali & Naylor, 2013; B. E. Carlson, 1984; Krug, 2002). Carlson's 1984 adaptation of Ecological Systems Theory to IPV relabeled the levels of the model and eliminated the chronosystem. Instead of Bronfenbrenner's microsystem, mesosystem, exosystem, and



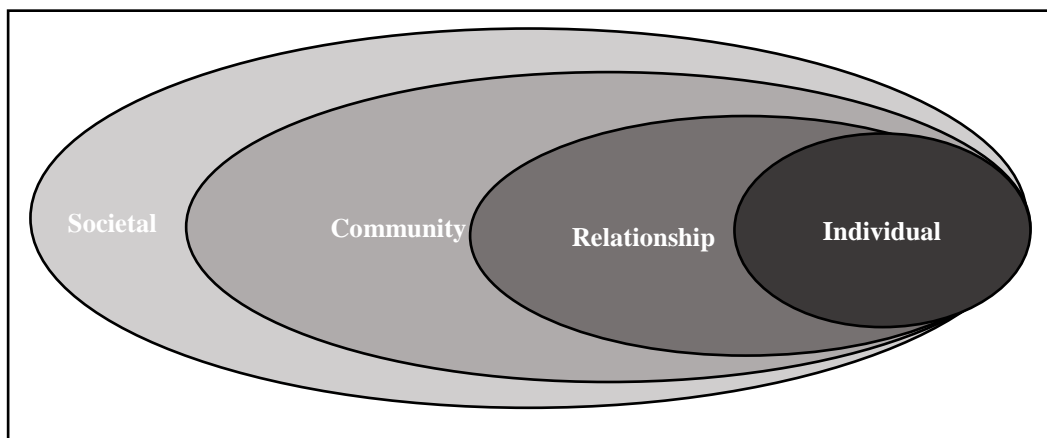
macrosystem shown in Figure 6, Carlson's model includes the individual, family, social structural, and sociocultural levels (see Figure 7). Importantly, Carlson's adaptation of the social-ecological model allows for both correlates of the experience and perpetration of IPV to be included parsimoniously in a single model, a feature that has remained a part of social-ecological theories of IPV ever since (World Health Organization/ London School of Hygiene and Tropical Medicine, 2010).

Carlson's changes to the Bronfenbrenner's structure reflects the original application of Ecological Systems Theory to child development. Originally, the innermost layer of the model reflected the immediate surroundings of the child in addition the bio-psycho-social self, with the mesosystem acting as a compilation of these interpersonal relationships into a single sphere of influence (Bronfenbrenner, 1979). Reflecting the fact that adults have more extensive lived experiences than children do, and that these are important components of IPV risk, Carlson redefined the innermost layer to be specifically the individual factors "each adult brings with him or her to the couple relationship" (B. E. Carlson, 1984, p.572). The second layer (the family) then becomes the immediate sphere of influence outside the partner, including dynamics occurring in the nuclear family unit, but not with outside social networks as in Bronfenbrenner's model (B. E. Carlson, 1984). The socio-structural and socio-cultural levels remain largely the same as Bronfenbrenner's exosystem and macrosystem, reflecting power centers and community-level effects at the socio-structural levels and structural forces shaping the experience of IPV at the sociocultural level.

Adaptation of the Social-Ecological Model to LMIC Women Once social-ecological thinking was applied to IPV, Bronfenbrenner's model influenced additional adaptations of Ecological Systems Theory (e.g. Cunningham et al., 1998; Levinson, 1989). These made slight variations Carlson's

model over the proceeding decade. Then, in 1998, Heise developed the Integrated, Ecological Framework for Violence Against Women- a parsimonious social-ecological model for the study

Figure 8: The Integrated, Ecological Framework (Krug, 2002; adapted from Heise, 1998)



of IPV globally (L. L. Heise, 1998; U. Kelly, Gonzalez-Guarda, & Taylor, 2010; Krug, 2002). In

response to the feminist and feminist intersectionality theories used in the late 20th century (and

discussed later), Heise posited a more holistic model that included feminist constructs of male dominance and a gender hierarchy as well as individual, dyadic, and community-level factors not addressed by these theories (L. L. Heise, 1998). Though Heise depicts her model as a more linear set of nested circles, it is nearly identical to Carlson's model in its conceptualization of the environment, with both models consisting of four nested levels (see Figure 3). The Integrated, Ecological Framework does reflect an updated notion of the correlates associated with each level. In Heise's work, the levels are dubbed ontogenic, microsystem, exosystem, and macrosystem and are renamed individual, relationship (or dyadic), community, and societal in later editions as used by the World Health Organization (Krug, 2002). These differentiate Heise's model from Carlson's and is the version that provides the framework for Chapter 2. As

with Carlson's model, the Integrated, Ecological Framework can conceptually contain correlates of both the experience and perpetration of IPV, depending on the perspective.

Applying this theory to male-female IPV in LMIC, the innermost layer deals specifically with the individual him/herself, and the personal history, personality traits, and socially-learned behaviors that shape interactions with intimate partners (U. Kelly et al., 2010). Poverty, for example, may generate frustrations in an a man's inability to provide for his family and live up to societally-expected gender roles, while it may render a woman more dependent on her male partner and reduce her ability to leave an abusive relationship (World Health Organization/ London School of Hygiene and Tropical Medicine, 2010). The relationship layer includes dyadic interactions with the intimate partner, but can also include those with other close contacts, such as family members and peers (L. L. Heise, 1998; U. Kelly et al., 2010). As reviewed in Chapter 1, relationship dynamics such as decision making autonomy are shown to be associated with IPV in male-female LMIC couples (Morrison et al., 2007; Stith et al., 2004; Tang & Lai, 2008), as are disparities in educational attainment (Ackerson et al., 2008; Chan, 2009) or age (World Health Organization/ London School of Hygiene and Tropical Medicine, 2010). The community level of Heise's model deals with neighborhood and community, while the fourth and final level- societal- is akin to Bronfenbrenner's macrosystem and Carlson's sociocultural level. The correlates pertaining to these last two levels are combined in Chapter 1 due to the relative lack of research on the more structural components of IPV, but there are some theoretical distinctions. While both levels look at correlates of IPV beyond the individuals involved in the violent acts themselves, community- level effects deal with the situational aspects of the settings in which violence takes place (U. Kelly et al., 2010), while societal-level correlates are those broadest of constructs that serve to create a climate in which IPV can exist (Jewkes, 2002; U. Kelly et al.,

2010). While the exact mechanisms remain empirically unclear, poverty, crime, and transience at the community level theoretically serve to destabilize communities, thereby increasing stress and conflict within relationships where it can be manifested as violence (L. L. Heise, 1998; U. Kelly et al., 2010). This differs from the societal level, which includes more macrosystemic forces such as hegemonic masculinity, gender inequality and the normalization of violence that form the overarching, societal “blueprints” for gender roles and expectations, as well as how conflict in relationships can and should be handled (U. Kelly et al., 2010).

Although developed using only the empirical data from North America available at the time, the World Health Organization adopted Heise’s model in 2002 and has since been used in several multi-country studies of IPV, providing mounting evidence for its use in LMIC (Ali & Naylor, 2013; Garcia-Moreno et al., 2005; Krug, 2002; World Health Organization, 2012; World Health Organization, 2016; World Health Organization/ London School of Hygiene and Tropical Medicine, 2010). Therefore, the current evidence base supports Heise’s social-ecological model as adapted by the World Health Organization as the most relevant and parsimonious approach to studying IPV in LMIC women. Based in social-ecological principles, its emphasis on how the interactions between correlates at various levels of the of the socio-ecological model interplay to manifest as IPV. The nested, overlapping circles seen in each iteration of the socio-ecological model define the interconnectedness and interrelationships of factors at each level and provide rationale for IPV interventions to be multilevel in nature (Ali & Naylor, 2013). Only by treating IPV as a complex, multilevel phenomenon can effective interventions be developed to mitigate and prevent its occurrence among LMIC women.

Limitations of the Social-Ecological Model

While the Integrated, Ecological Framework is employed widely in global IPV research, there are important critiques to its use. General critiques of social-ecological models maintain they diminish the role of individual agency over health behavior by placing so many of its factors outside of the individual's immediate control, potentially removing a measure of personal responsibility for healthcare decisions (J. F. Sallis, Owen, & Fisher, 2015). While it is important to recognize individual agency and the ability to transcend community norms (Herington & van de Fliert, 2017; Walker, Sterling, Hoke, & Dearden, 2007), placing too much emphasis on personal responsibility can be construed as 'blaming' the individual. This is particularly problematic in IPV research, where blame should never be placed on the victim of violence (National Institute of Justice, 2007; S. Stanley, 2012). A more holistic perspective is to view individual responsibility as couched in an *ecology* of forces that shape this decision. This removes an undue attribution of personal responsibility and demonstrates that the causes of a health behavior are widely distributed (J. F. Sallis et al., 2015)

Applications of the social-ecological model to IPV also tend to remove Bronfenbrenner's chronosystem as a dimension of the environment when changes over time may influence factors that are important in the study of IPV. Evolution in a society's normalization of violence over time, for example, may reduce the propensity for IPV to occur over the course of an intimate partnership. Ideas of gender roles and social scripts are also based on the structural environment in which these ideas were fomented (Brooks & Bolzendahl, 2004; Ciabattari, 2001). The lack of a chronosystem removes these birth cohort effects from social-ecological thinking and assumes that macrosocial forces are static within a given society. For this reason, a blended social-ecological model using elements of Heise's (1998) and Bronfenbrenner's (1979) approaches is used in study four and includes a level of the chronosystem (see Chapter 1, Figure 1).

Another limitation when applied to IPV is that the social-ecological model has been used expressly with violence against women perpetrated by male partners (R. Campbell et al., 2009; B. E. Carlson, 1984; L. L. Heise, 1998; U. Kelly et al., 2010; Krug, 2002). This makes it difficult to adapt the social-ecological model to the specific stressors facing those in same-sex relationships. While Chapter 1 showed that many of the individual, dyadic, community, and societal-level correlates of IPV remain the same for male-female and male-male couples, the concept of minority stress (Meyer, 1995; Meyer, 2003), is absent from Heise's model. While minority stress could feasibly be included as part of Heise's structural level, a growing body of literature suggests that minority stress is key to understanding IPV in male partnerships (Finneran & Stephenson, 2014a; Gamarel, Reisner, Laurenceau, Nemoto, & Operario, 2014a; Metheny & Stephenson, 2018b; Stephenson et al., 2011), and may be its driving macrosystemic construct. Therefore, a theoretical lens incorporating minority stress specifically should be used to examine IPV in male couples.

Studying IPV in Male Relationships: Minority Stress Theory

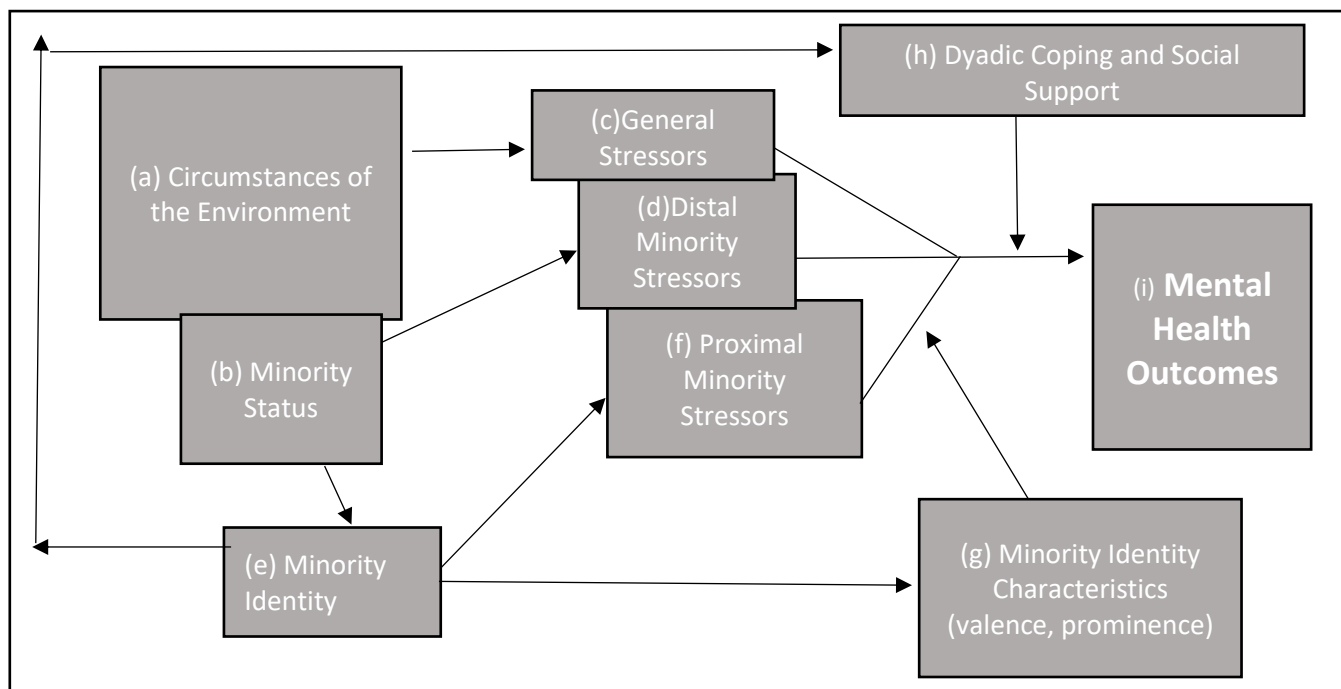
Defining Minority Stress

Conceptualized as an amalgamation of concepts from several sociological and social psychological theories, minority stress reflects the "excess stress to which individuals from stigmatized social categories are exposed as a result of their...position" (Meyer, 2003, p. 676). Minority stress is partly an extension of social stress theory that, like the social-ecological model, maintains conditions of the environment may lead to increased stress and negative health outcomes above and beyond individual factors (Aneshensel, 1992; Meyer, 1995; Meyer, 2003). This social stress stems from the conflict sexual minority individuals face when confronted with prejudice and denied full access to society's social processes, structures, and institutions (Meyer,

1995). Importantly, these social stressors are seen as compounding (Bowleg et al., 2003; Crenshaw, 1991). Minority stressors accumulate based on the degree to which they are felt by a specific individual and are multiplied by the existence of additional minority identities (i.e. racial, ethnic, religious) (Meyer, 2003). This underscores the importance of studying IPV in those experiencing multiple forms of marginalization, such as Indigenous MSM.

The notion that marginalized populations contend with social stressors that can negatively affect their health has been commonplace in the social sciences and humanities literature since the mid-20th century (see Allport, 1954; Durkheim, 1951). However, while social and minority stress concepts have been applied to minority groups based on race, ethnicity (Kessler & Neighbors, 1986; Kogan, Yu, Allen, & Brody, 2015; Negi, 2013; O'keefe, Wingate, Cole, Hollingsworth, & Tucker, 2015), and religion (Dion & Earn, 1975; Dion, Earn, & Yee, 1978; Every & Perry, 2014; Rippy & Newman, 2006), the inclusion of homosexuality as a mental disorder until 1973 precluded the inclusion of sexual minorities into the early minority stress framework (Meyer, 2003). Understanding that sexual minorities face similar social stressors due to discrimination,

Figure 9: Minority Stress Processes in Lesbian, Gay, and Bisexual Populations (Meyer, 2003)



stigma, and internalized homonegativity, a theory of minority stress was developed in the 1990s by Meyer at the University of California, Los Angeles (Meyer, 1995) (See Figure 9).

Since first being applied to the mental health of gay men in the United States, minority stress theory has since been applied to the study of negative mental health outcomes in other sexual minority populations, including lesbian women (Balsam & Szymanski, 2005; Bowleg et al., 2003; Lehavot & Simoni, 2011), bisexual persons (Kelleher, 2009; Meyer, 2003; Zamboni & Crawford, 2007), and transgender individuals (Gamarel, Reisner, Laurenceau, Nemoto, & Operario, 2014b; Kelleher, 2009; R. J. Testa et al., 2017).

Theoretical Underpinnings

Assumptions of minority stress theory as it applies to sexual minorities include 1) recognizing the confluence of individual and structural factors and 2) acknowledgment of the stress facing sexual minorities as similar to that faced by other minority groups (Institute of Medicine, 2011). The first assumption identifies minority stress theory, like social-ecological models, as a multilevel framework that takes into account the structural, interpersonal, and individual components of a person's environment. The second assumption places minority stress based on sexual orientation and/or gender identity on par with other sources of minority stress included in the early literature, such as race, ethnicity, or religion.

Another important underpinning in minority stress theory is the concept of proximal and distal stressors. Distal stressors are functions of social structures themselves, the effects of which do not depend on how they are manifested in the immediate environment of the person experiencing them (Lazarus & Folkman, 1984). They are therefore objective and independent of a person's identity as a sexual minority (Meyer, 2003). For instance, a man could be called an anti-gay slur by a passer-by simply based on his appearance, regardless of whether he is actually

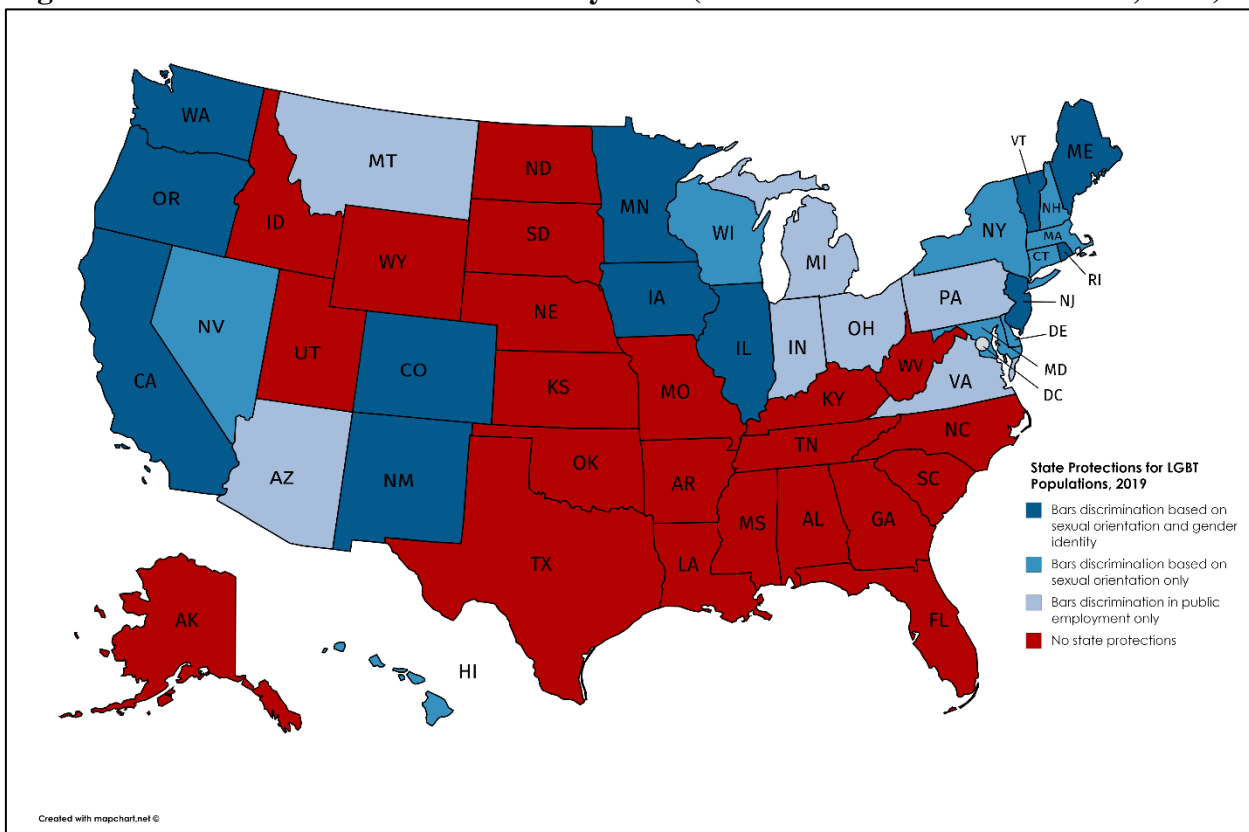
homosexual. The anti-gay slur is itself a function of societal homonegativity and need not be related to the sexuality of the person to whom it is directed. Conversely, proximal stressors are those which are subjective and depend on an individual's self-identity as a sexual minority. As an example, a teenager who has recently discovered his sexuality may be cognizant to 'hide' it from his peers by monitoring his interactions with others (i.e. "acting straight"). While both examples reflect the wider construct of homophobic discrimination in society, they differ on their connection to a person's identity as a sexual minority.

Social stressors exist on a continuum between distal and proximal. (Lazarus & Folkman, 1984; Meyer, 2003), and can vary greatly in the meaning attached to them by the person experiencing the stressor (Meyer, 2003). In his original model, Meyer offers three processes of minority stress along this continuum. From distal to proximal, they consist of (1) external, objectively stressful events; (2) anticipated stigma from others based on self-identification as a sexual minority; and (3) internalized homonegativity, or negative self-regard due to self-identity as a sexual minority (Meyer, 1995; Meyer, 2003). Meyer's original model maintains that minority status (i.e. as a gay man) leads to increased exposure to distal stressors, which are themselves antecedents of more proximal stressors (Meyer, 1995). This combination of distal and proximal stressors produce a chronically high allostatic load, which in turn contributes to poor health outcomes.

The most distal of Meyer's three processes, often called enacted stigma, includes experiences with prejudice, discrimination, and violence based on sexual orientation. Similar to Allport's (1954) continuum of prejudice, enacted stigma includes avoidance, discrimination, ostracizing, property damage, violence, and ultimately genocide (Herek, 2009). Gender and sexual minorities are often subject to enacted stigma based on their perceived non-conformity to

societal norms (Institute of Medicine, 2011). Due to its distal nature, enacted stigma is further removed from the personal identities of the people experiencing it. For instance, when David Mullins and Charlie Craig were famously refused a wedding cake from a Colorado confectioner in 2014 (Colorado Court of Appeals, 2015), the act of discrimination had little to do with David and Charlie themselves. Rather, it reflected the wider views of the bakery owners as well as structural issues such as homophobia and heteronormativity in the wedding cake industry. Weak legal protection for LGBT people against enacted discrimination in the United States also compound this issue. There is currently no national civil statute outlawing discrimination based on sexual orientation or gender identity, and 22 states have no statewide discrimination protections while 30 allow discrimination based on gender identity (American Civil Liberties Union, 2019) (see Figure 10).

Figure 10: Enacted Discrimination Laws by State (American Civil Liberties Union, 2019)



Anticipated stigma, also referred to as perceived stigma, is the extent to which a person believes it is likely they will be discriminated against based on certain characteristics or disease state (Earnshaw, Quinn, & Park, 2012; Quinn et al., 2014). Regarding sexual and gender minority persons, anticipated stigma may stem from previous acts of enacted stigma or witnessing enacted stigma against others with their same identity. This conditions an expectation of rejection and can lead to negative health effects (Earnshaw et al., 2012; Quinn et al., 2014). In one study of MSM in New York City, the expected social rejection due to HIV-related stigma was significantly associated with not disclosing an HIV-positive serostatus to sex partners and reduced propensity to test for HIV (Golub & Gamarel, 2013). Anticipated stigma can also lead to concealment of minority identity in an effort to reduce anticipated stigma, which only serves to increase the most proximal form of stigma and often leads to higher levels of stress (Golub & Gamarel, 2013; Quinn et al., 2014).

Internalized stigma, or internalized homonegativity, describes the direction of society's negative attitudes toward the self (Meyer, 1995). This often begins in early childhood, when heterosexuality is assumed and a sexual or gender minority status is by default deviant (Herek, Gillis, & Cogan, 2009; Meyer, 1995). Upon self-realization of a same-sex attraction, a cognitive dissonance between early socialized experiences under the "heterosexual assumption" (Herek et al., 2009, n.p.) and inherent thoughts and feelings emerges, causing increased stress. The self-stigma associated with this perceived deviant identity (internalized homonegativity) is often most acute during the coming-out process (Herrick et al., 2013; Meyer, 1995; White & Stephenson, 2014). However, the strength of early heteronormative socialization experiences and continual exposure to stigmatizing attitudes in society renders internalized homonegativity an important part of the psychology of sexual minority people throughout their lives. The psychological harm

associated with internalized stigma is shown to lead to a variety of negative mental health outcomes, including depression and anxiety (Herrick et al., 2013; Igartua, Gill, & Montoro, 2009; Newcomb & Mustanski, 2010), eating disorders (Wiseman & Moradi, 2010), sexual risk behaviors (Hatzenbuehler et al., 2008; Meyer, Dean, & Herek, 1998; Preston, D'Augelli, Kassab, & Starks, 2007) and substance use (Amadio & Chung, 2004; Amadio, 2006; Hatzenbuehler et al., 2008). Evidence also supports the classification of internalized stigma as a health problem in its own right, negatively affecting the self-worth and mental wellbeing of sexual minority persons (Herrick et al., 2013).

Beginning at the left of Meyer's model (see again Figure 4), there are direct, unidirectional relationships between a person's minority status (which is couched in the multilevel circumstances of the environment) and negative mental health outcomes, with the three previously-mentioned minority stress processes acting as mediators. However, two indirect pathways depicted in the model can also influence people's responses to minority stress processes, and therefore their mental health outcomes: characteristics of minority identity (box g) and coping and social support (box h). Three characteristics of minority identity are highlighted in box (g) of Meyer's model. Prominence refers to the degree to which the individual identifies with the minority identity in relation to other identities (Meyer, 2003). For example, a high prominence of sexual minority identity in relation to racial or religious identity may exacerbate the emotional impact of minority stress processes related to sexual identity and mute those related to racial or religious identities (Eliason, 1996; Meyer, 2003). Valence is concerned with the self-validation that comes with identity acceptance and one's self-validation regarding the minority identity (Meyer, 2003). Often cited as having an inverse relationship with negative mental health outcomes, increasing a sexual minority person's identity valence is key to self-

acceptance and reduction of internalized homonegativity (Meyer, 2003). Integration is seen as the final step in identity formation wherein the minority identity is fully synthesized into the person's other majority and minority identities, with increased integration leading to self-acceptance (Eliason, 1996). Box (h) refers to the decreased stress provided by adaptive coping and social support when the minority identity is associated with opportunities to engage and affiliate with others who ascribe to the same identity (Lyons, Hosking, & Rozbroj, 2015; Meyer, 2003; Pflum, Testa, Balsam, Goldblum, & Bongar, 2015; C. F. Wong, Schrage, Holloway, Meyer, & Kipke, 2014). While there is evidence for affiliation with the LGBT community as an important component of social support (Frost, Meyer, & Schwartz, 2016; Goldbach & Gibbs, 2015; Lyons et al., 2015), this support need not come from others with the same minority identity and may be derived from family members, peers, and community relationships (Bouris, 2014). Importantly for the study of the role of minority stress in IPV, dyadic social support is also shown to be associated with minority stress and its mental health outcomes. Same-sex couples are thought to create social support within the relationship as a way to buttress both more distal (i.e. legal discrimination, lack of familial support) and proximal (i.e. concealment of the relationship and/or their own identity) minority stressors (Darbes & Lewis, 2005; Darbes, Chakravarty, Beougher, Neilands, & Hoff, 2012; Darbes, Chakravarty, Neilands, Beougher, & Hoff, 2014; J. M. Graham & Barnow, 2013; Rostosky, Riggle, Gray, & Hatton, 2007).

Minority Stress applied to IPV in MSM

Most studies using minority stress theory have focused on mental health outcomes, leaving other negative effects of minority stress comparatively under-researched (Finneran & Stephenson, 2014b). However, there is growing empirical evidence that elements of minority stress are important to understanding IPV in same-sex relationships (Edwards & Sylaska, 2013;

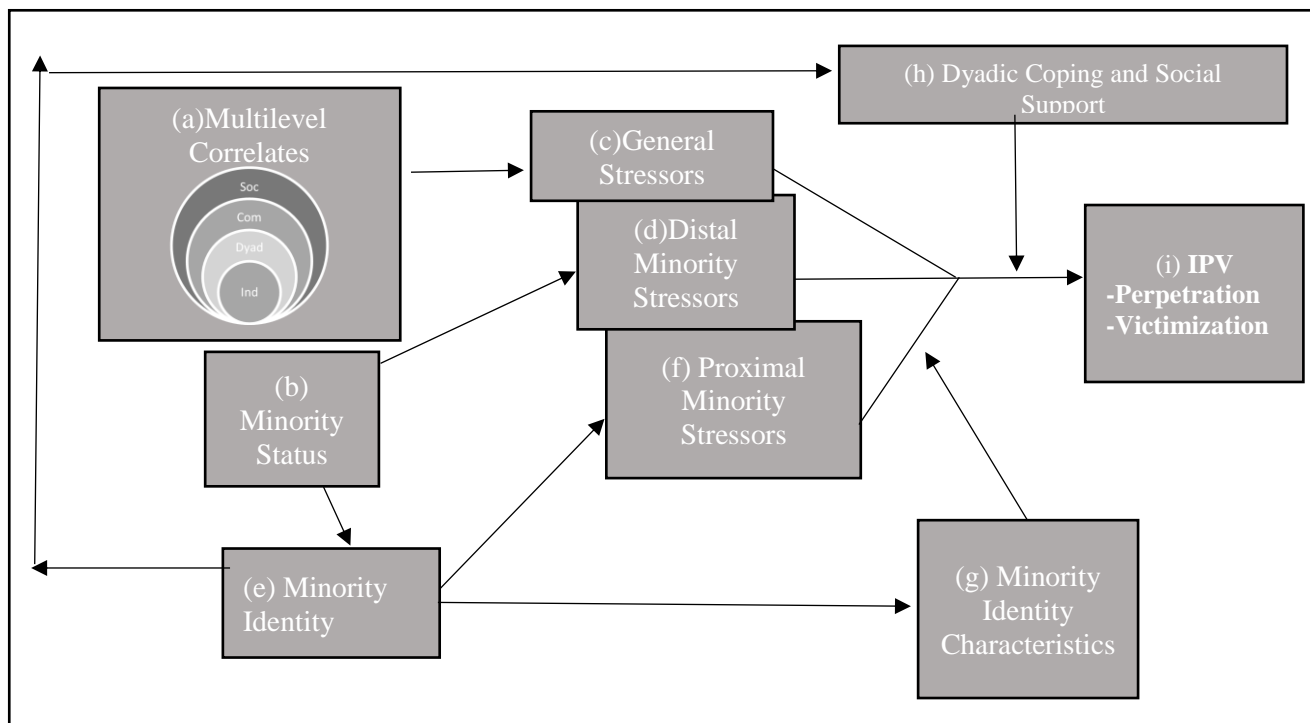
Finneran & Stephenson, 2014a; Finneran & Stephenson, 2014b; Freeland, Goldenberg, & Stephenson, 2018; Freeland et al., 2016; Stephenson et al., 2013; Stephenson & Finneran, 2017a; Stephenson et al., 2011). In a mixed sample of 581 gay men and lesbian women in the United States, Carvalho et al. (2011) found a significant association between anticipated stigma and both perpetration and victimization of IPV. However, major limitations of this study include its assessment of lifetime experiences of violence and its assessment of IPV, asking only if the respondent has “ever been a victim of domestic violence” or “ever been a perpetrator of domestic violence” (Carvalho et al., 2011, p.504). A more robust study found a significant relationship between internalized homonegativity and physical IPV perpetration in a sample of 107 MSM assessed for past-year IPV via the CTS2 (Kelley et al., 2014). However, the study sample was fairly small and included predominantly white college-aged students, limiting its generalizability. A larger study by Stephenson and Finneran surveyed more than 1000 MSM in Atlanta, finding significant associations between internalized homonegativity and receipt of IPV (Stephenson & Finneran, 2017a).

Regarding distal minority stressors, quantitative studies by Stephenson and colleagues have found significant relationships between experiences of homophobic discrimination and an increased odds of reporting IPV among an online sample of 2,368 self-identified gay men in six countries (Finneran et al., 2012), 1,075 men in Atlanta (Stephenson & Finneran, 2017a), and a nationwide sample of 498 partnered MSM in the United States (Metheny & Stephenson, 2018b). As discussed in Chapter 2, however, the lack of a sampling frame relegates these studies to recruitment of self-identified gay men. This may bias these samples towards those who are more comfortable and open with their sexuality, and thus may be more likely to be victims of enacted discrimination. Qualitative work in the United States also supports the notion of a relationship

between enacted stigma and IPV, but the inability to discuss actual instances of violence in a focus group setting and the inherent limitations in the generalizability of qualitative research limit the scope of these findings (Goldenberg et al., 2016). This study and others (see Edwards et al., 2015) also posit a relationship between experiences of minority stressors in one member of a dyad and experiences of violence (both perpetration and victimization) in his male partner.

While the exact mechanisms for how minority stressors contribute to IPV in male couples are not well understood, men who feel high levels of inadequacy, internalized homonegativity (i.e. proximal stressors), and homophobic discrimination (i.e. distal stressors) may be more likely to use non-traditional means of power assertion in their intimate relationships, resulting in IPV (Edwards & Sylaska, 2013; Finneran & Stephenson, 2014b; McKenry, Serovich, Mason, & Mosack, 2006). Further, the degree to which a person's identity as a sexual minority is at odds with their own norms and expectations and those of their environment may be an indicator of

Figure 11: Minority stress theory as adapted for IPV in male couples (adapted from Meyer, 2003)



their level of minority stress (Metheny & Stephenson, 2018b). A conceptual model of the adaptation of Meyer's (2003) minority stress model to IPV is presented in Figure 11.

While the model remains identical in its proposed directionality and relationships, several of the constructs are adapted to clarify and better reflect the empirical evidence base regarding IPV in male couples. Box (a) more clearly includes the multilevel correlates of IPV in male relationships discussed in Chapter 2. These include individual, dyadic, community, and societal-level factors that may not be specific to MSM's sexual minority status, and are especially important to consider when considering Indigenous MSM. Examples of these correlates include the intergenerational transfer of violence (Franklin & Kercher, 2012) at the individual level, relationship dynamics at the dyadic level (Suarez et al., 2018), community economic status (West, 2012) at the community level, and anti-Indigenous racism/historical trauma at the structural level (Gone, 2013). Box (b) relates the sexual minority status of the individual, which has specific implications for IPV. This, as in Meyer's model, leads to the experience of distal and proximal minority stressors, which are associated with both the perpetration and victimization of IPV in male partnerships. Reflecting the notion that IPV occurs within partnerships, box (h) is altered slightly in this adaptation to focus on the dyadic social support and coping within the partnership, a lack of which is shown to be associated with IPV (Edwards et al., 2015; Stephenson et al., 2013; Stephenson et al., 2011). This adaptation of Meyer's minority stress model takes into account not only the multilevel social-ecological correlates of IPV, but also the unique stressors facing men in male partnerships as a result of their sexual minority status. Like social-ecological models of IPV, it is able to simultaneously contain factors related to perpetration and victimization, thus providing a parsimonious model on which to base inquiry into this complex phenomenon.

Both theories used in this dissertation are approached from a fundamental cause perspective. Formalized by Link and Phelan and built on the work of social medicine philosophers and economists of the 19th century (e.g. Virchow, 1862), fundamental cause theory points to the primacy of social conditions in the study of health outcomes. Link and Phelan posit that social conditions (i.e. macrosocial forces) such as socioeconomic status, racism, and stigma create the environment in which community, dyadic, and individual factors exist (Hatzenbuehler et al., 2013; Link & Phelan, 1995; Phelan, Link, & Tehranifar, 2010). They make the argument that interventions to improve health should be focused on altering social norms- that acting on the fundamental causes themselves is the most efficient way to affect change. Building off this approach, these theories should not be viewed as mutually exclusive when studying IPV in LMIC women and Indigenous MSM. The reality of intersectional identities (Bowleg et al., 2003; Bowleg, 2008) means that women residing in LMIC may also be minorities (i.e. ethnic, religious, cultural, sexual, gender) in their communities and therefore subject to minority stress. Likewise, Indigenous MSM are subject to stressors at multiple levels of the environment, as shown in Figure 6. Two theories are used in this dissertation because social-ecological theory most parsimoniously explains IPV in LMIC women, while Minority Stress theory considers the additional sexuality-based stressors inherent to IPV in Indigenous MSM. However, by taking a fundamental cause approach to both social-ecological and minority stress theory, the studies contained within this dissertation focus on how the macrosocial forces facing both populations alter the risk for experiencing IPV. This unifying concept highlights structural points of intervention for the mitigation and prevention of IPV through changing social norms.

Competing Theories in IPV Research

Several theories of IPV perpetration and victimization are used throughout the social sciences, biological sciences, and criminology. However, these were not chosen to ground the dissertation work because they do not fully recognize the multilevel nature of IPV and/or they do not recognize the unique circumstances of IPV in same-sex partnerships. They are therefore not the best choices for use in this dissertation (see Table 3). These theories and their limitations are briefly reviewed below.

Table 3: Competing Theories of Intimate Partner Violence

Theory	Major concepts in IPV	Multilevel Theory	Applied to Male Couples	Major limitations
Biological and Psychopathological Theories	Violence perpetration is a result of mental instability and/or a biological need to retain a mate	No	No	<ul style="list-style-type: none"> - Limited generalizability - Little empirical evidence
Social Learning Theory	Violence as a way to mediate conflict is a learned behavior	No	No	<ul style="list-style-type: none"> - Overly simplified model of violence - Limited impact on IPV prevention
Social Disorganization Theory	Violence is caused by low economic status, ethnic heterogeneity, family disruption, and residential mobility	No	No	<ul style="list-style-type: none"> - Little empirical evidence - Focuses only on community-level correlates
The Duluth Model	Structural factors drive a male need for power and control over female partners	Yes	No	<ul style="list-style-type: none"> - Focused on perpetrator - Not applicable to male couples

				- Little empirical evidence
Syndemic Theory	Violence is the result of a constellation of mutually-reinforcing correlates from all levels of the environment	Yes	Yes	- Lack of directionality - Major tenets addressed by minority stress theory
Feminist Intersectionality Theories	Violence results from power imbalances between men and women and an engrained patriarchy	Yes	No	- Little work expanding to male couples - No room for individual correlates of IPV
Power Theory	Violence stems from structural, dyadic, and personal factors	Yes	No	- Deals largely with physical violence - Ignores community-level correlates

Biological and Psychopathological Theories

Early theories of focused on how IPV likely stemmed from the psychopathology of both perpetrators and victims. Theories of female masochism were used early in IPV scholarship, theorizing violence was brought upon victims through provocation of the perpetrator due to a psychological need for suffering (U. Kelly et al., 2010). These were dismissed as victim-blaming and unhelpful to the development of large-scale interventions to combat IPV prevalence (R. E. Dobash & Dobash, 1979). There are also logical and empirical flaws in these theories, as many people who experience IPV have no mental health disorders prior to the abuse, and research with women in male-female partnerships did not support these theories (U. Kelly et al., 2010).

Theories of perpetrator psychopathology and biology have garnered significantly more empirical evidence and attention. IPV is sometimes attributed in part to mood or personality

disorders (Cunningham et al., 1998; U. Kelly et al., 2010; World Health Organization & London School of Hygiene and Tropical Medicine, 2010), as well as to gene-based evolutionary theories (Cunningham et al., 1998). Regarding psychopathology, several reviews of the literature have shown associations between antisocial personality disorder symptoms (i.e. lack of empathy or impulsivity) and perpetration of IPV (Abbey, Zawacki, Buck, Clinton, & McAuslan, 2004; Chan, 2009; Cunningham et al., 1998). Studies in the 1990s also showed an overrepresentation of borderline personality disorder among perpetrators of IPV, with 79% of men in one study having clinically significant findings for borderline personality disorder, compared to a national male prevalence of approximately 15% (Cunningham et al., 1998). While there is room for this association in the broader correlates of IPV, psychopathology as a driving theory of IPV causation is problematic. Firstly, it narrows perpetration of IPV to a small number of men who suffer from mental illness, something that is untrue for a majority of perpetrators (U. Kelly et al., 2010). Secondly, it removes much of the blame for aggression towards intimate partners from the perpetrator, reframing it as a byproduct of a disease and ignoring factors at levels other than the individual (Cunningham et al., 1998; U. Kelly et al., 2010). This has important implications for research, prevention, and clinical practice by, in effect, requiring a pivot in research and screening for IPV from victims to potential perpetrators- erasing decades of work by feminist scholars and activists to frame the study of IPV around victims.

Genetic, neo-Darwinian theories of IPV have surfaced as a way to combine the genetic influences on behavior with the societal factors that affect them. The fact that IPV exists at all means there is an evolutionary purpose for it that aids in a species' biological fitness (U. Kelly et al., 2010). Male aggression towards female intimate partners may have developed due to an evolutionary desire to maintain the sexual fidelity of an offspring-bearing mate, as it is

biologically inefficient to expend energy rearing offspring that do not carry the parent's genetic material (Cunningham et al., 1998; Wilson & Daly, 1996). Conversely, females will be inclined towards male partners who can provide shelter, food, and social status. When any of these are threatened, males may perceive their female partners of being more likely to leave the relationship, and genetic mechanisms such as jealousy can trigger aggression, violence, and even homicide as a "mate-retention tactic" (Cunningham et al., 1998, p. 5) to ensure they do not leave and potentially bear another man's offspring. Empirical evidence for this theory comes mainly from animal models, though two studies of human dyads found married male-female couples did exhibit evolutionary mate-retention tactics (Buss & Shackelford, 1997; Wilson & Daly, 1996). This deterministic approach to IPV ignores several important aspects of the phenomenon. Firstly, IPV is not common enough to be seen as genetically necessary for male fitness. Secondly, these theories are based exclusively on biological fitness, which requires a male perpetrator and female victim. This discounts any notion of female-instigated violence or violence in same-sex partnerships. Thirdly, the male predisposition to violence is said to be triggered by either the presence or *perception* of a threat to sexual exclusivity. Considering that perceptions are personally derived and vary by individual, it is difficult to conceive of potential interventions for IPV prevention and mitigation using this theory (Cunningham et al., 1998).

Social Learning Theory

Social learning theory hypothesizes that adult aggression and violent behavior are products of experienced or observed behaviors in childhood (Bandura & Walters, 1977; K. M. Bell & Naugle, 2008). Initially proposed by psychologist Albert Bandura, Social Learning Theory posits that the methods for settling family conflicts are observed by children and repeated in their own family units decades later. When applied to intimate partner violence, both victims

and perpetrators of IPV are thought to have witnessed or directly experienced abuse as children, leading to a tolerance for violence and an acceptability for IPV as a way to resolve conflict (Bandura & Walters, 1977; K. M. Bell & Naugle, 2008; U. Kelly et al., 2010). This theory therefore provides the underpinnings for the intergenerational transfer of violence, discussed in Chapter 2.

Bandura's original theory outlines three psychological processes by which this social learning takes place. The first involves *attentional processes*, in which Bandura differentiates between merely exposing a child to an event and paying specific attention to the action. Those to whom the observer shares a more emotional bond are more likely to be emulated (Bandura & Walters, 1977), making family members, rather than peers or community members, the central figures in social learning theory. People are also more likely to internalize events that happen to them directly versus those that are observed, potentially pointing to the differential effects of witnessing and experiencing violence seen in the empirical literature (E. K. Martin et al., 2007; Söchting et al., 2004; Vung & Krantz, 2009). Bandura's second process, *retention*, involves the long-term internalization of observed behavior. The coding of observations into words, labels, and/or vivid imagery allows specific instances to be recalled and imitated long after the initial stimulus (i.e. witnessing or experiencing violence) is finished (Bandura & Walters, 1977). Thirdly, Bandura points to *reinforcement and motivation* as the linchpin to activating learned behavior later in life. Providing positive incentives for a previously latent socially learned behavior almost immediately translate it into action (Bandura & Walters, 1977). The socialization of masculinity reinforces boys to be more aggressive and dominant, while girls in many societies are socialized to be demure, nurturing, and subservient, reinforcing social learning theory at the societal level (U. Kelly et al., 2010). This expectation of gendered roles

and scripts has implications for IPV in male relationships as well, as previously discussed (see Craft & Serovich, 2005; Goldenberg et al., 2016).

In the context of IPV, reinforcement is likely bidirectional, both encouraging and discouraging IPV. While the restoration of imbalanced power dynamics in a relationship after witnessing or perpetrating IPV may positively reinforce it as a way to resolve conflict, negative reinforcement of IPV in many communities likely hampers socially learned IPV attitudes and behaviors (U. Kelly et al., 2010). This refers to the importance of Jewkes' (2002) assertion that the normalization of violence in a society is critical to the existence of IPV.

While social learning theory involves societal level constructs, it is defined as a non-multilevel theory here due to its concentration on the individual's experiences as the main reason for experiencing or perpetrating IPV. This approach renders social learning theory inappropriate for use as the main theoretical approach in this dissertation. Similarly, while there is ample evidence for the intergenerational transfer of violence, the methodological issues with these studies and contrary evidence suggest this explanation is overly simplistic (K. M. Bell & Naugle, 2008). For instance, only a minority of those who witness or experience violence as children grow up to perpetrate or experience IPV as adults. While societal differences in gender role socialization and reinforcement of violent behavior are mentioned, there are almost certainly additional structural factors at play that remain unaccounted for in this model (K. M. Bell & Naugle, 2008; U. Kelly et al., 2010) Bell & Naugle, 2008; Kelly et al., 2010).

Social Disorganization Theory

Borne of the Chicago-school of sociological thinkers in the first third of the 20th century, social disorganization theory has been widely applied in the field of criminology to examine neighborhood and community-level correlates of crime and violence (Browning, 2002; Shaw &

McKay, 1942). Its underlying hypothesis states that confluence of low economic status, ethnic heterogeneity, family disruption, and residential mobility (transience) lead to a community's social disorganization and therefore to increased crime, violence, and delinquency (Sampson & Groves, 1989; Shaw & McKay, 1942). These forces are said to be buttressed by the collective efficacy of a community- the degree to which cohesion among the members of a community allows for the informal social control of criminal or violent activity (Sampson & Groves, 1989).

While commonly applied to community-based violence (e.g. assault, homicide), its application to IPV is more tenuous. One study of 633 young adults in Chicago showed that increased collective efficacy predicted a decrease in dating violence victimization, but not perpetration (Jain, Buka, Subramanian, & Molnar, 2010). Similarly, a study of 1,392 American heterosexual couples showed through path analysis that perceived social cohesion and perceived social control of violence did not mediate the effect of neighborhood-level poverty on IPV perpetration (Caetano et al., 2010). This led the authors to conclude that IPV may not follow patterns of other violent behaviors, which tend to be concentrated in high-poverty neighborhoods with low social cohesion, and instead may be more determined by personal, dyadic, and structural characteristics (Caetano et al., 2010).

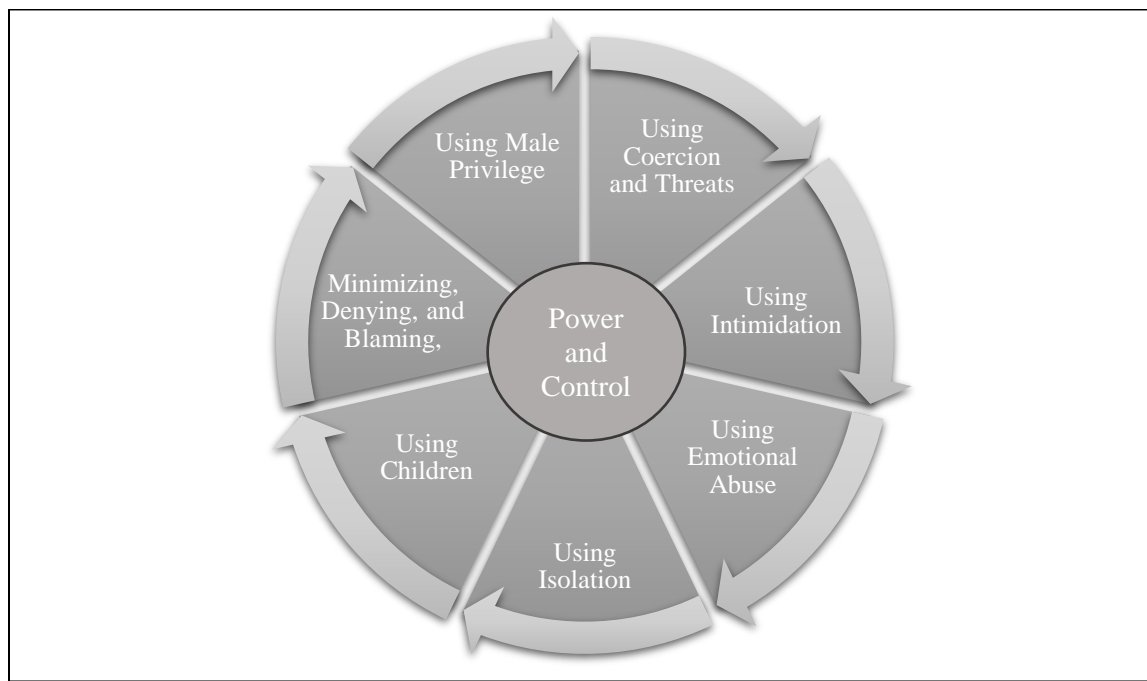
Social disorganization theory is useful because it calls attention to the need to include factors beyond the individual in the study of IPV. Therefore, the mixed results of this theory as applied to IPV should not be taken as evidence that community-level factors are not crucial to understanding how and why IPV takes place. However, both theoretical and methodological limitations of social disorganization theory render it insufficient for this dissertation work. By including only four community-level effects and none at other levels of the environment, this theory excludes important correlates of IPV. Secondly, its broad constructs and need for

community-level data make empirical evidence difficult to accumulate. Thirdly, it does not take into account how community-level attitudes regarding same-sex couples may affect social cohesion and therefore IPV. Social-ecological theory includes the important constructs found in social disorganization theory (i.e. community-level poverty and crime) while minority stress theory specifically calls attention to how stigma and discrimination in a community may lead to IPV among same-sex couples.

The Duluth Model of Power and Control

Developed in the mid-1980s for a court-mandated intervention with male perpetrators of violence in Duluth, Minnesota, the tenets of power and control at the core of the Duluth Model have shaped perpetrator intervention programs for more than 30 years (U. Kelly et al., 2010; Pence & Paymar, 1993) (see Figure 12). Used originally to study sexual and physical IPV perpetration in male-female couples, the Duluth Model maintains that IPV stems from a lack of power and control on the part of the perpetrator, and that IPV is an attempt to regain societally reinforced power dynamics (U. Kelly et al., 2010). Using the Power and Control Wheel (Figure 7), the Duluth Model maintains perpetrators use eight tactics to reinforce or regain power and control: intimidation, emotional abuse, or isolation, acts of minimizing/blaming, and children, economic abuse, coercion/threats, and privilege (Pence & Paymar, 1993). The eight tactics are immersed in a culture supportive of male dominance, patriarchy and societal-level gender role socialization (Pence & Paymar, 1993). The Duluth Model therefore constructs a gender-paradigm that places IPV in a context of male-initiated violence perpetrated against females due to the gendered expectations and social pressures placed upon men (Babcock, Green, & Robie, 2004; U. Kelly et al., 2010; Pence & Paymar, 1993).

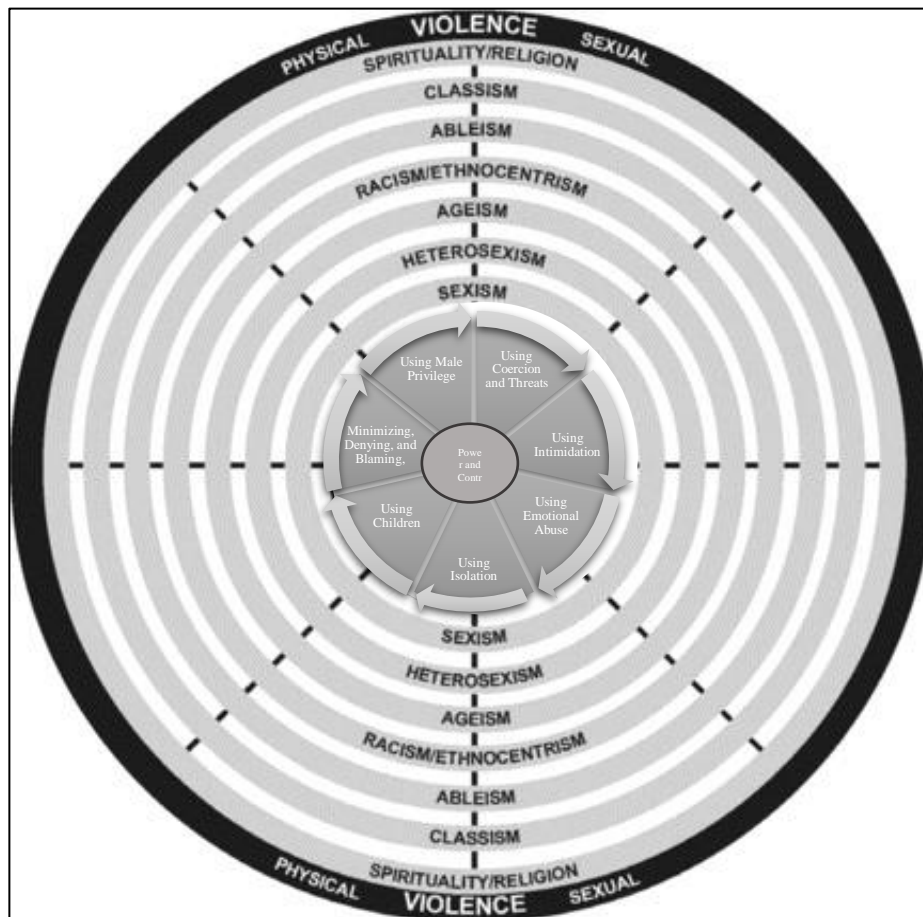
Figure 12: The Power and Control Wheel (Pence & Paymar, 1993)



A recent expansion of the Duluth Model names specific structural factors implicit in IPV, expanding on the original approach (Chavis & Hill, 2008). Drawing from intersectional theories (Crenshaw, 1991), the Multicultural Power and Control Wheel identifies (in random order) sexism, classism, ableism, racism/ethnocentrism, ageism, and heterosexism as key constructs impacting power and control in male-female and same-sex dyads (Chavis & Hill, 2008; U. Kelly et al., 2010). It consists of the same eight tactics employed in the original model, adapting some

words such as ‘male privilege’ to simply ‘privilege’ to encompass wide oppression of the ‘other’ (see Figure 13).

Figure 13: The Multicultural Power and Control Wheel (Chavis & Hill, 2008)



In their expansion of the Duluth Model, Chavis and Hill highlight that these structural forces are not only intersectional, but compounding, and sometimes protective. To highlight this last point, spirituality and religion (for example) may reinforce the gendered norms of marriage, reinforcing a victim’s reticence to leave an abusive partner. It can also be a welcoming community and a source of social support and resilience to someone experiencing IPV (Hamby, 2014; Potter, 2007). A focus on the duality of structural effects therefore attempts to transform Pence and Paymar’s model into one focused on both the perpetration and experience of IPV.

Despite its multilevel nature, the limitations of the Duluth Model outweigh its usefulness as a theoretical approach to IPV in marginalized populations. Empirical evidence using the original Power and Control Wheel is thin, with one study calling it a “data-impervious paradigm” (Dutton & Corvo, 2007, p.658). Designed for work with perpetrators of IPV, the Duluth Model as a program has shown little success in combatting recidivism among men who perpetrate IPV against their female partners. Studies have found no measurable effect of the Duluth Model on changing the behavior of American male perpetrators (Babcock et al., 2004; Dutton & Corvo, 2007), and have pointed to the inability of a model designed for a small Minnesota town to have applicability as a broad theoretical approach to IPV (Dutton & Corvo, 2006).

The Multicultural Power and Control Wheel also has several shortcomings as a theoretical approach to studying IPV in marginalized populations. Like the original, it simplifies IPV to phenomenon based solely on the desire for male power and control over women influenced by structural forces. This creates a gender paradigm in which men desire dominion over their female partners. This makes it difficult to expand the model to male-male couples (Detschelt, 2002; Dutton & Corvo, 2007), though applications to female-female couples have been theoretically postulated (Chavis & Hill, 2008). This approach also suffers from a singular focus on the structural issues that comprise IPV. While a welcome change from the individualistic theories previously discussed, the Duluth Model largely ignores factors at the individual, dyadic, and community levels that contribute to IPV. For example, a core tenet of the model is that a perpetrator’s anger and aggression do not themselves lead to violence. Rather, it is the desire for power and control that translates anger into violence (Pence & Paymar, 1993). This excludes, among other things, tenets of social-learning theory that purport IPV to be a

socially learned and accepted response to anger. Similarly, the Duluth Model ignores factors related to the person experiencing IPV that may contribute to enduring a violent relationship (i.e. financial dependency). This is an attempt to avoid victim blaming, but doing so ignores the victim and the complex dyadic interactions through which IPV is manifested (Dutton & Corvo, 2007).

Syndemic Theory

“Syndemic”, a term first coined in the 1990s by Dr. Merrill Singer, refers to the interrelated, mutually augmenting complex of health problems and structural vulnerabilities facing a marginalized population (Singer, Gonzalez, Vega, Centeno, & Davison, 1994; Singer, 2000). Designed to be viewed holistically, syndemic theory asserts that the combination of personal and structural issues are worse for health outcomes than any one issue alone (Herrick et al., 2011). Syndemic theory has been applied to MSM in the United States to understand how health behaviors are intertwined with societal constructs such as homophobia to lead to poor mental and sexual health outcomes (Herrick et al., 2011). For example, Stall et al. (2003) conducted a large, multisite study guided by syndemic theory to examine the positive associations between IPV, substance abuse, childhood sexual abuse, and depression and their collective association with risky sexual behavior in a sample of self-identified gay men across the USA. Syndemic theory has also been tested internationally, with one study showing that increasing numbers of psychosocial issues were significantly associated with a dose-response in the rate of unprotected anal intercourse and seroconversion among MSM in Thailand (McCarthy et al., 2010). Increasing numbers of syndemic conditions (i.e. substance use, unstable housing, homophobic violence, and depressive symptoms) were found to have a significant, positive,

dose-response association with instances of condomless anal intercourse among a sample of 3,934 MSM across 151 countries (Santos et al., 2014).

The few studies that have used syndemic theory to examine IPV in male couples find that experiencing more syndemic conditions is associated with significantly greater odds of IPV victimization (Dyer et al., 2012; Pimentel, Cheng, & Kelly, 2015). However, one limitation of using this theory is its uniform conceptualization of sexual identity and lack of directionality. While there are many similarities between minority stress theory and syndemic theory, syndemic theory fails to take into account important aspects of minority identity (i.e. prominence, valence, and integration) and resilience (i.e. coping and social support) that are shown to make a difference when applied to the study of IPV (Finneran & Stephenson, 2014a; Walters & Simoni, 2002). Further, minority stress theory already couches minority identity in the social-ecological conceptualization of the environment and states that the stressors facing sexual minorities because of this environment are compounding (Meyer, 1995; Meyer, 2016), thereby including the central tenet of syndemic theory within a more precise conceptualization of sexual identity's impact on negative health outcomes. Therefore, while syndemic theory is a useful lens through which to view complex, multilevel phenomena such as IPV, it is insufficient as a theoretical framework for this dissertation work.

Feminist and Feminist Intersectionality Theories

Feminist theories emphasize the patriarchal nature of society and the socialized need for power and control by men as the driving forces behind IPV (R. E. Dobash & Dobash, 1979; U. Kelly et al., 2010; Pence & Paymar, 1993). They maintain that the cultural norms of male dominance and female subordination are so engrained in nearly every society that IPV perpetration is a function of socially learned and deep-seated beliefs and behaviors. International

studies of the justification of wife beating (among men and women) highlight how these attitudes are often operationalized into behaviors (Abrahams et al., 2004; Jewkes et al., 2006a; Uthman et al., 2009). Similarly, studies showing higher rates of violence in communities where women challenge traditional gender norms (World Health Organization, 2013; World Health Organization/ London School of Hygiene and Tropical Medicine, 2010) provide evidence for feminist theory.

Feminist intersectionality theory as applied to IPV moves beyond patriarchal concepts of gender in power dynamics to include the multiplicative effects of gender, race, ethnicity, class, age, orientation, disability status, and religion on IPV. Each marginalized group may create a specific theory based on its unique qualities and positions within social structures. This resulted in the advent of intersectional approaches based on varying aspects of gender, race, class, and health status (Schulz & Mullings, 2006). Feminist intersectionality as a whole is therefore more a body of knowledge that seeks to explain how various identities, their social positions, and their relationship to power and decision making shape health than a specific theory. Feminist intersectionality in its original form is predicated on a male perpetrator and a female victim, which precludes its application to same-sex couples, and little work has been done on IPV in same-sex couples using this approach. While the structural elements of gender inequality, hegemonic masculinity, and patriarchy are important in the study of IPV in male couples, it was not designed for use with this population. Further, while feminist intersectionality theories are multilevel, they are most concerned with power relations- meaning at least two people must be involved (Schulz & Mullings, 2006). This leaves no room for the individual correlates of IPV to be included, which are important for studying IPV in historically marginalized populations such as Indigenous MSM. Therefore, while constructs of feminist intersectionality theories should be

included in the study of IPV in marginalized populations; social-ecological theory is able to contain the important constructs present in these theories while more holistically addressing correlates at all levels.

Power Theory

First proposed by social psychologist Murray Straus (1976), power theory argues that violence is present at the dyadic and societal levels and these compound each other, leading to IPV. In many ways an extension of Straus' previous work in family systems, power theory purports systemic influencers at the individual and societal levels disrupt the evolutionarily advantageous status quo of non-violence within a social group (Straus, 1973). Therefore, the social acceptance of violence, gender inequality, and ideas of traditional gender roles place downward pressure on the family unit, while socially learned behaviors regarding violence place upward pressure on the family unit, allowing tension and conflict to erupt in violence (K. M. Bell & Naugle, 2008). Power imbalances between partners increase the probability of violence in light of structural forces (M. A. Straus, 1976). Moderating factors, especially financial stress, are said to compound power differentials within families, placing them at a higher risk for violence. Empirical support for power theory finds a positive association between rates of IPV and familial conflict, levels of financial stress, and among families in lower socioeconomic strata (K. M. Bell & Naugle, 2008). The concept of power imbalances increasing risk of IPV in a relationship is also well-founded in both male-female (Dunkle et al., 2004; Jewkes et al., 2010b; Tang & Lai, 2008; World Health Organization/ London School of Hygiene and Tropical Medicine, 2010) and male-male (Finneran & Stephenson, 2014a; Goldenberg et al., 2016) relationships. This early multilevel theory includes constructs at the individual, family, and societal levels, but fails to account for the community-level factors influencing IPV. It also deals largely with physical IPV,

and little work has been done to extend power theory to other types of IPV or to male couples, making it unsuitable for a truly multilevel approach to all four types of intimate partner violence.

Conclusion

The complex nature of IPV and the unique factors facing LMIC women and male couples require two theoretical perspectives for this dissertation, unified by an understanding of the fundamental causes of violence. Social ecological theory has been recognized as the most comprehensive framework for studying IPV in male-female couples and has a large empirical evidence base (reviewed in Chapter 2) for its application across low- and middle-income countries. Minority stress theory as adapted in Figure 6 is well suited for the study of IPV in male couples and includes the unique stressors facing male couples as central concepts. In contrast to the competing theories summarized in Table 1 these two theoretical approaches parsimoniously combine the multilevel nature of the environment and important constructs from other major theories shown to be associated with IPV. These include the structural components of feminist intersectionality theory, the compounding effects of minority stress in syndemic theory, the community-level correlates of social disorganization theory, dyadic-level factors in power theory, and the biologic and genetic factors that are present in individual theories. This results in a more comprehensive picture of IPV in both populations, allowing for a truly multilevel approach. This dissertation will ground the proposed studies in a fundamental cause approach to one of these two theories providing a firm foundation for methodologically- and theoretically-sound research.

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Chapter 4: Interviewer Effects on the Reporting of Intimate Partner Violence in the 2015 Zimbabwe Demographic and Health Survey

Abstract: Background: Intimate partner violence (IPV) is a global public health concern that is widely underreported. Socio-demographic factors of the interviewer may contribute to a reluctance to report violence. The introduction of the fieldworker survey to the 2015 Zimbabwe Demographic and Health Survey (DHS) provides the first opportunity to test associations between interviewer characteristics and the reporting of IPV in the largest source of IPV data available for low- and middle-income countries (LMIC).

Methods: Three separate, multilevel, logistic regression models were used to examine associations between the reporting of physical, sexual, and emotional IPV and interviewer characteristics (age, sex, marital status, and differences in these indicators between interviewer and respondent), language of the interview, and the interviewer's previous experience conducting DHS.

Findings: Previous experience as a DHS interviewer was associated with significantly lower odds (aOR: 0.67) of reporting physical IPV.

Interpretation: It is possible that the rigorous nature of DHS fieldworker training may reduce some interviewer effects in the short term. Potential psychological, social, and statistical explanations are explored for the finding that previous DHS experience is associated with a significantly lower odds of reporting physical IPV. Researchers should also consider incorporating the fieldworker dataset in future DHS studies to control for potential interviewer error, account for the clustering of data by interviewer, and increase the robustness of DHS analyses. Understanding

how DHS interviewers shape the reporting of IPV is a step towards accurately measuring its burden in LMIC.

Introduction: Globally, one in three women will report intimate partner violence (IPV) at some point in their lives (World Health Organization, 2017). In many low- and middle-income countries (LMIC), the rate of reported IPV is much higher- ranging from an average of 24.6% in Western Pacific countries to 37.7% in South-East Asia (World Health Organization, 2013). IPV is associated with negative health outcomes through physical trauma, increased stress and anxiety, and the fear and control that often accompany abusive relationships (World Health Organization, 2013; World Health Organization, 2017). The effects of IPV are also shown to extend well beyond the victim of abuse, negatively impacting the entire family unit (J. Campbell et al., 2002; R. Campbell, Dworkin, & Cabral, 2009; World Health Organization, 2013).

An accurate measure of prevalence is foundational to the development of effective interventions and policies to reduce IPV. However, IPV is thought to be widely underreported (Ellsberg, Heise, Peña, Agurto, & Winkvist, 2001; Garcia-Moreno, Jansen, Ellsberg, Heise, & Watts, 2006; Palermo, Bleck, & Peterman, 2014). Many women are reluctant to report violence due to feelings of shame, fear of being blamed, a reluctance to be seen as disloyal, or fear for their safety (Ellsberg et al., 2001; R. Jewkes, Levin, & Penn-Kekana, 2002; Palermo et al., 2014). Women may not categorize the acts they experience as violence, particularly in conservative, patriarchal societies in which IPV is often normalized. (Palermo et al., 2014; Stephenson, Koenig, Acharya, & Roy, 2008). In a global study of women in ten LMIC, only 34% to 79% of women who reported physical IPV had ever disclosed it to anyone, fewer than 10% had reported it to law enforcement, and fewer than 6% to medical services (Garcia-Moreno et al., 2006).

In addition to socio-cultural reasons for the underreporting of IPV, it is possible that the sociodemographic characteristics of the person collecting data may influence reporting of IPV (Ellsberg et al., 2001). Known as interviewer error, studies since the late 1960s show that interviewer characteristics such as gender, race, age, and previous experience as an interviewer can influence how someone responds to a sensitive survey question (R. E. Davis, Couper, Janz, Caldwell, & Resnicow, 2009; Krysan & Couper, 2003; McGlone, Aronson, & Kobrynowicz, 2006; Schuman & Converse, 1971). While there are many reasons for interviewer error, one explanation is related to the concept of desirability bias. That is, respondents may self-scrutinize and edit their responses based on a desire to present a positive image or to avoid revealing a stigmatized health behaviour, especially when the interviewer is deemed to be an ‘outsider’ to one or more demographic groups with which the respondent identifies (R. E. Davis et al., 2009).

Differences between a survey respondent’s true attitudes or experiences and their survey responses have the potential to bias data collection and analysis. If respondents feel they cannot truthfully answer a particular question, the mean, variance, standard deviation, and standard errors of the question will be altered. This has the potential to significantly change the statistical associations between variables in data analysis (D. W. Davis, 1997; R. E. Davis et al., 2009; Groves, 2004). Moreover, each interviewer commonly interviews multiple respondents, resulting in the clustering of respondents by interviewer and compounding the effects of interviewer error. That is, if one interviewer has a characteristic that biases responses, the effect may be seen for all interviewees they interview. While some IPV studies have attempted to mitigate interviewer error using multilevel modelling techniques (R. K. Jewkes, Levin, & Penn-Kekana, 2003; R. Jewkes et al., 2002), this only identifies that an interviewer bias effect exists, it does not identify the characteristics of the interviewer that are creating the bias. .

The Demographic and Health Surveys (DHS) represents the largest source of information on IPV in LMIC. Consisting of data on 90 countries across more than 30 years, the DHS is a comprehensive, publicly-available source of data across a range of biological and social indicators (ICF International, 2017b). Until recently, however, there was no mechanism by which to assess interviewer error in the DHS. The announcement that a survey of interviewers had been implemented in the 2015 Zimbabwe DHS signals the first opportunity to quantitatively test associations between interviewer characteristics, differences in characteristics between interviewer and respondent, and DHS variables (Kishor, Elkasabi, & Nybro, 2017). This study aims to fill a gap in the literature by being the first to examine interviewer error in the DHS as it pertains to the reporting of physical, sexual, and emotional IPV.

Methods: This analysis combined two surveys from the 2015 Zimbabwe DHS: the individual survey of women ages 15-49 (n=9,955) and the fieldworker (interviewer) dataset (n=120). For the women's dataset, the DHS first used the most recent Zimbabwean census data to create geographic demarcations called Primary Sampling Units (PSUs). Twenty to thirty households were then interviewed from each PSU, and approximately 73% of these respondents were randomly selected to answer the Domestic Violence Module. Of these, only ever-married women were asked questions about current or past IPV (n=5,522). All interviewers trained to collect the 2015 DHS women's survey were interviewed by DHS staff. The data from the women's and fieldworker surveys were merged using the fieldworker identification code (v028), resulting in a dataset in which every line is a woman aged 15-49 and the characteristics of the interviewer are included on the line of each woman they interviewed.

Outcomes: Three outcome variables measured reported lifetime prevalence of three types of IPV and were coded 1 if the respondent indicated that her husband or male partner had ever committed physical violence (pushed, shook, or threw something; slapped, punched, or kicked; attempted to

strangle or burn her; twisted her arm or pulled her hair; or threatened with a knife or gun), sexual violence (partner physically forced sex when not wanted; ever forced other sexual acts when not wanted) or emotional violence (humiliated in public, threatened harm, insulted her or made her feel badly) against her after the age of 15.

Key Covariates: Eight key covariates measuring the characteristics of the interviewer were created using data imported from the fieldworker survey. In addition to the interviewer's age, sex, and marital status, four covariates measured differences between interviewer and respondent. These variables were binary, coded 1 if the age difference between respondent and interviewer was greater than five years in either direction and if marital status, sex, or home region of Zimbabwe were different between a respondent and her DHS interviewer. To incorporate a measure of ethnic identity, language of interview was also included and coded 1 if the interview was conducted in a language other than English. Zimbabwe has 16 official languages, with English serving most often as the second language and lingua franca (deVere, 2017). Since more than 90% of Zimbabweans speak either Shona or Ndebele as a native language (but few speak both), the ethnic identities of a respondent and interviewer can reasonably be assumed to be the same if the interview was conducted in a non-English language.

Analysis: In this dataset, multiple respondents were assigned to each interviewer, creating a nested data structure. Multilevel modelling is required when analysing nested data to correct for the downward bias in standard errors caused by non-independent observations (Diez-Roux, 2000; Steele, Diamond, & Amin, 1996; Steele & Diamond, 1999). This approach also introduces a random error term into the regression equation, allowing the intercept to vary across interviewers and accounting for the effect of unmeasured or unmeasurable covariates (Diez-Roux, 2000; Durrant, Groves, Staetsky, & Steele, 2010; Steele & Diamond, 1999). Three multilevel logistic regression models were fit (one for each IPV outcome), using the interviewer identification code (v028) as the random intercept. Models included all eight key covariates as well as individual,

household, and community variables known from the literature to be associated with IPV. The respondent's level of education, age at first cohabitation, place of residence (rural vs. urban), ideal number of children, employment status, and reporting of controlling behaviour were included as individual characteristics. A five-point scale of whether physical IPV is justified in any of five hypothetical scenarios and a four-point scale of decision-making autonomy used in previous DHS studies (Elfstrom & Stephenson, 2012; Metheny & Stephenson, 2017) were also included. Wealth quintile and spousal differences in age, ideal number of children, and education level between a respondent and her male partner were included as household characteristics. Following methods used in previous analyses of community-level effects using DHS data (Metheny & Stephenson, 2017; Stephenson, 2009; Stephenson, Baschieri, Clements, Hennink, & Madise, 2007; Stephenson & Elfstrom, 2012), community characteristics were proxied by aggregating individual-level responses to the level of the PSU. Means of IPV justification, controlling behaviour, age at marriage, decision-making autonomy, ideal number of children, household wealth, education level, female employment, and dyadic differences in age, education, and fertility preferences at the PSU level were included as measures of the community. To account for this additional nesting of women within communities, the PSU was also included as a fixed effect in each model.

Results: Overall, 30.1% of women reported physical IPV, 11.6% reported sexual IPV, and 31% reported emotional IPV. Interviewers were 27.1 years old on average, slightly younger than the average respondent age of 31.6 years. Only 31 respondents (0.6%) were interviewed by men. Most interviewers (70.5%) had never been married or lived with a partner, and less than one-fifth of interviewers had previously worked on a DHS. Nearly 58% were at least five years older or younger, 79.22% had a different marital status, and 17.37% were from a different region of Zimbabwe than the respondent they were interviewing (see Table 4).

Table 4: Sample Characteristics of 5,522 Women Aged 15-49 and 120 Fieldworkers from the 2015 Zimbabwe DHS

Indicator	Respondent	Interviewer
Age (μ, years)	31.6	28.8
Sex (%)		
Male	0	51.2
Female	100	48.8
Marital status (%)		
Married	80.3	59.7
Living with partner	4.6	0
Divorced/Separated/Widowed	15.1	5.6
Never married	0	34.7
Highest level of education (%)		
No education/Primary	29.6	1.8
Secondary	63.0	17.1
Higher	7.4	81.1
Place of Residence (%)		
Urban	41.7	56.5
Rural	58.4	43.3
Age at Marriage (%)		
≤ 16	22.0	-
17-18	25.9	-
19+	52.1	-
Wealth Quintile (%)		
Poorest	17.9	-
Poorer	16.1	-
Middle	15.5	-
Richer	27.5	-
Richest	23.0	-
Region of Residence		
Manicaland	11.8	12.5
Mashonaland Central	11.9	6.7
Mashonaland East	10.1	6.7
Mashonaland West	11.7	5.7
Mashonaland North	8.8	5.8
Midlands	7.7	6.7
Masvingo	9.4	12.5
Harare	11.2	16.7
Bulawayo	10.1	19.2
Bulawayo	7.2	6.7
IPV Justification (μ, 0-5)	0.8	-
Ideal number of children (μ)	4.1	-
Employment Status (%)		
Employed	45.8	100
Experienced controlling behaviour (%)	66.1	-
Decision-making autonomy (μ, 0-3)	2.6	-
Reported IPV (%)		
Physical	30.1	-
Sexual	11.6	-
Emotional	30.9	-
Experience conducting a DHS (%)	-	19.4

When controlling for individual, household, and community-level effects, most interviewer characteristics were not significantly associated with the reporting of physical, sexual, or emotional IPV (see Table 2). However, previous experience working on a DHS was associated with significantly lower odds of reporting physical IPV (aOR=0.67). Results of each multilevel logistic regression model are presented in Table 5.

Discussion: While the lack of significant associations between interviewer characteristics and respondent reporting of IPV in this analysis is contrary to much of the evidence on interviewer error, one potential reason for this may be the especially rigorous nature of the DHS interviewer training process. The DHS use a standard interviewer training manual across all countries that includes both didactic training and practical data collection experience (ICF International, 2017a). Classroom training emphasizes the sensitivity of data collection, the imperative for privacy, and the importance of confidentiality for all modules. It also reviews each section of the three major surveys (Household, Individual, and Biomarker) in detail and provides demonstration interviews by experienced interviewer-trainers. Trainees also participate in role-play sessions before conducting supervised, practice interviews with real DHS households. Potential interviewers are then given written tests, with final selection as a DHS fieldworker based on their successful completion (ICF International, 2017a). The calibre of this training process may serve to attenuate interviewer effects regarding the reporting of IPV in the short term, perhaps by increasing fidelity to the study protocol beyond that achieved by other interviewer trainings. This would be consistent with evidence from the WHO Multi-Country Study of Violence Against Women. In Serbia and Montenegro, pressure to quickly finish fieldwork necessitated hiring previously-trained contract interviewers in addition to those trained by WHO, which uses a training process similar to the DHS (Jansen, Watts, Ellsberg, Heise, & Garcia-Moreno, 2004). WHO-trained interviewers saw

Table 5: Associations between Interviewer Characteristics and Reporting of Physical, Sexual, and Emotional IPV

Indicator (referent)	Physical IPV				Sexual IPV				Emotional IPV			
	Adj. Odds Ratio	p-value	95% CI		Adj. Odds Ratio	p-value	95% CI		Adj. Odds Ratio	p-value	95% CI	
Interviewer sex (male)	1.90	0.214	0.69	5.24	1.54	0.584	0.33	7.12	1.26	0.676	0.42	3.79
Interviewer experience collecting a DHS (no)	0.67	0.015	0.49	0.93	1.08	0.662	0.77	1.52	0.86	0.427	0.58	1.26
Interviewer Marital Status (never married)	0.79	0.330	0.49	1.27	0.58	0.103	0.30	1.12	0.77	0.344	0.44	1.33
Interviewer Age	1.01	0.803	0.96	1.05	0.99	0.775	0.94	1.04	1.01	0.697	0.96	1.07
Language of Interview (English)	0.94	0.654	0.730	1.22	0.748	0.108	0.52	1.07	0.94	0.652	0.72	1.23
Interviewer/Respondent difference in marital status (no)	0.93	0.747	0.59	1.46	0.64	0.182	0.33	1.23	0.94	0.824	0.57	1.56
Interviewer/Respondent difference in region (no)	0.88	0.297	0.70	1.12	0.96	0.815	0.69	1.34	1.03	0.817	0.81	1.31
Interviewer/Respondent difference in age of >5 years (no)	0.95	0.196	0.88	1.03	0.97	0.609	0.87	1.09	0.96	0.282	0.88	1.03

significantly greater reporting of physical violence, sexual violence, and greater respondent satisfaction compared to the contract interviewers, who had a greater degree of variability in the rigor of their training (Jansen et al., 2004).

The only significant interviewer effect identified was a lower odds of reporting physical IPV by experienced DHS interviewers. Similar associations between greater interviewer experience, reduced interview quality, and reduced reporting of other types of sensitive data have been found in previous studies (Chromy, Odom, Eyerman, & McNeeley, 2003; Gfroerer, Eyerman, & Chromy, 2002; Hughes, Chromy, Giacoletti, & Odom, 2002; Olson & Peytchev, 2007; Olson & Bilgen, 2011; Park et al., 2014; Singer, Frankel, & Glassman, 1983). While the limitations of cross-sectional data mean the directionality and mechanisms by which interviewer experience may be associated with reporting of physical IPV remain unknown, there are three potential explanations for this relationship.

First, the relationship between previous experience and reporting of sensitive data may stem from differences in how people complete tasks as novices and how they complete them after gaining considerable experience. As people become more experienced at performing a particular task, the cognitive schemas utilized to implement them are moved from the more limited working (short-term) memory to the more expansive long-term memory to reduce working memory load (Kalyuga, Ayres, Chandler, & Sweller, 2003; Shepherd, Zacharakis, & Baron, 2003; Sweller, Ayres, & Kalyuga, 2011). Consequently, the autonomic processing used to access long-term memory is associated with increases in various cognitive errors that can result in reduced task quality (Shepherd et al., 2003). Olson and colleagues (2007; 2011) found experienced interviewers increase the speed at which they conduct interviews and are rated by respondents as less invested in the interview than novice interviewers. This may then decrease the ability to accurately collect

sensitive data. Similar findings were seen in successive waves of the National Survey of Drug Use and Health (NSDUH) in the United States in which reported rates of illicit drug use were significantly lower among respondents who were interviewed by fieldworkers with previous experience administering the NSDUH (Chromy et al., 2003; Gfroerer et al., 2002; Hughes et al., 2002; Park et al., 2014). Interestingly, this relationship was not significant among interviewers who had previously served as fieldworkers for other surveys but were naïve to the NSDUH (Park et al., 2014). While the rigorous interviewer training provided to DHS interviewers may serve to reduce interviewer effects in the short term, this effect may diminish over time, even as interviewers receive refresher training for each round of data collection. That is, as interviewers gain experience with a survey instrument and the task of interviewing becomes more rote, the amelioration of interviewer effects due to DHS interviewer training may wane.

Second, it is possible that experienced interviewers elicit *accurate* reporting of physical IPV, meaning the association seen in this analysis represents an over reporting of physical IPV by novice interviewers. While the over reporting of IPV is thought to be rare (Ellsberg et al., 2001), novice interviewers are often given fewer assignments (Park et al., 2014) and tend to spend more time with each respondent (Olson & Peytchev, 2007) than experienced interviewers. These two patterns may allow more time for novice interviewers to develop a higher level of rapport with respondents than do experienced interviewers. While ostensibly a net positive in data collection, rapport can lead to a phenomenon known as respondent acquiescence, or ‘yea-saying’. Acquiescence occurs when respondents reply in the affirmative to sensitive survey questions in order to maintain a high level of rapport with their interviewer (Olson & Bilgen, 2011). More experience collecting DHS data may allow interviewers to strike a balance that allows for accurate data collection without acquiescence and the subsequent potential for over reporting.

Lastly, the observed association between interviewer experience and physical IPV may be due to unobserved heterogeneity and not be related to interviewer experience at all. Researchers analysing the NSDUH posited that the significantly higher rates of marijuana and cocaine use reported to novice interviewers could be partially due to sampling bias, wherein novice interviewers were more likely to be assigned to lower-income, urban areas that traditionally had higher rates of illicit drug use than the higher-income, suburban, or rural areas canvassed by experienced interviewers (Park et al., 2014). A similar pattern is possible for DHS and the reporting of IPV. For example, novice interviewers in the 2015 Zimbabwe DHS were significantly more likely than experienced interviewers to interview rural ($\chi^2=27.64$, $p<0.000$) and less educated ($\chi^2=10.01$, $p=0.001$) respondents - two groups with traditionally higher prevalence of IPV. This analysis controlled for these two variables, but the same pattern is possible for other indicators that are also associated with IPV but not controlled for in the modelling. Therefore, if novice or experienced fieldworkers were to be more likely to interview respondents with characteristics that are associated with IPV but not controlled for in the models (such as the male partner's drug or alcohol use, childhood trauma, or the respondent's contravention to her community's fertility norms), any significant associations could be incorrectly attributed to differences in interviewer experience. Additional demographic data on all DHS fieldworkers, as well as an ability to track experienced interviewers over successive survey phases, would allow for more robust analyses of interviewer error.

Future Use of Fieldworker Datasets:

The DHS is set to include the fieldworker dataset in all future DHS surveys (Kishor et al., 2017). Fieldworker recruitment, training, and survey implementation likely vary by country, warranting additional studies of how interviewer effects might shape respondents' reporting of

IPV across contexts. The advent of the fieldworker dataset also gives researchers the opportunity to improve the robustness of analyses. Multilevel modelling accounts for the hierarchical nature of DHS data via the nesting of respondents within interviewers (Diez-Roux, 2000; Durrant & Steele, 2009; Durrant et al., 2010; Steele & Curtis, 2003; Stephenson, Elfstrom, & Winter, 2013). This approach corrects the downward bias in standard errors present when using Ordinary Least Squares regression with non-independent observations and introduces an error term that accounts for unmeasured or unmeasurable interviewer effects (Amin, Basu, & Stephenson, 2002; Clarke, Crawford, Steele, & Vignoles, 2015; Luke, 2005). Future DHS analyses should therefore consider using the fieldworker code as a random effect in countries where the fieldworker dataset is available in order to control for any interviewer effects present in the data and provide more efficient estimates of key covariates.

Limitations:

There are three main limitations to this study. The cross-sectional nature of DHS data precludes inferences of causality. Second, while half of the interviewers in the dataset were male, only 31 women were asked IPV questions by a male interviewer. This may reflect an effort on the part of DHS, or its sub-contracted agency in Zimbabwe, to gender-match respondents and interviewers for this module. This limits the ability to detect an interviewer-gender effect in the data. Third, the language of the interview was numerically-coded in the two datasets using different numbering systems and including different numbers of languages, precluding the ability to draw an exact match between the native tongue of the interviewer and language of the interview. While the ethnic landscape of Zimbabwe allows for a binary English/non-English variable to draw an approximation, the ability to differentiate non-English languages (i.e. Shona vs. Ndebele) would

give a better understanding of the ethnic and linguistic differences between interviewer and respondent.

Conclusion: This is the first study to use the newly-available DHS fieldworker dataset to understand associations between interviewer characteristics and the reporting of IPV in Zimbabwe. Variables that measure the attitudes or knowledge of interviewers (i.e., justification of violence, attitudes towards contraception, HIV knowledge) and more detailed information on the degree of previous DHS experience may help disentangle how interviewer effects and differences may be associated with the reporting of IPV. While interviewer characteristics are only one component in a complex, multilevel rationale for why IPV is thought to be underreported, understanding how DHS fieldworkers may shape the reporting of IPV is a step towards accurately measuring its burden in LMIC.

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Chapter 5: Structural Context and the Role of Positive Deviance from Community Norms in Shaping Risk for Sexual Intimate Partner Violence in 32 Low- and Middle-Income Countries

Abstract: Community norms shape a woman's risk of experiencing sexual intimate partner violence (IPV) by providing social scripts and access to social capital that influence their perceived value. These norms are in turn influenced by the structural environment in which they exist. Missing from the literature is an understanding of how an individual's departure from community norms –positive deviance - influences the risk of sexual IPV and how this effect may vary in different structural environments. Demographic and Health Survey data from 32 low- and middle-income countries (LMIC) were stratified into six structural environments by two fundamental structural factors: level of gender inequality and prevalence of sexual IPV. To examine how transcending community norms alters the odds of reporting sexual IPV across environments, six identical multilevel models were fit using indicators of positive deviance to 13 community norms as key covariates. Positive deviance is associated with both increased and decreased odds of reporting sexual IPV and the nature of these relationships vary by structural environment. Positive deviance had a greater effect on reporting sexual IPV in highly unequal societies. Positive deviance to fertility preferences and controlling behaviour was associated with increased odds of sexual IPV across contexts, highlighting the strength of these norms across LMIC. The accrual of social capital and differences in female autonomy across environments may be two ways positive deviance alters sexual IPV risk. A better understanding of how the salience of community norms varies by structural environment and how transcending these

norms shapes the risk for sexual violence may help highlight pathways for interventions to change restrictive social norms and increase female empowerment without increasing the risk of sexual IPV.

Introduction: Sexual intimate partner violence (IPV) is a serious global health concern that has been linked to poor reproductive and sexual health outcomes such as unwanted pregnancy, sexually transmitted infections, cervical cancer (Centers for Disease Control and Prevention, 2017; World Health Organization, 2013). Sexual IPV is also linked to physical trauma (Centers for Disease Control and Prevention, 2017; World Health Organization, 2013) and negative mental health outcomes, including depression, anxiety, and post-traumatic stress disorder (Centers for Disease Control and Prevention, 2017; Warshaw et al., 2009; World Health Organization, 2013). While the negative implications of sexual IPV are well-founded, patriarchal notions of marriage as de facto and permanent consent for sex remain pervasive in many contexts (Yllö & Torres, 2016). Only in the past 25 years has sexual violence within marriage begun to be criminalized in low- and middle-income countries (LMIC) (Yllö & Torres, 2016), and the United Nations estimates more than 600 million women still live in countries where sexual IPV within union is legal (UN Women, 2015). The World Health Organization estimates more than one-third of women globally will experience physical and/or sexual intimate partner violence in their lifetimes (World Health Organization, 2013), but the legal and social barriers to reporting sexual IPV mean this is likely an underestimate of the true prevalence.

Most global health research on sexual IPV has examined individual-level risk factors (i.e. age, education, rurality, wealth, parity, occupation, autonomy) (Abrahams et al., 2004; Coker, Smith, McKeown, & King, 2000; Gage & Hutchinson, 2006). However, social-ecological theory states that the norms of a person's community also have an effect on the risk for IPV (L. L.

Heise, 1998). There is evidence that living in a community that is wealthier (Stephenson et al., 2008), has more egalitarian gender norms (Beyer et al., 2015; Pallitto & O'Campo, 2005), and greater female autonomy (Koski et al., 2011; World Health Organization/ London School of Hygiene and Tropical Medicine, 2010) is associated with a woman's reduced odds of reporting IPV. Taken together, the community effects literature suggests that living in a place that provides more social and economic opportunities for women may reduce IPV (Beyer et al., 2015; VanderEnde et al., 2012).

However, much of the existing research lacks a holistic view of how social-ecological levels interact with each other to shape the risk of IPV. First, individual characteristics or the characteristics of the household in which a woman lives (i.e., those *below* the level of the community) may moderate the effect of community norms on an individual woman's risk for IPV by empowering her to move beyond restrictive, gendered expectations. For example, a woman whose family places a high value on female education may be encouraged to complete secondary school- deviating from the community norm of leaving school early for marriage. The self-efficacy needed to transcend the prevailing community norms may also stem from non-familial social networks that create a sense of agency- such as when secondary schooling exposes a women to others who have lower fertility preferences (Goldenberg & Stephenson, 2017). Secondly, structural norms (i.e. *above* the level of the community) may influence which community norms shape the risk for IPV- and to what extent. For example, it may be difficult for a community or household norm to exist that encourages women to continue their education if that community exists in a society in which women are prohibited from attending secondary school. Examining how the community interplays with other levels of the environment is critical for understanding how community factors shape the risk for sexual IPV.

This study applies the concept of positive deviance to examine the interaction between individual characteristics and community norms on the reporting of sexual IPV. This approach uses a strength-based lens to study the behaviours and characteristics of those who have better outcomes than others in their community even though they are exposed to the same community and structural norms (Walker et al., 2007). In this study, positive deviance is quantified statistically as being different, by a standard measure, from the community mean in a demonstrably advantageous way. Positive deviance was initially used to study child nutrition, with the aim of understanding why some children were malnourished while others were not, despite nearly identical living situations (Zeitlin et al., 1990). By applying this to IPV, it may be possible to understand which behaviours are already present in the community that can contribute to a lowered risk for violence.

Social-ecological and feminist theories of IPV suggest two structural factors are essential for IPV to occur (Jewkes, 2002). Differences in 1) the degree of gender inequality and 2) the normalization of IPV may alter how community norms are formed and which community norms are most salient to shaping the risk for sexual IPV. To examine the interaction between community norms and their structural environment, this study situates countries (and the communities therein) according to levels of IPV prevalence and gender equality. This allows for comparison of how the interactions between the individual and community levels (e.g. positive deviance) varies by structural environment. This has the potential to uncover how different structural environments affect how positive deviance to community norms shapes the risk for sexual IPV.

It is hypothesized that individual positive deviance to most community norms will be significantly associated with a lower odds of reporting sexual IPV due to the protective effects of

higher levels of things like education (female and male), wealth, and decision-making power known from previous IPV literature (World Health Organization, 2013). However, positive deviance to some norms may be seen as challenging deep-seated community norms, increasing the risk of sexual IPV as a way to restore the traditional gender roles (Blanc, 2001a). Considering that positive deviance may be rarer in environments with stricter gender norms, we also hypothesize that positive deviance will have a larger effect (in both directions) in structural environments of high-IPV and high-gender inequality than in settings with lower levels of IPV and gender inequality. A more nuanced understanding of how macrosocial contexts alter how transcending community norms is associated with the risk of sexual IPV has the potential to highlight novel, modifiable factors present across countries that can be leveraged as pathways to reduce sexual IPV.

Methods: This analysis used data from the women's questionnaire of all Demographic and Health Surveys (DHS) collected from 2010 to 2016 that included sexual IPV questions (n=32). Using a two-stage sampling design, the DHS use the most recent census data from each country to create geographic demarcations called Primary Sampling Units (PSUs). Twenty to thirty households are then interviewed from each PSU. A percentage (between 50% and 80% in most countries) of these respondents are randomly selected to answer the Domestic Violence Module. Of these, only ever-married women are asked questions about current or past IPV. The final sample for this analysis includes ever-married respondents ages 15-49 from 32 countries representing all six WHO regions. Samples ranged from 1,448 (Namibia) to 34,681 respondents (Colombia) (see Table 6).

Table 6: Sample Size, IPV Prevalence, and Gender Inequality Index in 32 Low- and Middle-Income Countries

Country	Sample Size	Sexual IPV Prevalence Pool		Gender Inequality Index Pool	
		Prevalence (%)	Pool	GII Score	Pool
Afghanistan	21,273	8.4%	Medium	0.667	High
Angola	7,669	7.8	Medium	--	Medium
Armenia	3,539	1.1	Low	0.293	Low
Cambodia	3,498	4.6	Low	0.479	Low
Cameroon	4,002	15.1	High	0.568	Medium
Chad	3,807	8.9	Medium	0.695	High
Colombia	34,681	9.3	Medium	0.393	Low
Comoros	2,528	1.7	Low	--	Medium
Côte D'Ivoire	5,018	7.1	Medium	0.672	High
Dominican Republic	5,800	5.2	Medium	0.470	Low
Democratic Republic of Congo	5,688	25.5	High	0.663	High
Egypt	6,692	4.0	Low	0.565	Medium
Ethiopia	4,720	7.6	Medium	0.499	Low
Gabon	4,147	19.3	High	0.542	Medium
Gambia	3,542	4.4	Low	0.641	High
Haiti	6,650	12.3	High	0.593	Medium
Honduras	12,494	6.3	Medium	0.461	Low
Kyrgyz Republic	4,829	4.2	Low	0.394	Low
Mozambique	5,824	7.8	Medium	0.574	Medium
Namibia	1,448	7.3	Medium	0.474	Low
Nepal	3,505	14.7	High	0.497	Low
Peru	13,483	9.1	Medium	0.385	Low
Philippines	8,160	6.1	Medium	0.436	Low
Rwanda	1,906	11.6	High	0.383	Low
São Tomé and Príncipe	1,729	7.1	Medium	0.524	Medium
Sierra Leone	4,315	8.9	Medium	0.650	High
Tajikistan	4,399	3.8	Low	0.322	Low
Tanzania	7,597	12.4	High	0.544	Medium
Timor L'este	2,162	2.1	Low	--	Medium
Togo	5,373	8.1	Medium	0.556	Medium
Zambia	9,409	17.2	High	0.526	Medium
Zimbabwe	5,800	11.7	High	0.540	Medium

Outcome: The outcome variable measured lifetime experience of sexual IPV and was coded 1 if the respondent indicated that a husband or male partner had ever committed sexual violence

(partner physically forced sex when not wanted; ever forced other sexual acts when not wanted) against her after the age of 15.

Key Covariates: Key covariates included 11 binary variables measuring positive deviance from community norms (see Table 2). Since the DHS does not collect community-level data, methods used in previous studies were employed to proxy community-level norms from individual-level data (Metheny & Stephenson, 2017a; Stephenson, Elfstrom, & Winter, 2013a). First, data from all respondents in a given PSU were aggregated to create a community mean (for continuous variables) or proportion (for binary variables). To calculate positive deviance for continuous variables, the difference between each woman's response and the community's mean was calculated and standardized to a z-score. Respondents whose z-scores were at least one standard deviation above or below the community mean (depending on the directionality of positive deviance) were coded as a positive deviant. For binary variables, respondents were considered positive deviants if they exhibited a positive deviance characteristic and the proportion of women in the community who also exhibited this characteristic was less than or equal to the national average for each country (see Table 7).

Table 7: Key Covariates of Positive Deviance from Community Norms

Domain and PD Variable	Definition of Community Norm	Direction of Positive Deviance
Demographic and Fertility Norms		
Education	Average number of years of education completed for women ages 15-49 in a community	≥ 1 SD More years of education than the community average
Dyadic difference in education	Average difference in number of years of education completed for a respondent and her husband in a community	The same category of educational attainment in a community where the proportion is below the national average
Age at marriage	Average age at marriage for women ages 15–49 in the community	Marrying at an age that is ≥ 1 SD older than the community average
Dyadic difference in age	Proportion of women in a community whose partners are at least five years older or younger	Fewer than five years' age difference between partners in a community where the proportion of partners with greater than five years' age difference is above the national average

Fertility preferences	Average ideal number of children in a community	Desiring ≥ 1 SD fewer children than the community average
Socio-Economic Norms		
Household Wealth	Average score on a five-point scale that reflects ownership of durable goods and housing characteristics in a community	Having ≥ 1 SD higher household wealth score than the community average
Gender and Inequality Norms		
Decision-making autonomy	Average score for women in a community on a five-point scale where a higher score indicates higher decision-making control in four scenarios.	Having ≥ 1 SD more decision-making autonomy than the community average
Presence of controlling behaviours	Proportion of women in the community whose partners limit their freedom of movement, communication, or privacy	Not experiencing controlling behaviour in a community where the proportion of women who experience controlling behaviour is above the national average
Justification of IPV	Average score for women in a community on a five-point scale of attitudes towards domestic violence, with a higher score indicating violence is more justified	Justifying IPV in ≥ 1 SD fewer scenarios than is average

*not measured in all countries

Demographic and Fertility Norms: Community norms and social scripts that reinforce a younger age at marriage, higher fertility, and lower education have been shown to be associated with increased odds of experiencing IPV among LMIC women (Watts & Seeley, 2014). Similarly, the degree of difference between partners in these indicators have also been associated with an increased odds of experiencing IPV. Stemming from a power imbalance that arises from inequality in these key indicators, violence is often used to reset the balance of power in the relationship, regardless of which partner is older, more educated, or desires more children (Ackerson et al., 2008). Positive deviance is classified as an older age at marriage, desiring fewer children, and having more years of education than the community mean. Similarly, those respondents who have parity in age, education, and fertility preferences with their male partners when this is uncommon in the community would be considered positive deviants.

Socio-Economic norms

Women whose household wealth was above the average for their community were considered positive deviants. A lack of basic resources and the stress of poverty may act as a

trigger for inciting IPV (World Health Organization/ London School of Hygiene and Tropical Medicine, 2010). In many LMIC, frustration and stress over a man's inability to live up his prescribed gender role as sole provider for his family may overflow into acts of violence (World Health Organization/ London School of Hygiene and Tropical Medicine, 2010). Therefore, while IPV exists across all socioeconomic strata, there is a strong negative relationship between household wealth and experiencing IPV.

Gender and Inequality Norms

Normative gender roles and gender inequality are associated with increased IPV due to longstanding patriarchal norms of male dominance and female subordination (Hatcher et al., 2013b; World Health Organization/ London School of Hygiene and Tropical Medicine, 2010). These norms perpetuate hierarchical gender roles and socialize violence as an acceptable way to assert dominance when these structures are threatened (Jewkes, 2002; Jewkes et al., 2010a; Mishra & Tripathi, 2011). Therefore, greater decision-making autonomy, decreased normalization of IPV, and lower levels of gender inequality at a structural level are all associated with decreased odds of experiencing IPV (World Health Organization, 2013). These structures play out at the dyadic level through a woman's justification of IPV and a male partner's controlling behaviour and jealousy, all of which are associated with increased odds of experiencing IPV (Capaldi et al., 2012). Therefore, women who did not experience controlling behaviour, have extramarital partners, or justify IPV in communities where this was common were classified as positive deviants.

To assess whether the association between positive deviance and sexual IPV varies by structural environment, all countries were pooled into separate datasets (n=6) containing countries with 'high' (>10%), 'medium' (5%-10%), and 'low' (0%-5%) levels of IPV prevalence

as well as ‘high’ (>0.6), ‘medium’ ($0.5-0.6$), and ‘low’ (<0.5) levels of gender inequality according to the United Nations Development Programme’s Gender Inequality Index (GII) (see Table 1). (United National Development Programme, 2015) The GII uses measures of reproductive health, female empowerment, and female economic status to measure gender equality on a 0-1 scale, with a lower score indicating a lower level of inequality. The three countries without a recent GII score were pooled using countries with similar Human Development Index (HDI) rankings as benchmarks. (United Nations Development Programme, 2016).

Analysis: The nesting of respondents within communities (PSUs) and communities within countries means that the data has a three-level nested structure, necessitating the use of multilevel modelling in this analysis (Assari, 2013). Compared to standard logistic regression analyses, multilevel modelling corrects for the downward bias in standard errors created by the non-independent nature of nested data and introduces an error term that captures the effects of unobserved covariates (Assari, 2013). Six multilevel logistic regression models were fit, one for each structural environment. Models were identical in each context and included the 13 positive deviance covariates as well as measures of these variables at the individual and community levels and rural/urban status. In these datasets, respondents are nested within communities (PSUs) and communities are clustered within countries. However, sparseness in higher-order clusters (defined as 50 clusters or fewer) widens confidence intervals and increases the chance of a Type I error (B. A. Bell, Ferron, & Kromrey, 2008). Since the maximum number of level-three clusters in any one dataset was 12, country was instead added as a fixed effect at level one to account for the nesting of participants by country.

Results: The reported lifetime prevalence of sexual IPV varied widely across countries, from 1.1% in Armenia to 25.5% in the Democratic Republic of Congo (DRC). Across structural environments, results at the individual and household levels are largely consistent with those found in previous literature.(World Health Organization, 2013) More educated women, those who marry at an older age, and those with more decision-making autonomy had significantly lower odds of reporting sexual IPV across contexts. Likewise, women who more often justify IPV, are employed outside the home, report controlling behaviour, and have had extramarital partners in the past 12 months had significantly greater odds of experiencing sexual IPV (see Table 8).

Table 8: Associations between Community Norms, Positive Deviance, and Sexual IPV among 32 Low- and Middle-Income Countries Pooled by Structural Environment

aOR 95% CI p-value	Structural environment					
	Low GII (n=66,536)	Medium GII (n=55,686)	High GII (n=45,797)	Low IPV (n=67,048)	Medium IPV (n=34,375)	High IPV (n=36,764)
Individual/Household						
Secondary Education	0.72 0.65,0.80 0.000*	0.69 0.61,0.78 0.000*	0.92 0.84,1.01 0.082	0.92 0.82,1.03 0.155	0.114 0.73,1.04 0.114	0.89 0.81,0.97 0.009*
Rural	0.93 0.83,1.04 0.190	0.89 0.78,1.03 0.119	0.94 0.85,1.04 0.255	0.80 0.82,0.89 <0.001*	0.72 0.61,0.86 <0.001*	0.93 0.84,1.03 0.187
Age at Marriage (<16)						
17-18	0.96 0.87,1.06 0.412	1.10 0.97,1.25 0.130	1.10 0.92,1.08 0.956	0.92 0.85,01.00 0.056	0.97 0.87,1.07 0.541	0.98 0.90,1.06 0.616
19+	0.82 0.74,0.91 0.000*	0.89 0.78,1.01 0.074	0.88 0.81,0.996 0.003*	0.83 0.77,0.91 <0.001*	0.93 0.83,1.04 0.217	0.91 0.84,0.99 0.029*
Wealth (Poorest)						
Poorer	0.89 0.80,1.00 0.044*	0.83 0.72,0.95 0.009*	0.94 0.83,1.05 0.274	0.96 0.87,1.06 0.445	0.98 0.85,1.13 0.774	0.90 0.81,1.01 0.071
Middle	0.79 0.68,0.91 0.001*	0.77 0.63,0.93 0.006*	0.077 0.74,1.02 0.077	0.93 0.73,0.94 0.003*	0.90 0.74,1.10 0.308	0.81 0.70,0.94 0.006*
Richer	0.57 0.47,0.69 0.000*	0.62 0.48,0.80 0.000*	0.83 0.59,0.90 0.003*	0.74 0.63,0.88 <0.001*	0.86 0.66,1.10 0.228	0.63 0.52,0.77 <0.001*
Richest	0.36	0.42	0.59	0.61	0.81	0.47

	0.28,0.46 0.000*	0.30,0.57 0.000*	0.44,0.79 <0.001*	0.49,0.75 <0.001*	0.56,1.15 0.238	0.36,0.62 <0.001*
IPV Justification	1.04 0.99,1.08 0.131	1.06 1.01,1.11 0.015*	1.10 1.07,1.12 <0.001*	1.12 1.09,1.16 <0.001*	1.09 1.06,1.14 <0.001*	1.07 1.05,1.10 <0.001*
Ideal Number of Children	1.03 1.00,1.05 0.058*	1.02 1.00,1.03 0.012*	1.01 0.99,1.03 0.268	1.03 1.02,1.04 <0.001*	1.02 1.00,1.05 0.017*	0.99 0.98,1.01 0.874
Employed	1.31 1.21,1.42 <0.001*	1.35 1.22,1.50 <0.001*	1.14 1.06,1.23 <0.001*	1.17 1.08,1.27 <0.001*	1.40 1.24,1.58 <0.001*	1.20 1.11,1.30 <0.001*
Controlling Behaviour	4.64 4.06,5.30 <0.001*	3.05 2.58,3.62 <0.001*	4.16 3.62,4.78 <0.001*	4.47 3.95,5.06 <0.001*	3.65 3.09,4.31 <0.001*	4.93 1.30,5.65 <0.001*
Decision-making Autonomy	0.90 0.86,0.95 <0.001*	0.91 0.85,0.97 0.002*	0.91 0.87,0.95 <0.001*	0.90 0.86,0.94 <0.001*	0.89 0.85,0.94 <0.001*	0.90 0.87,0.94 <0.001*
Dyadic Difference in Education	0.99 0.90,1.08 0.804	1.06 0.93,1.21 0.410	1.03 0.95,1.12 0.490	0.96 0.88,1.04 0.282	0.92 0.83,1.02 0.107	1.05 0.97,1.14 0.239
More than 5 years' age difference	1.05 0.95,1.17 0.318	1.11 0.98,1.27 0.109	0.90 0.83,0.97 0.007*	0.99 0.93,1.06 0.748	0.93 0.82,1.04 0.209	0.93 0.85,1.00 0.083
Community Norms						
Community Mean age at Marriage	0.97 0.94,0.99 0.013*	0.99 0.95,1.02 0.440	0.97 0.95,1.00 0.025	0.98 0.95,1.00 0.049	1.00 0.95,1.04 0.816	0.96 0.84,0.99 0.022*
Community IPV Justification	1.14 1.03,1.27 0.014*	1.11 0.99,1.24 0.065	1.08 1.02,1.15 0.011*	1.04 0.98,1.10 0.176	1.17 1.09,1.25 <0.001*	1.15 1.09,1.22 <0.001*
Community Decision-making Autonomy	1.13 0.99,1.28 0.073	1.10 0.95,1.29 0.211	0.93 0.85,1.01 0.099	0.97 0.90,1.05 0.464	0.83 0.75,0.91 <0.001*	0.86 0.89,0.94 <0.001*
Community Fertility Preferences	0.98 0.94,1.02 0.336	0.98 0.92,1.05 0.656	0.98 0.93,1.03 0.496	1.03 1.00,1.05 0.049	1.08 1.03,1.13 0.001*	0.99 0.95,1.03 0.729
Community Wealth	1.25 1.15,1.35 0.000*	1.20 1.08,1.33 0.001*	1.17 1.07,2.27 <0.001*	1.00 0.94,1.08 0.891	0.83 0.75,0.92 <0.001*	1.15 1.06,1.25 0.001*
Proportion of Women Employed	1.14 0.92,1.42 0.233	0.91 0.68,1.22 0.528	1.80 1.48,2.19 <0.001*	1.30 1.07,1.58 0.008*	0.71 0.54,0.94 0.015*	1.37 1.14,1.65 0.001*
Mean Female Education Level	0.99 0.96,1.02 0.393	0.99 0.95,1.02 0.447	1.00 0.97,1.03 0.980	1.01 0.99,1.04 0.329	1.07 1.03,1.11 <0.001*	1.04 1.01,1.06 0.006*
Proportion of Women Subject to Controlling Behaviour	1.33 1.00,1.76 0.049	1.52 1.07,2.16 0.020*	0.64 0.49,0.83 0.001*	2.32 1.86,2.88, <0.001*	2.87 2.01,4.08 <0.001*	0.68 0.52,0.90 0.008*
Proportion of couples with Differences in Education Level	1.24 0.96,1.61 0.102	1.11 0.79,1.58 0.543	1.02 0.79,1.33 0.871	1.74 1.50,2.02 <0.001*	1.89 1.54,2.31 <0.001*	0.88 0.66,1.16 0.365
Proportion of couples with more	0.63 0.47,0.85	0.50 0.35,0.73	0.97 0.75,1.25	0.91 0.72,1.15	0.88 0.57,1.34	0.89 0.67,1.18

than 5 years' age difference	0.003*	0.000*	0.794	0.417	0.556	0.420
Positive Deviance						
Education	0.89 0.78,1.01 0.062	0.85 0.72,0.99 0.041*	0.88 0.78,0.98 0.023*	0.91 0.81,1.03 0.130	0.94 0.89,1.11 0.455	0.88 0.80,1.00 0.057*
Dyadic Difference in Education	1.14 0.98,1.32 0.081	1.00 0.84,1.18 0.966	1.00 0.90,1.12 0.923	1.08 0.97,1.21 0.175	1.16 1.01,1.34 0.035*	0.94 0.84,1.05 0.297
Age at Marriage	0.86 0.75,0.97 0.015*	1.00 0.84,1.18 0.966	0.84 0.75,0.94 0.003*	0.87 0.78,0.97 0.013*	0.91 0.79,1.05 0.191	0.84 0.75,0.93 0.002*
Dyadic Difference in Age	1.10 0.98,1.23 0.121	1.18 1.01,1.38 0.034*	0.92 0.83,1.02 0.136	***	0.95 0.82,1.11 0.529	1.02 0.92,1.13 0.690
Fertility Preferences	1.27 1.11,1.44 <0.001*	1.50 1.29,1.74 <0.001*	1.22 1.08,1.37 0.002*	1.11 0.99,1.24 0.085	1.13 0.98,1.31 0.101	1.15 1.03,1.29 0.017*
Wealth	1.25 1.08,1.44 0.002*	1.12 0.93,1.34 0.223	1.08 0.97,1.20 0.177	1.06 0.95,1.20 0.289	0.93 0.81,1.06 0.281	1.12 1.01,1.24 0.028*
Decision-making Autonomy	1.03 0.89,1.19 0.716	0.96 0.81,1.15 0.679	1.05 0.94,1.18 0.394	0.92 0.81,1.03 0.145	0.91 0.78,1.06 0.218	1.05 0.94,1.17 0.387
Controlling Behaviours	1.30 1.09,1.54 0.003*	1.20 0.95,1.50 0.121	1.27 1.04,1.55 0.016*	1.00 0.83,1.13 0.970	0.99 0.76,1.28 0.924	1.47 1.22,1.77 <0.001*
Justification of IPV	1.14 1.03,1.27 0.014*	0.86 0.70,1.06 0.157	0.98 0.86,1.11 0.711	0.92 0.86,1.12 0.786	1.05 0.90,1.22 0.546	0.93 0.82,1.04 0.212

*=statistically significant at $p < 0.05$

Demographic and Fertility Norms

Positive deviance to community norms of education was associated with significantly lower odds of reporting sexual IPV in countries with medium and high levels of gender inequality (aOR:0.91 and 0.83, respectively). Marrying at an older age than is average for the community was also associated with significantly lower odds of reporting sexual IPV in medium GII countries (aOR:0.87) and high IPV countries (aOR:0.84). Being a positive deviant on dyadic age difference was associated with significantly greater odds of reporting sexual IPV in countries with high gender inequality (aOR:1.07) and a high prevalence of sexual IPV (aOR:1.12). Positive deviance on fertility preferences was associated with a significantly greater odds of

reporting sexual IPV across contexts, with significant findings in Low IPV (aOR:1.53), Low GII (aOR:1.28) and Medium GII countries (aOR:1.12), and High IPV Countries (aOR:1.15).

Socio-Economic Norm

A higher household income than is average for the community was associated with a significantly lower odds of reporting sexual IPV in countries with the highest levels of gender inequality (0.89) and significantly greater odds in Low GII countries (aOR:1.28).

Gender and Inequality Norms

Justifying IPV in fewer circumstances than the community norm was associated with significantly lower odds of reporting sexual IPV in High IPV countries (aOR:0.86) and Low GII countries (aOR:0.70). Positive deviance to experiences of controlling behaviour was associated with significantly lower odds of reporting sexual IPV in High IPV countries (aOR: 0.35) and High GII countries (aOR: 0.28).

Discussion: The results support the hypothesis that structural context alters how positive deviance to community norms is associated with sexual IPV, highlighting the need to recognize the structural environment in which positive deviance behaviours are enabled to occur. Overall, settings characterized by greater gender equity and lower IPV prevalence show weaker associations between positive deviance behaviours and reporting sexual IPV than contexts of higher inequality and IPV prevalence. In more egalitarian societies, positive deviance may represent less of a challenge to social expectations, making positive deviance less impactful than it is for those who live in more unequal contexts. This may be due to the less stringent gender norms commonly present in areas with lower IPV and gender inequality.

In synthesizing the results, two potential pathways for how positive deviance to community norms may shape the risk for sexual IPV arise. First, a woman's accrual of social

capital may provide insight into the observed relationships between positive deviance and the reporting of sexual IPV. Social capital is commonly defined as access to community resources and social networks, and may be formal (i.e. education or employment) or informal (i.e. networks of friends who can provide access to support and information) (Zolotor & Runyan, 2006). Positive deviance often provides access to formal social capital, which may also lead to the accrual of more informal forms of social capital such as social networks or differing perspectives on gender roles. Women who accrue social capital through positive deviance behaviours may also experience increased financial contributions and increased exposure to alternative social norms outside of the home that could shift their perceived value within the household, altering their risk for sexual IPV. These direct relationships between opportunities to accrue social capital and decreases in IPV are not new (Naved & Persson, 2008; Sambisa, Angeles, Lance, Naved, & Curtis, 2010; Stephenson & Tsui, 2003). However, positive deviance may indirectly shape the relationship between social capital and sexual IPV. Across contexts, women who were positively deviant to education and age at marriage, and therefore may be able to accrue formal social capital, had lower odds of reporting sexual IPV. However, positive deviance to *dyadic differences* in age and education were associated with significantly greater odds of reporting sexual IPV across contexts. It is possible that positive deviance behaviours that lead to the accrual of formal social capital generally may be less likely to be associated with an increased risk of sexual IPV than those that directly challenge male partners' sense of control within the household or status in the community. These have been shown to lead to IPV to restore power dynamics that favour males (Blanc, 2001a; World Health Organization/ London School of Hygiene and Tropical Medicine, 2010).

The second potential pathway between positive deviance and sexual violence may be partially explained by changes in female autonomy. Women who can marry later than the norm for their community may have greater autonomy in decisions around when to marry, and this autonomy may translate into increased equity and reduced violence within the marriage. Like the proposed explanation for the indirect role of social capital in shaping the risk of sexual IPV, women whose families allow (or encourage) an older age at marriage than the community norm may also hold less restrictive expectations and values for women. These are in turn linked to a lower risk of violence (Hadley, Brewis, & Pike, 2010). Positive deviance to norms of decision-making autonomy may be evidence of the role of autonomy in transcending social norms and reducing a woman's risk of sexual IPV. These results suggest interventions that work to transcend social expectations via increasing autonomy may be a useful pathway to reducing violence.

Two exceptions to the proposed pathways were observed. First, the association between positive deviance to fertility preferences and increased odds of reporting sexual IPV was significant across contexts. This may be because women feel pressure to conform to the fertility norms of their community both in low-fertility (Billari, Philipov, & Testa, 2009) and high-fertility (Paek et al., 2008) settings. Second, women who reported less controlling behaviour than was average for their community also had an increased odds of reporting sexual IPV across contexts. While this may seem counterintuitive, the way controlling behaviour is defined in the DHS may mask more subversive forms of control. That is, men who place fewer restrictions on their partners' movements and social associations may assert control in more private (i.e. less outwardly noticeable) ways. Another explanation for this finding may be that women with fewer restrictions on their movement and social associations may also have wider social networks that

give them a broader view of what constitutes violence, and these women are more likely to *report* sexual violence. Sexual violence within marriage is still commonly misunderstood across structural contexts, and the view that consent is permanently granted upon entering into a marriage is still widespread (UN Women, 2015). For example, six of the countries in this study have no law against marital rape at all (UN Women, 2015). While the reasons behind these two findings are likely to vary by country, the consistency of the results show the universality of patriarchal norms and represent the gendered expectations for women across structural contexts.

There are several limitations to this analysis. The cross-sectional nature of DHS data precludes inferences of causality between positive deviance and reporting of sexual IPV. The DHS also samples only ever-married women for the Domestic Violence Module, introducing a potential selection bias against partnered, non-married women who may also experience sexual IPV. As in previous studies of community norms using DHS data, the PSU was used as a proxy for the community. While this is the best approximation currently available, it is a purely geographical measure and may not fully correspond to the concept of community in terms of cultural context. Finally, the clustering of countries by structural environment inherently diminishes community- and country-level variation. For this reason, the results of this analysis should be viewed as a broad and exploratory analysis of how structural context may change the relationships between positive deviance to community norms and the risk for sexual IPV.

The associations identified between positive deviance and the reporting of sexual IPV vary by the country-level context of gender inequality and prevalence of IPV. Macro-social contexts alter the salience of positive deviance to some community norms, but are remarkably consistent for fertility preferences and controlling behaviour. These associations may be explained through one, or a combination of two, pathways: the accrual of social capital and gains

in autonomy that allow women to alter their risk of sexual IPV. The identification of positive deviance behaviours that are linked to lower reporting of sexual IPV provides insight into the ways in which women can transcend patriarchal norms and shift their risk of experiencing violence. In turn, these positive deviance behaviours may form the framework for developing interventions that use behaviours already present in the community to tackle the structural norms and inequalities that place women at risks for sexual violence.

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Chapter 6: Structural Stressors and Intimate Partner Violence in Indigenous Men Who Have Sex with Men in the United States

Abstract: American Indian, Alaska Native, and Native Hawai'ian (hereafter referred to as Indigenous) people experience structural stressors borne from historic and ongoing systems of oppression and colonialization. Indigenous men who have sex with men (MSM) also contend with sexuality-based stressors related to their sexual behavior and/or identity. The confluence of these structural stressors is likely to compound their negative effects on health outcomes, including intimate partner violence (IPV), but there is little literature on IPV in this population. To begin to understand associations between compounding social stressors and IPV in this population, a 30-minute, online survey consisting of instruments previously validated in LGBT or Indigenous communities was targeted to Indigenous MSM using social media algorithms. Logistic regression models were fit to calculate adjusted associations between race- and sexuality-based structural stressors, theory-derived points of resiliency, and lifetime experience of physical, sexual, and emotional IPV. Respondents (n=186) resided in 37 states and reported high levels of violence (physical: 50.3%, sexual: 40.7%, emotional: 83.2%). Anticipated stigma was significantly associated with a greater odds of reporting physical violence (aOR: 1.18). Reporting more instances of anti-Indigenous racism was significantly associated with reporting physical, sexual, and emotional IPV (aOR: 1.37, 1.29, 1.31, respectively). The results of this exploratory study suggest that Indigenous MSM experience high levels of IPV, and that structural stressors play a significant role as antecedents of violence. Anti-Indigenous racism

should be a focal point of larger studies designed to elucidate points of intervention in this underserved population.

Introduction: Native American/American Indian, Native Alaska, and Native Hawai'ian (hereafter referred to as Indigenous) people in what is referred to as the United States face ongoing, systemic oppression stemming from centuries of colonial rule and forced migration, as well as the eradication of language, culture, and traditional lands (King, Smith, & Gracey, 2009). These structural stressors are posited to be the primary determinant of poor health among Indigenous peoples worldwide (King et al., 2009). In addition to race-based stressors, many Indigenous men who have sex with men (MSM) experience stressors related to their sexual behavior and/or identity (Meyer, 1995). Both types of stressors are associated with poor physical and mental health outcomes and are important antecedents of intimate partner violence (IPV) (Kelleher, 2009). However, the resilience of Indigenous populations of North America cannot be overstated. Some of this stress may be buffered by a strong Indigenous identity and participation in Indigenous cultural practices (Walters & Simoni, 2002), suggesting cultural buffers could provide a point of intervention for IPV mitigation in Indigenous MSM.

Little is known about IPV in Indigenous MSM. While qualitative scholarship has concentrated on the lived experiences and needs of Indigenous MSM in specific urban communities (Simoni et al., 2006; Walters et al., 2001), this study represents the first attempt to collect quantitative data from a nationwide convenience sample of Indigenous MSM. While the results of this study are preliminary, they provide insights into yet unexplored factors that alter the risk for IPV and highlight a need for larger studies.

Methods: Participants: A one-time, cross-sectional, online survey was delivered to Indigenous MSM (n=186) residing in United States between December 10, 2018 and January 3, 2019.

Participants were recruited using banner advertisements posted on key social media websites (Facebook, Instagram). The authors constructed advertising algorithms, so ads were shown only to those who 'like' or follow the relevant accounts. Permission was also sought to post links to the survey to relevant Facebook groups (e.g. the Navajo Nation pride festival) and via the accounts of queer, Indigenous activists with large social media followings. Participants interested in the survey clicked on the banner ad or link and were directed to a five question eligibility screener. Eligible participants identified as a cisgender man, 18 years or older, and Indigenous (but could also identify with other racial/ethnic identities). Eligible participants also indicated they had oral or anal sex with a man in the past 12 months. Participants were reimbursed for their time via a \$20 electronic Amazon gift card. The study was exempt from federal regulations after review by the [Blinded for Review] Institutional Review Board.

Measures: The survey consisted of instruments previously used with Indigenous populations, MSM, or both. Demographic variables (e.g. age, Indigenous identity, tribal status, state of residence, education, and relationship status) were assessed first. Structural stressors included whether respondents lived above or below 100% of the 2018 federal poverty level (FPL), based on monthly income and the number of people who rely on this income. Questions previously used in studies of transgender youth (Stephenson et al., 2017) were used to assess history of housing and food insecurity, and historical trauma was assessed by asking whether the respondent or his family had a history of boarding school attendance. The 10-item interpersonal experiences subscale of the Measure of Indigenous Racism Experiences (MIRE)(Paradies & Cunningham, 2008) was included, as were measures of internalized (Szymanski, Kashubeck-West, & Meyer, 2008), anticipated (Liu, Feng, Rhodes, & Liu, 2009), and enacted (Szymanski et al., 2008) minority stress. Lifetime victimization of IPV was assessed using the Intimate Partner

Violence in Gay and Bisexual Men (IPV-GBM) scale (Stephenson & Finneran, 2013). The IPV-GBM scale is the only measure developed specifically for violence in male-male relationships. The subscales measuring physical (six items), sexual (two items), and emotional (nine items) IPV were included. Guided by the Indigenist Stress Coping Model (Walters & Simoni, 2002), two questions were written to assess the presence of cultural buffers that have been shown to mitigate the effects of structural stress in Indigenous women (Walters & Simoni, 2002): a strong Indigenous identity and whether the respondent had participated in any Native health practices in the past 12 months.

Analysis: Three binary outcome variables indicated whether or not the respondent reported lifetime experience of physical, sexual, and/or emotional IPV. Key covariates included the structural stressors and cultural buffers listed above. Identical multiple logistic regression models were fit for each IPV outcome variable and controlling for demographic, structural stressor, and cultural buffer covariates using a model set approach. This resulted in nine logistic regression models fit using Stata version 15.

Results: The survey yielded data from 186 respondents. Respondents with incomplete data were removed from analysis for a final sample size of n=155 residing in 37 states. There were no significant differences on the outcome or key covariates between the study and analysis samples. Half (50.3%) of respondents reported experiencing physical violence, while 41% reported sexual violence and 83% reported at least one type of emotional IPV during their lifetimes. Almost 60% (58.3%) of respondents lived on tribal land, and structural stressors such as food insecurity (60%) and experience with boarding schools (50%) were particularly common. Table 9 contains complete descriptive statistics for the analysis sample.

Experiencing more instances of anti-Indigenous racism was significantly associated with an increased odds of reporting all three types of violence (physical aOR: 1.37, (95% CI: 1.18, 1.58), $p < 0.001$; sexual aOR: 1.29, (95% CI: 1.13, 1.48), $p < 0.001$; emotional aOR: 1.21, (95% CI: 1.04, 1.40), $p = 0.011$). Anticipated stigma was significantly associated with a greater odds of reporting physical IPV (aOR: 1.18, (95% CI: 1.01, 1.37), $p = 0.032$). Other significant results showing greater odds of reporting sexual IPV for those with food insecurity (aOR: 6.96, (95% CI: 1.60, 30.36), $p = 0.010$) and who participated in cultural health practices (aOR: 10.11, (95% CI: 1.72, 59.33), $p = 0.010$) should be treated with caution. Though there was a high prevalence of sexual IPV, the small sample led to small cell sizes and wide confidence intervals for these results.

Table 9: Descriptive Statistics and Adjusted Odds Ratios for Experiencing IPV among Indigenous MSM

Covariate	% (n)	μ (SD)	aOR: Physical IPV	aOR: Sexual IPV	aOR: Emotional IPV
IPV					
Lifetime physical IPV	50.3 (78)				
Lifetime sexual IPV	40.7 (63)				
Lifetime emotional IPV	83.2 (129)				
Demographics					
Age (<35)			1.74 0.51,5.93 0.375	3.37 0.95,11.96 0.061	1.76 0.46,6.75 0.409
18-34	71.0 (110)				
35+	29.0 (45)				
Race/Ethnicity			2.22 0.41,11.95 0.353	1.05 0.19,5.85 0.958	0.60 0.07,5.49 0.650
Indigenous only	41.3 (64)				
Multiracial	58.7 (91)				
Registered Tribal Status	61.9 (96)		5.07 1.00,25.63 0.050	0.84 0.18,3.94 0.821	0.93 0.16,5.36 0.936
Currently live on tribal land	58.7 (91)		0.44 0.09,2.13 0.306	1.26 0.25,6.40 0.782	0.52 0.07,3.80 0.518
Graduated college	34.8 (54)		0.28 0.07,1.21 0.088	0.46 0.11,1.88 0.279	0.97 0.25,3.74 0.963
In an exclusive relationship	56.8 (88)		0.42	0.89	0.55

			0.10,1.65 0.213	0.19,4.09 0.884	0.12,2.55 0.446
Structural Stressors					
Below 100% FPL (adj. family size)	19.4 (30)		0.90 0.18,4.45 0.899	2.74 0.51,14.88 0.242	1.96 0.26,14.71 0.513
Current or former housing insecurity	44 (28.4)		2.00 0.53,7.59 0.309	1.44 0.37,5.58 0.594	0.71 0.18,2.83 0.632
Current or former food insecurity	60.0 (93)		2.25 0.65,7.79 0.199	6.96 1.60,30.36 0.010	0.99 0.20,4.88 0.994
Historical trauma (boarding schools)	50.3 (78)		1.75 0.38,8.11 0.473	0.72 0.14,3.63 0.694	10.78 1.27,91.66 0.029
Indigenous Racism (MIRE (0-32))		13.1 (7.6)	1.37 1.18,1.58 <0.001	1.29 1.13,1.48 <0.001	1.21 1.04,1.40 0.011
Internalized homonegativity (10-28)		17.3 (3.1)	0.92 0.77,1.11 0.389	0.82 0.67,1.00 0.053	0.84 0.65,1.08 0.174
Anticipated stigma (13-34)		20.8 (3.7)	1.18 1.01,1.37 0.032	0.85 0.71,1.03 0.094	1.03 0.87,1.22 0.732
External stigma (1-50)		19.9 (8.0)	0.93 0.84,1.02 0.126	0.97 0.87,1.08 0.577	1.00 0.89,1.13 0.955
Cultural Buffers					
Strong Indigenous identity	25.2 (39)		0.88 0.19,4.05 0.865	0.59 0.16,2.25 0.442	1.76 0.23,13.28 0.586
Native health practices (past 12 mo.)	34.2 (53)		2.74 0.72,10.40 0.139	10.11 1.72,59.33 0.010	0.20 0.03,1.54 0.122

bold= $p < 0.05$

Discussion: To our knowledge, this is the first nationwide study of IPV and structural stress in Indigenous MSM. Respondents reported high levels of IPV, suggesting that compounding structural stressors may be resulting in elevated levels of violence. The key finding is that more experiences of anti-Indigenous racism were associated with a greater odds of reporting all three types of IPV. This complements the findings of studies surveying Black and Hispanic MSM in the United States (Bauermeister et al., 2015), and suggests that structural racism is a key antecedent of violence across racial minority MSM. Experiencing racism results in a range of biological processes that increase the body's allostatic load, which can spill over into violence

(Larson, Gillies, Howard, & Coffin, 2007). Interventions have previously concentrated on increasing social support to buffer structural racism (Larson et al., 2007), but the relatively low density of Indigenous MSM in most parts of the country mean that efforts in this community may need to take a different approach.

This study should be viewed as exploratory and the results require validation. Additional qualitative and quantitative work is needed to understand the nature of IPV in Indigenous MSM, as well as to elucidate ways that anti-Indigenous racism might be mitigated. In addition to the small sample size, the study's cross-sectional nature precludes causal inference and cannot disentangle the complex relationships between intersecting forms of structural stress. Additionally, some covariates were collapsed into binary variables to increase statistical power, increasing the chance of a Type I error (Altman & Royston, 2006). Despite these limitations, this study provides preliminary evidence of high rates of IPV in Indigenous MSM from across the country and suggests that anti-Indigenous racism should be a focal point of future studies.

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Chapter 7: Changes in Gender Inequality and Intimate Partner Violence from 1958-2003: A Birth Cohort Analysis

Abstract: Intimate partner violence (IPV) affects approximately 1/3 of women worldwide and is associated with negative mental and physical health outcomes. Gender inequality is a fundamental cause of IPV, and eliminating it is key to the United Nations' Sustainable Development Goals (SDG). While gender inequality is decreasing globally, it is unknown whether a country's rate of gender inequality decline is associated with the reporting of IPV or whether the speed at which environments are changing differentially shapes risk. Using a birth cohort analysis of 25 Demographic and Health Surveys (DHS), multilevel models examine whether the socio-political environments in which a woman forms her attitudes around IPV influences its reporting, and whether this cohort effect varies by rate of decline in gender inequality. Results suggest a birth cohort effect is present for physical and sexual IPV and IPV justification across the 25 countries, with women reporting less IPV with each successive cohort. This effect wanes as the rate of gender inequality slows, with women in low change countries having the same odds of reporting IPV across cohorts. To achieve the SDG, additional structural interventions are warranted in countries not only with high gender inequality, but also where these norms prove more stagnant.

Introduction: Approximately one in three women worldwide will experience physical or sexual violence from an intimate partner during her lifetime (World Health Organization, 2013). Intimate partner violence (IPV) occurs in all cultures and societies and is associated with

negative physical health outcomes such as physiological trauma, gastrointestinal disorders, and sexually-transmitted infections, negative mental health consequences such as anxiety, depression, and post-traumatic stress disorder (J. Campbell, 2002; Warshaw et al., 2009; World Health Organization, 2013), adverse maternal and child health outcomes including premature birth (J. Campbell et al., 2002; Coker et al., 2000; Plichta, 2004; World Health Organization, 2013), low birthweight (J. Campbell, 2002; J. Campbell et al., 2002; World Health Organization, 2013), and underutilization of prenatal care (Metheny & Stephenson, 2017b; World Health Organization, 2013), and adverse stress-response behaviors such as increased sexual risk-taking and substance misuse (Decker et al., 2014; Duncan et al., 2016; Silverman et al., 2001; Stults et al., 2015; World Health Organization, 2013) leading to a major public health burden, especially in low- and middle-income countries (LMIC).

Fundamental cause theory posits that structural-level factors drive IPV, as they determine the extent to which an individual lives in an environment containing risk factors for violence (Jewkes, 2002; Phelan et al., 2010). Decades of empirical evidence supports the notion that gender inequality is the structural factor that is most fundamental to the perpetration of IPV in male-female couples (Jayachandran, 2014; Jewkes, 2002; Jewkes et al., 2002; McCloskey et al., 2005; Pallitto & O'Campo, 2005; Phelan et al., 2010; Watts & Seeley, 2014). Gender inequality creates imbalanced power structures wherein men have authority over women and use violence as a means of maintaining this gender hierarchy (Kabeer, Huq, & Mahmud, 2014; World Health Organization & London School of Hygiene and Tropical Medicine, 2010). These structures also limit women's ability to access resources and make decisions that may limit their risk of violence (e.g. education, age at marriage, autonomy over fertility) (World Health Organization & London School of Hygiene and Tropical Medicine, 2010).

Eliminating gender inequality is one of the United Nations' 17 Sustainable Development Goals (SDG) that provide a framework for global development. However, achieving gender equality (SDG 5) is critical to nearly every other SDG as well. Good Health and Wellbeing (SDG 3) cannot be attained if chronically high maternal mortality ratios in many LMIC are not reduced (Najafizada et al., 2017; Urdal & Che, 2013; World Health Organization, UNICEF, UNFPA, & The World Bank, 2012). Likewise, Decent Work and Economic Growth (SDG 8) will not be universal until female labor force participation rates are on par with men's and the quality of jobs available are equal as well (Braunstein & Seguino, 2018; Chaudhary et al., 2009; Hirani & Karmaliani, 2013). Certainly SDG 10 (reduced inequalities) will be incomplete if SDG 5 is not achieved.

While there is broad consensus that gender inequality is decreasing in much of the world (Dorius & Firebaugh, 2010; United National Development Programme, 2015), this change is happening at non-uniform rates within and between countries (United National Development Programme, 2015). While evidence suggests that societies transitioning from strict gender norms to more egalitarian norms often have the highest rates of violence due to more women challenging still-prevalent patriarchal norms that support violence in these countries (World Health Organization, 2013; World Health Organization/ London School of Hygiene and Tropical Medicine, 2010), it is unknown whether the *rate of decline* over time at the country level influences the risk of IPV. As the world moves towards increasing gender equality and reducing IPV in an effort to achieve SDG 5, interventions may need to alter their approach in areas with a quicker decline compared to those with more stagnant gender inequality.

Birth cohort analyses provide a more precise way to measure the attendant changes in social, political, and economic circumstances that motivate different rates of gender inequality

decline. This type of analysis allows for the creation of group-level variation in cross-sectional data using the birth year of each respondent (Keyes, Utz, Robinson, & Li, 2010; Keyes, Li, & Hasin, 2011). This is important for three reasons, as outlined by Keyes and colleagues (Keyes et al., 2011). First, birth cohorts capture the sociopolitical moments in which groups of people foment their first ideas of gender norms and attitudes regarding IPV. Second, it provides a way to identify group-level effects that may have substantial public health relevance for prevention and mitigation efforts for different cross-sections of society. Finally, identifying factors associated with IPV in recent birth cohorts may highlight novel ways to decrease IPV in future prevention efforts. By understanding whether there might be a cohort effect present in IPV reporting and justification, it may be possible to elucidate how the risk for experiencing IPV changes in tandem with the rate of gender inequality decline.

In the first study of its kind, this analysis uses data from the Demographic and Health Studies (DHS) to examine how the reporting of three types of IPV (physical, sexual, and emotional), as well as women's justification of physical IPV, vary by birth cohort and rate of decline in national gender inequality. This approach addresses two questions. First, is there evidence for a cohort effect in the reporting of physical, sexual, and emotional IPV or in women's justification of violence; and second, does this cohort effect vary by the rate at which a country is progressing towards SDG 5? We hypothesize that women from older birth cohorts will report significantly less IPV than younger cohorts, and that women in countries with steeper decreases in gender inequality will report significantly more IPV by birth cohort than women in countries with little change due to more fixed social norms regarding gender that suppress the reporting of violence.

A better understanding of the geographic and temporal dimensions of gender inequality is necessary to achieve gender equality. This study may begin to highlight ways to more effectively intervene on IPV in environments with similar progress towards SDG 5. A more adaptive approach to IPV research and advocacy could eventually lead to quicker declines in IPV and gender inequality in more stagnant countries and help maintain strong progress towards SDG 5 in countries that are more quickly approaching this goal.

Methods: *Data:* Data for this study were drawn from responses to the women's questionnaire of the Demographic and Health Surveys (DHS). The DHS is the largest repository for nationally representative population and health data across LMIC, and has provided data on IPV since 1990 (ICF International, 2017b). Using a two-stage sampling design, the DHS use the most recent census data from each country to create geographic demarcations called Primary Sampling Units (PSUs). These consist of 100-300 households, of which women ages 15-49 from 20-30 of these households are interviewed (ICF International, 2017a). To ensure the most recent data was included, only countries with surveys collected after 2010 were considered. These countries (n=40) were then cross-referenced with those included in the first iteration of the United Nations Development Programme's Gender Inequality Index (GII). Collected since 1995, the GII uses measures of reproductive health (maternal mortality ratio and adolescent birth rates), female empowerment (ratio of women to men in national legislative body and ratio of male to female secondary education attainment), and female economic status (male to female labour force participation rate) to measure gender inequality on a 0-1 scale, with a lower score indicating a lower level of inequality (United National Development Programme, 2015). The GII represents the best way to measure gender gaps across countries- both in the opportunities afforded to women and the autonomy they have to take advantage of them (United National Development

Programme, 2015). It highlights gaps in human development between men and women at the country level and calls attention to the structural disadvantages facing women worldwide.

Countries that both 1) published data for a DHS conducted since 2010 and 2) had GII measurements at baseline (1995) and at least once since 2010 were included in the analysis, for a total of 25 countries. The final sample included ever-married females ages 15-49 from 25 countries ($n=226,572$). Country-level samples ranged from 1,449 (Namibia) to 62,716 women aged 15-49 (India) (see Table 1).

Outcome variables: Three binary outcome variables measured lifetime experience of physical, sexual, and/or emotional IPV. Each variable was coded 1 if the respondent indicated that a husband or male partner had ever committed physical (pushed, shook, hit, slapped, kicked, dragged, strangled, burnt, arm twisted or hair pulled), sexual (partner physically forced sex when not wanted; ever forced other sexual acts when not wanted), or emotional (threatened with harm, humiliated, or insulted) violence against her since the age of 15. A fourth, continuous outcome variable used five standard DHS questions regarding hypothetical scenarios in which physical violence against a woman might be used (e.g. neglecting the children, going out without telling the husband, burning food). The binary responses to each of these questions were collated into an additive scale ($\alpha=0.80$) ranging from 0 (no scenarios justified physical violence) to five (all five scenarios warranted physical violence).

Key Covariate: The key covariate was a measurement of the birth cohort to which each respondent belonged. The DHS variable v010 (year of birth) was categorized into five-year age groups beginning with the earliest year of birth (1958) and ending with the most recent (2003). Since country datasets were collected within the past five years, not all countries contained respondents belonging to all birth cohorts. For this reason, the first two (1958-1962 and 1963-

1967) and last two (1993-1997 and 1998-2003) were combined so that all countries were represented in all birth cohorts. This resulted in a seven-category variable with categories corresponding to birth years 1958-1967, 1968-72, 1973-1977, 1978-1982, 1983-1987, 1988-1992, and 1993-2003.

Exposure variables: Other variables of interest were drawn from previous theoretical (R. E. Dobash & Dobash, 1979; U. Kelly et al., 2010; Schulz & Mullings, 2006) and empirical (A. Kalokhe et al., 2016; World Health Organization & London School of Hygiene and Tropical Medicine, 2010; World Health Organization, 2013; World Health Organization/ London School of Hygiene and Tropical Medicine, 2010) literature concerning IPV in LMIC. These included demographic variables for the respondent (education level, age at marriage, parity, whether the respondent desires another child, whether the respondent is employed, whether the respondent is subject to controlling behaviour from her partner, level of decision-making autonomy on a 0-3 scale), her partner (e.g. partner's education level, partner's age, whether her partner is employed), and at the household level (e.g. rurality, socio-economic status, dyadic differences in age and education).

Change in GII: To assess whether changes in structural environment influence the relationships between birth cohort and IPV, countries were pooled into three datasets representing the rate of change in GII since 1995. The rate of change was calculated using each country's GII at baseline (1995) compared to its most recent GII score. The `xtile` command in Stata was used to stratify countries' rates of GII change into tertiles. While all countries experienced some decrease in gender inequality since 1995, the rate of change differed widely. Countries with less than a 15% decrease in GII were categorized as "low change" countries (n=8 countries, n=39,612 respondents), those with a 16-24% decrease "medium change" (n=8 countries, n=45,030

respondents), and those with greater than 25% decrease were categorized as “high change” countries (n=9 countries, n=141,930 respondents) (see Table 1).

Analysis: The nesting of respondents within communities (PSU) and communities within countries means that the data has a three-level structure, necessitating the use of multilevel modelling in these analyses (Assari, 2013; B. A. Bell et al., 2008; Stephenson et al., 2013a). Compared to standard logistic regression analyses, multilevel modelling corrects for the downward bias in standard errors created by the non-independent nature of nested data and introduces an error term that captures the effects of unobserved covariates (Assari, 2013; Steele, Diamond, & Amin, 1996). However, the relative sparseness of level three clusters at the country level (defined as 50 or fewer) would widen confidence intervals and increases the chance of a Type I error should three-level models be used (B. A. Bell et al., 2008). Since the maximum number of countries in any one dataset was 25, country was instead added as a fixed effect at level one to account for the nesting of participants by country, and a two-level multilevel modelling approach was used to account for nesting of respondents within PSUs.

A total of 16 mixed-effect, multilevel models were fit. These were divided into four model sets of four models each. Each set included one model containing all 25 countries and three additional models containing just those countries with high, medium, or low rate of GII decrease. Three model sets (12 models) used multilevel logistic regression modelling, fitting the binary physical, sexual, and emotional IPV outcome variables. The remaining model set used multilevel linear regression, fitting the six-point justification of violence outcome as a continuous variable. All 16 models included birth cohort as the key covariate and the exposure variables listed above. All models also contained a continuous measure of age to improve interpretability of the cohort effect (Rutherford, Lambert, & Thompson, 2010) and the DHS-

generated sampling weight for the domestic violence module to account for the over- and under-representation of strata in the data collection process (Rutstein & Rojas, 2006). A measure of GII in 1995 was included in each model to control for between-country variation at baseline, which is important when considering the rate of change over time. The model from each set that contained all 25 countries also included a categorical variable of rate of GII change (high, medium, or low).

Results: The reported lifetime prevalence of physical IPV was 29% and ranged from 13% in the Philippines to 42% in Uganda. Prevalence rates in the stratified samples were similar: 29% in high change countries, 32% in medium change countries, and 25% in low change countries. For sexual IPV, the reported prevalence of which was 9%, ranging from 4% in Tajikistan to 23% in Uganda. It averaged 7% in high change countries, 12% in medium change countries, and 10% in low change countries. Twenty-two percent of women reported emotional IPV, ranging from 10% in Tajikistan to 42% in Uganda. Emotional IPV averaged 18% in high change countries, 29% in medium change countries, and 26% in low change countries. Women justified violence in an average of 0.9 of five scenarios (0.9 in Colombia to 2.6 in Mali). Averages across strata were low (0.8 scenarios in high change countries, 1.2 in medium change countries, 0.9 in low change countries) (see Table 10).

Table 10: Countries, Sample Size, and Change in Gender Inequality Index

Country	Sample Size	GII in 1995	Latest GII	Percent Change	GII Change Category
Cambodia	3,499	0.660	0.473	-28%	High Change
Cameroon	4,006	0.699	0.569	-19%	Medium Change
Colombia	24,890	0.542	0.383	-29%	High Change
Côte d'Ivoire	5,018	0.706	0.666	-6%	Low Change
Dominican Republic	5,803	0.570	0.451	-21%	Medium Change
Egypt	6,693	0.665	0.449	-32%	High Change
Gabon	4,147	0.622	0.534	-14%	Low Change
Gambia	3,542	0.757	0.623	-18%	Medium Change

Guatemala	6,512	0.585	0.493	-16%	Low Change
India	62,716	0.687	0.524	-24%	High Change
Jordan	7,027	0.672	0.460	-32%	High Change
Kenya	4,519	0.706	0.549	-22%	Medium Change
Kyrgyzstan	4,832	0.512	0.392	-23%	Medium Change
Malawi	5,406	0.718	0.619	-14%	Low Change
Mali	3,120	0.728	0.678	-7%	Low Change
Namibia	1,449	0.555	0.472	-15%	Low Change
Nepal	3,826	0.709	0.480	-32%	High Change
Peru	26,966	0.546	0.368	-33%	High Change
Philippines	8,160	0.482	0.427	-11%	Low Change
Rwanda	1,908	0.584	0.381	-35%	High Change
Tajikistan	4,405	0.568	0.317	-44%	High Change
Togo	5,376	0.736	0.567	-23%	Medium Change
Uganda	7,536	0.659	0.523	-21%	Medium Change
Zambia	9,416	0.642	0.517	-19%	Medium Change
Zimbabwe	5,800	0.598	0.534	-11%	Low Change
Total/Mean	226,572	0.636	0.498	-22%	--

Birth Cohort Effects: Compared to being born in the earliest birth cohort (1958-1967), belonging to the most recent birth cohort (1993-2003) was associated with a significantly greater odds of reporting physical IPV in the 25-country model (aOR: 1.27, 95% CI: 1.02-1.57, p=0.03).

Similarly, those belonging to birth cohorts beginning in 1973 or later had significantly greater odds of reporting emotional (1973-77: aOR: 1.12 (95% CI: 1.01-1.25) p<0.027; 1978-82: aOR: 1.22, (95% CI: 1.07,1.39), p=0.003; 1983-87: aOR: 1.34 (95% CI: 1.13-1.57) ; 1988-1992: aOR: 1.41 (95% CI: 1.16-1.71) p<0.001); 1993-2003: aOR: 1.58 (95% CI: 1.26-1.98) p<0.001) and sexual IPV (1973-77: aOR: 1.23 (95% CI: 1.05-1.43) p=0.009; 1978-82: aOR: 1.42 (95% CI: 1.17-1.73) p<0.001; 1983-87: aOR:1.67 (95% CI: 1.32-2.12) p<0.001); 1988-1992: aOR: 1.95 (95% CI: 1.47-2.58) p<0.001); 1993-2003: aOR: 2.53 (95% CI: 1.83-3.49 p<0.001). Women born before 1968 justified IPV in significantly more scenarios than any other cohort (1968-1972: β =0.77 (95% CI: 0.73-0.80) p<0.001; 1973-77: β : 0.55 (95% CI: 0.51-0.58) p<0.001; 1978-82: β : 0.41 (95% CI: 0.38-0.45) p<0.001; 1983-87: β : 0.32 (0.29-0.35) p<0.001; 1988-1992: β :0.25 (95% CI: 0.22-0.28) p<0.001; 1993-2003: β : 0.19 (95% CI: 0.17-0.22) p<0.001).

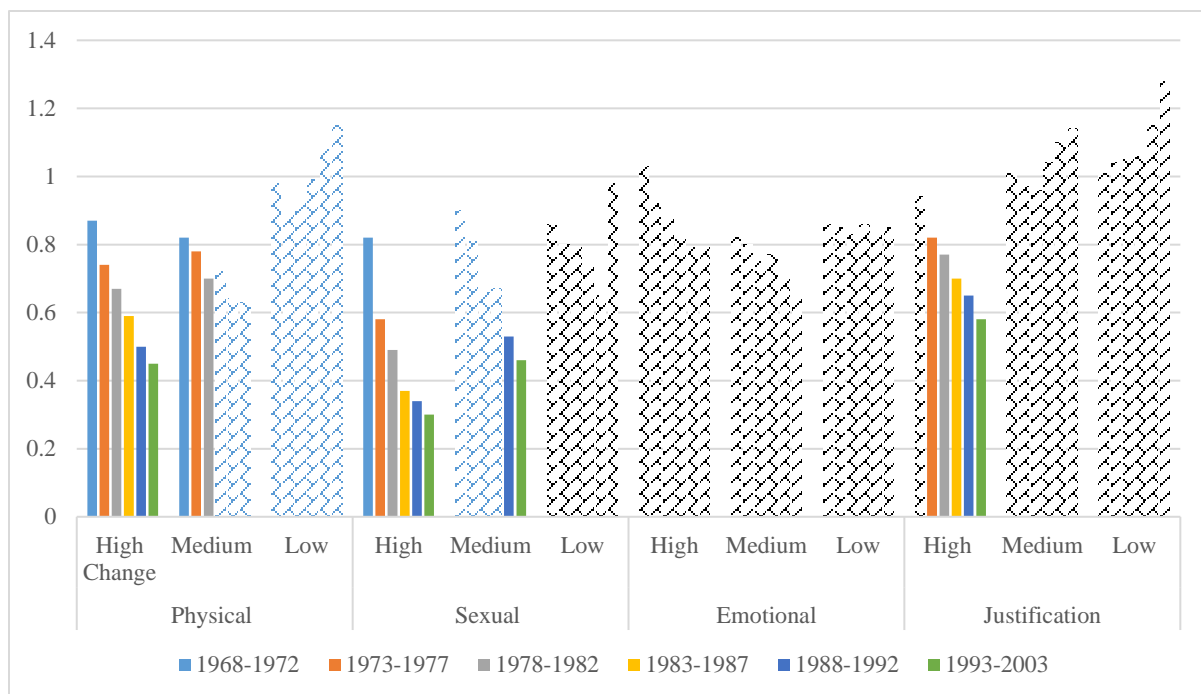
There were significant variations in birth cohort effects across high, medium, and low change countries when compared to those born 1958-1967 (see Figure 14). In countries experiencing the steepest decline in GII, each successive birth cohort was associated with significantly lower odds of reporting physical IPV than the cohort before it (1968-72: aOR: 0.87 (95% CI: 0.77-0.97) $p=0.012$; 1973-77: aOR: 0.74 (95% CI: 0.64-0.87) $p<0.001$; 1978-82: aOR: 0.67 (95% CI: 0.54-0.83) $p<0.001$; 1983-87: aOR: 0.59 (95% CI: 0.45-0.77) $p<0.001$; 1988-1992: aOR: 0.50 (95% CI: 0.37-0.69) $p<0.001$; 1993-2003: aOR: 0.45 (95% CI: 0.31-0.66) $p<0.001$). This pattern held for sexual IPV (1973-77: aOR: 0.58 (95% CI: 0.43-0.78) $p<0.001$; 1978-82: aOR: 0.49 (95% CI: 0.34-0.72) $p<0.001$; 1983-87: aOR: 0.37 (95% CI: 0.23-0.59) $p<0.001$; 1988-1992: aOR: 0.34 (95% CI: 0.19-0.60) $p<0.001$; 1993-2003: aOR: 0.30 (95% CI: 0.15-0.59) $p<0.001$) and IPV justification, with each birth cohort justifying IPV in significantly fewer scenarios than the cohort before it (1973-77: β : 0.82 (95% CI: 0.75-0.90) $p<0.001$; 1978-82: β : 0.77 (95% CI: 0.68-0.87) $p<0.001$; 1983-87: β : 0.70 (95% CI: 0.60-0.81) $p<0.001$; 1988-1992: β : 0.65 (95% CI: 0.54-0.78) $p<0.001$; 1993-2003: β : 0.58 (95% CI: 0.47-0.72) $p<0.001$). In medium change countries, however, only women born between 1968 and 1982 had significantly lower odds of reporting physical IPV compared to those born before 1968 (1968-72: aOR: 0.82 (95% CI: 0.70-0.96) $p=0.012$; 1973-77: aOR: 0.78 (95% CI: 0.63-0.96) $p<0.019$; 1978-82: aOR: 0.70 (95% CI: 0.53-0.93) $p=0.013$). Regarding emotional violence, only women born in 1968-1972 had significantly lower odds of reporting than those born 1958-1967 (aOR: 0.82 (95% CI: 0.69-0.96) $p=0.013$). This pattern was reversed for sexual IPV, wherein the youngest women had significantly lower odds of reporting sexual violence compared to the oldest women in the sample (1988-1992: aOR: 0.53 (95% CI: 0.29-0.98) $p=0.044$; 1993-2003: aOR: 0.46 (95% CI:

0.22-0.95) $p=0.036$). Birth cohort was not associated with any of the outcome variables in low change countries.

Solid bars are significant at $p<0.05$

The relationships between IPV and some individual-level covariates varied considerably

Figure 14: Adjusted Odds or β -Coefficient for Reporting Physical Violence, Sexual Violence, Emotional Violence, and Justification of Violence in 25 countries by Birth Cohort



across high, medium, and low change countries. For example, having a secondary education was associated with significantly lower odds of reporting emotional IPV in high change countries (aOR: 0.90 (95% CI: 0.84-0.97) $p=0.005$), but significantly greater odds in low change countries (aOR= 1.20 (95% CI: 1.07-0.35) $p=0.002$). Similarly, more decision-making autonomy was associated with significantly lower odds of reporting physical and emotional IPV in high change countries (physical: aOR: 0.76 (95% CI: 0.72-0.81) $p<0.001$; emotional: aOR: 0.61 (95% CI: 0.57-0.65) $p<0.001$), but greater odds of both types of IPV in low change countries (physical: aOR: 1.20 (95% CI: 1.08-1.34) $p<0.001$; emotional: aOR: 1.15 (95% CI: 1.04-1.29) $p=0.009$).

Recall that age of respondent was included in the model to help determine whether changes were due to cohort, age, or both. While age produced a small, but statistically significant, result in the 25-country model and high change countries, it was not significant in any outcomes variable in medium or low change countries. Together, these results suggest that birth cohort plays a much larger role in the reporting and justification of violence than age of the respondent.

Dyadic covariates were more mixed. Longer marital duration was associated with greater odds of physical IPV in all three contexts, with women married more than 15 years having the greatest odds of reporting this type of IPV in high (aOR: 1.23 (95% CI: 1.09-1.40) $p < 0.001$), medium (aOR: 1.46 (95% CI: 1.25-1.72) $p < 0.001$), and low change countries (aOR: 1.44 (95% CI: 1.21-1.71) $p < 0.001$). Similarly, controlling behavior was associated with greater odds of reporting all three types of IPV across all three strata. Interestingly, it was also associated with justifying violence in significantly more scenarios in all three contexts (high change: β : 1.35 (95% CI: 1.32-1.38) $p < 0.001$; medium change: β : 1.49 (95% CI: 1.44-1.54) $p < 0.001$; low change: β : 1.11 (95% CI: 1.08-1.14) $p < 0.001$). However, women whose partners obtained a secondary education had significantly lower odds of reporting physical IPV in high change countries (aOR: 0.77 (95% CI: 0.72-0.82) $p < 0.001$), but significantly greater odds in low change countries (aOR: 1.14 (95% CI: 1.02-1.28) $p = 0.024$). Dyadic differences in education was associated with justifying violence in significantly fewer scenarios in the 25-country model (β : 0.97 (95% CI: 0.95-0.98), $p < 0.001$) and in medium change countries (β : 0.94 (95% CI: 0.91-0.97), $p < 0.001$).

At the household level, rural women had significantly lower odds of reporting all types of IPV than urban women across structural environments. They also justified IPV in significantly more scenarios than urban women across high (β : 1.23 (95% CI: 1.20-1.26) $p < 0.001$), medium

(β : 1.12 (95%CI: 1.07-1.17) $p < 0.001$), and low change countries (β : 1.14 (95% CI: 1.10-1.18) $p < 0.001$). The relationship between household wealth quintile and IPV varied considerably across the strata and types of IPV. In high change (range: poorer: aOR: 0.88 (95% CI: 0.83-0.94) $p < 0.001$; richest: aOR: 0.46 (95% CI: 0.42-0.50) $p < 0.001$) and medium change countries (range: poorer: aOR: 0.81 (95% CI: 0.76-0.87) $p < 0.001$; richest: aOR: 0.58 (95% CI: 0.52-0.65) $p < 0.001$), belonging to quintiles two through five was associated with significantly lower odds of reporting physical IPV compared to those in the poorest quintile. However, wealth was not associated with physical violence at all in low change countries. Regarding emotional IPV, there was a threshold effect across strata, wherein only women belonging to the two richest quintiles had significantly lower odds of reporting IPV (high change richer: aOR: 0.73 (95% CI: 0.73-0.86) $p < 0.001$ high change richest: aOR: 0.63 (95% CI: 0.57-0.70) $p < 0.001$; medium change richer: aOR: 0.83 (95% CI: 0.76-0.92) $p < 0.001$; medium change richest: aOR: 0.72 (95% CI: 0.64-0.81) $p < 0.001$; low change richer: aOR: 0.86 (95% CI: 0.78-0.95) $p = 0.004$; low change richest: aOR: 0.81 (95% CI: 0.72-0.91) $p < 0.001$) (see Tables 11-14).

Table 11: Adjusted Odds Ratios of Reporting Physical IPV in 25 Countries and by Rate of Change in GII

	Total	High Change	Medium Change	Low Change
Physical IPV	aOR 95% CI p-value	aOR 95% CI p-value	aOR 95% CI p-value	aOR 95% CI p-value
Individual				
Birth Cohort (1958-1967)				
1968-1972	0.98 0.91,1.06 0.637	0.87 0.77,0.97 0.012*	0.82 0.70,0.96 0.012*	0.98 0.82,1.17 0.831
1973-1977	0.99 0.90,1.10 0.904	0.74 0.64,0.87 <0.001*	0.78 0.63,0.96 0.019*	0.89 0.70,1.14 0.372
1978-1982	1.05 0.93,1.19 0.418	0.67 0.54,0.83 <0.001*	0.70 0.53,0.93 0.013*	0.93 0.67,1.30 0.678
1983-1987	1.15 0.98,1.34 0.083	0.59 0.45,0.77 <0.001*	0.72 0.51,1.03 0.072	0.99 0.66,1.50 0.977
1988-1992	1.18 0.98,1.42 0.075	0.50 0.37,0.69 <0.001*	0.64 0.42,1.00 0.044	1.08 0.65,1.78 0.771
1993-2003	1.27 1.02,1.57 0.030*	0.45 0.31,0.66 <0.001*	0.63 0.38,1.04 0.069	1.15 0.64,2.06 0.649
Respondent's current age	1.01 1.00,1.02 0.035*	0.98 0.96,0.99 0.002*	0.99 0.97,1.01 0.221	1.00 0.98,1.02 0.788
Education (<primary)				
primary	1.01 0.97,1.05 0.770	1.01 0.95,1.08 0.680	1.06 0.98,1.16 0.139	1.08 0.98,1.20 0.116
secondary	0.85 0.81,0.89 <0.001*	0.80 0.75,0.85 <0.001*	1.02 0.92,1.13 0.674	1.02 0.91,1.15 0.732
higher	0.60 0.56,0.65 <0.001*	0.58 0.52,0.64 <0.001*	0.93 0.80,1.07 0.318	0.75 0.62,0.90 0.003*
Age at marriage (<17)				
17-18	0.98 0.94,1.01 0.174	0.99 0.94,1.04 0.625	0.99 0.93,1.06 0.853	0.99 0.91,1.07 0.763
19+	0.87 0.83,0.90 <0.001*	0.88 0.83,0.93 <0.001*	0.91 0.84,0.98 0.013*	0.90 0.82,0.98 0.018*
Parity (0-1)				
2-3	1.29 1.24,1.36 <0.001*	1.27 1.19,1.36 <0.001*	1.31 1.20,1.44 <0.001*	1.28 1.15,1.41 <0.001*
4-5	1.46 1.38,1.54 <0.001*	1.42 1.31,1.54 <0.001*	1.45 1.30,1.62 <0.001*	1.49 1.32,1.68 <0.001*
6+	1.56	1.50	1.59	1.61

	1.46,1.67 <0.001*	1.35,1.66 <0.001*	1.40,1.81 <0.001*	1.40,1.86 <0.001*
Respondent employed (no)	1.29 1.26,1.33 <0.001*	1.34 1.28,1.40 <0.001*	1.26 1.19,1.34 <0.001*	1.13 1.06,1.20 <0.001*
Decision making autonomy (none)				
1	1.12 1.06,1.17 <0.001*	1.13 1.05,1.22 0.002*	1.16 1.06,1.27 0.002*	1.08 0.97,1.21 0.164
2	1.08 1.03,1.13 0.002*	1.03 0.96,1.10 0.460	1.12 1.03,1.23 0.009*	1.20 1.08,1.34 0.001*
3	0.84 0.81,0.88 <0.001*	0.76 0.72,0.81 <0.001*	0.94 0.86,1.02 0.115	0.93 0.84,1.03 0.173
Desires another child (no)	0.98 0.94,1.01 0.158	1.03 0.97,1.09 0.373	0.90 0.85,0.96 0.001*	0.91 0.85,0.98 0.008*
Dyadic				
Partner's age (15-19)				
20-24	1.29 0.97,1.71 0.080	1.22 0.71,2.09 0.476	0.94 0.52,1.69 0.830	1.36 0.90,2.08 0.146
25-29	1.23 0.93,1.63 0.140	1.18 0.69,2.01 0.543	0.83 0.46,1.50 0.544	1.27 0.84,1.92 0.249
30-34	1.19 0.90,1.58 0.220	1.10 0.64,1.88 0.726	0.82 0.45,1.48 0.503	1.17 0.77,1.77 0.456
35-39	1.13 0.85,1.50 0.395	1.06 0.62,1.81 0.835	0.76 0.42,1.37 0.359	1.02 0.67,1.54 0.938
40-44	1.04 0.78,1.38 0.779	1.01 0.59,1.74 0.960	0.67 0.37,1.22 0.186	0.88 0.57,1.34 0.541
45-49	1.01 0.76,1.34 0.963	0.96 0.56,1.66 0.891	0.67 0.36,1.23 0.194	0.78 0.50,1.20 0.251
50-95	0.94 0.70,1.26 0.674	0.93 0.54,1.61 0.793	0.58 0.32,1.08 0.085	0.77 0.50,1.19 0.240
Partner's education (<primary)				
Primary	1.01 0.97,1.06 0.653	0.97 0.90,1.04 0.339	1.11 1.01,1.22 0.027*	1.10 0.99,1.22 0.086
Secondary	0.91 0.87,0.95 <0.001*	0.77 0.72,0.82 <0.001*	0.95 0.86,1.05 0.326	1.14 1.02,1.28 0.024*
Higher	0.73 0.68,0.78 <0.001*	0.59 0.54,0.65 <0.001*	0.83 0.73,0.95 0.007*	0.92 0.78,1.09 0.346
Partner employed (no)	0.82 0.77,0.87	1.00 0.90,1.11	0.78 0.65,0.95	0.88 0.76,1.02

	<0.001*	0.979	0.011*	0.097
Controlling behavior (no)	3.66 3.56,3.78 <0.001*	3.33 3.20,3.48 <0.001*	3.67 3.44,3.91 <0.001*	4.11 3.84,4.41 <0.001*
More than 5 years' age difference (no)	0.98 0.95,1.02 0.375	0.99 0.94,1.04 0.668	1.01 0.94,1.08 0.838	1.01 0.94,1.09 0.746
Difference in education of 1 or more levels (no)	1.03 1.00,1.06 0.024*	1.05 1.00,1.09 0.037*	1.01 0.96,1.07 0.615	1.04 0.97,1.10 0.270
Marital duration (0-4 years)				
5-9	1.20 1.13,1.26 <0.001*	1.23 1.13,1.34 <0.001*	1.30 1.18,1.44 <0.001*	1.24 1.11,1.38 <0.001*
10-14	1.24 1.16,1.32 <0.001*	1.29 1.16,1.42 <0.001*	1.41 1.24,1.60 <0.001*	1.37 1.19,1.57 <0.001*
15+	1.24 1.14,1.35 <0.001*	1.23 1.09,1.40 0.001*	1.46 1.25,1.72 <0.001*	1.44 1.21,1.71 <0.001*
Household				
Rural (Urban)	0.84 0.81,0.87 <0.001*	0.76 0.72,0.81 <0.001*	0.87 0.81,0.94 <0.001*	0.88 0.81,0.95 0.001*
Wealth quintile (poorest)				
poorer	0.89 0.85,0.92 <0.001*	0.88 0.83,0.94 <0.001*	0.81 0.76,0.87 <0.001*	0.98 0.90,1.07 0.685
middle	0.81 0.77,0.84 <0.001*	0.75 0.71,0.80 <0.001*	0.79 0.73,0.85 <0.001*	0.98 0.89,1.08 0.679
richer	0.74 0.71,0.78 <0.001*	0.65 0.60,0.69 <0.001*	0.71 0.64,0.77 <0.001*	0.97 0.87,1.08 0.564
richest	0.60 0.57,0.63 <0.001*	0.46 0.42,0.50 <0.001*	0.58 0.52,0.65 <0.001*	0.88 0.78,1.00 0.054
GII at baseline	1.07 0.82,1.41 0.616	10.80 2.92,39.91 <0.001*	8.16 2.91,22.89 <0.001*	0.23 0.06,0.93 0.040*
Rate of GII change (high)	1.00 1.00,1.00	--	--	--
Medium change	1.14 1.09,1.19 <0.001*	--	--	--
Low change	0.85 0.82,0.89 <0.001*	--	--	--
Weight for domestic violence	1.00 1.00,1.00 <0.001*	1.00 1.00,1.00	1.00 1.00,1.00 0.147	1.00 1.00,1.00 0.906

Table 12: Adjusted Odds Ratios of Reporting Sexual IPV in 25 Countries and by Rate of Change in GII

	Total	High Change	Medium Change	Low Change
Sexual IPV	aOR 95% CI p-value	aOR 95% CI p-value	aOR 95% CI p-value	aOR 95% CI p-value
Individual				
Birth Cohort (1958-1967)				
1968-1972	1.12 1.00,1.27 0.058	0.82 0.66,1.02 0.069	0.90 0.71,1.14 0.372	0.86 0.67,1.12 0.270
1973-1977	1.23 1.05,1.43 0.009*	0.58 0.43,0.78 <0.001*	0.81 0.59,1.11 0.189	0.80 0.56,1.14 0.212
1978-1982	1.42 1.17,1.73 <0.001*	0.49 0.34,0.72 <0.001*	0.66 0.44,1.01 0.053	0.79 0.49,1.27 0.330
1983-1987	1.67 1.32,2.12 <0.001*	0.37 0.23,0.59 <0.001*	0.67 0.40,1.12 0.122	0.74 0.41,1.34 0.317
1988-1992	1.95 1.47,2.58 <0.001*	0.34 0.19,0.60 <0.001*	0.53 0.29,0.98 0.044*	0.65 0.32,1.35 0.249
1993-2003	2.53 1.83,3.49 <0.001*	0.30 0.15,0.59 0.001*	0.46 0.22,0.95 0.036*	0.65 0.28,1.52 0.323
Respondent's current age	1.02 1.01,1.04 0.001*	0.95 0.92,0.97 <0.001*	0.97 0.95,1.00 0.058	0.98 0.95,1.01 0.239
Education (<primary)				
primary	1.32 1.24,1.40 <0.001*	1.12 1.01,1.24 0.035*	1.14 1.01,1.28 0.031*	1.14 0.99,1.32 0.075
secondary	1.14 1.06,1.22 <0.001*	0.96 0.86,1.07 0.458	1.07 0.92,1.23 0.396	1.09 0.92,1.30 0.313
higher	1.00 0.89,1.13 0.948	0.78 0.64,0.96 0.021*	0.83 0.65,1.05 0.125	0.92 0.69,1.22 0.552
Age at marriage (<17)				
17-18	1.06 1.01,1.12 0.025*	1.05 0.95,1.15 0.334	1.13 1.03,1.25 0.009*	0.93 0.83,1.04 0.223
19+	0.98 0.92,1.04 0.428	1.02 0.92,1.14 0.644	0.99 0.88,1.10 0.799	0.82 0.72,0.94 0.003*
Parity (0-1)				
2-3	1.13 1.05,1.22 0.001*	1.06 0.94,1.20 0.335	1.10 0.96,1.26 0.168	1.09 0.94,1.26 0.255
4-5	1.44 1.32,1.57 <0.001*	1.20 1.04,1.39 0.015*	1.24 1.05,1.45 0.010*	1.26 1.05,1.50 0.011*
6+	1.70	1.44	1.25	1.25

	1.54,1.88 <0.001*	1.21,1.73 <0.001*	1.04,1.51 0.016*	1.02,1.53 0.031*
Respondent employed (no)	1.42 1.36,1.49 <0.001*	1.40 1.30,1.52 <0.001*	1.34 1.23,1.46 <0.001*	1.18 1.08,1.29 <0.001*
Decision making autonomy (none)				
1	1.04 0.97,1.11 0.316	1.08 0.95,1.22 0.239	0.98 0.87,1.11 0.797	1.03 0.88,1.21 0.684
2	0.98 0.92,1.05 0.554	0.88 0.78,0.98 0.025*	0.91 0.81,1.03 0.136	1.13 0.97,1.31 0.117
3	0.70 0.66,0.74 <0.001*	0.56 0.51,0.62 <0.001*	0.71 0.64,0.79 <0.001*	0.82 0.71,0.95 0.007*
Desires another child (no)	0.97 0.92,1.02 0.255	0.95 0.86,1.06 0.359	0.88 0.81,0.96 0.004*	0.96 0.87,1.06 0.435
Dyadic				
Partner's age (15-19)				
20-24	1.07 0.73,1.56 0.734	1.44 0.60,3.45 0.410	0.50 0.25,1.00 0.048	1.26 0.70,2.26 0.445
25-29	1.00 0.69,1.45 0.997	1.19 0.50,2.82 0.695	0.48 0.24,0.95 0.036*	1.45 0.82,2.58 0.201
30-34	1.05 0.72,1.53 0.787	1.39 0.59,3.30 0.455	0.48 0.24,0.95 0.036*	1.42 0.80,2.53 0.231
35-39	0.98 0.67,1.43 0.910	1.38 0.58,3.28 0.470	0.45 0.22,0.90 0.024*	1.24 0.69,2.23 0.464
40-44	0.95 0.65,1.40 0.801	1.39 0.58,3.33 0.463	0.41 0.20,0.84 0.015*	1.28 0.71,2.31 0.417
45-49	0.90 0.61,1.33 0.594	1.32 0.55,3.20 0.534	0.41 0.20,0.84 0.015*	1.18 0.64,2.15 0.596
50-95	0.81 0.55,1.21 0.307	1.28 0.52,3.12 0.594	0.36 0.18,0.75 0.006*	1.25 0.68,2.30 0.480
Partner's education (<primary)				
Primary	1.23 1.15,1.32 <0.001*	0.95 0.85,1.06 0.347	1.14 1.00,1.31 0.051	1.17 1.00,1.37 0.046*
Secondary	1.03 0.96,1.10 0.421	0.80 0.72,0.88 <0.001*	0.97 0.84,1.13 0.729	1.13 0.95,1.33 0.169
Higher	0.77 0.69,0.86 <0.001*	0.54 0.45,0.64 <0.001*	0.86 0.70,1.06 0.158	0.94 0.73,1.20 0.609
Partner employed (no)	0.71 0.65,0.77	0.90 0.76,1.07	1.00 0.77,1.29	1.06 0.86,1.30

	<0.001*	0.242	0.982	0.576
Controlling behavior (no)	4.97 4.71,5.25 <0.001*	5.37 4.93,5.85 <0.001*	3.89 3.50,4.33 <0.001*	5.71 5.06,6.45 <0.001*
More than 5 years' age difference (no)	1.00 0.95,1.06 0.858	1.05 0.96,1.15 0.297	1.00 0.91,1.10 0.998	0.99 0.89,1.11 0.914
Difference in education of 1 or more level (no)	1.04 0.99,1.08 0.109	1.04 0.97,1.13 0.264	1.03 0.96,1.12 0.392	1.07 0.98,1.16 0.155
Marital duration (0-4 years)				
5-9	1.16 1.07,1.26 <0.001*	1.21 1.04,1.41 0.016*	1.20 1.04,1.37 0.012*	1.08 0.93,1.27 0.312
10-14	1.17 1.05,1.29 0.004*	1.32 1.09,1.60 0.005*	1.19 0.99,1.42 0.062	1.12 0.91,1.36 0.282
15+	1.17 1.03,1.33 0.017*	1.34 1.06,1.70 0.014*	1.23 0.98,1.55 0.072	1.12 0.87,1.44 0.371
Household				
Rural (Urban)	0.86 0.81,0.90 <0.001*	0.85 0.77,0.93 0.001*	0.95 0.86,1.06 0.369	0.86 0.77,0.97 0.012*
Wealth quintile (poorest)				
poorer	0.90 0.85,0.95 <0.001*	0.84 0.76,0.92 <0.001*	0.96 0.87,1.07 0.482	0.89 0.79,1.01 0.075
middle	0.88 0.83,0.94 <0.001*	0.80 0.72,0.90 <0.001*	0.99 0.88,1.10 0.795	0.92 0.81,1.05 0.220
richer	0.74 0.69,0.80 <0.001*	0.70 0.62,0.79 <0.001*	0.89 0.78,1.01 0.076	0.70 0.60,0.81 <0.001*
richest	0.60 0.55,0.65 <0.001*	0.53 0.46,0.62 <0.001*	0.70 0.59,0.83 <0.001*	0.63 0.53,0.76 <0.001*
GII at baseline	5.45 3.60,8.26 <0.001*	0.40 0.03,5.97 0.507	0.04 0.01,0.18 <0.001*	0.00 0.00,0.00 <0.001*
Rate of GII change (high)				
Medium change	1.15 1.08,1.23 <0.001*	--	--	--
Low change	1.10 1.03,1.18 0.005	--	--	--
Weight for domestic violence	1.00 1.00,1.00 0.014		1.00 1.00,1.00 0.646	

*=p<0.05

Table 13: Adjusted Odds Ratios of Reporting Emotional IPV in 25 Countries and by Rate of Change in GII

Emotional IPV	Total	High Change	Medium Change	Low Change
	aOR 95% CI p-value	aOR 95% CI p-value	aOR 95% CI p-value	aOR 95% CI p-value
Individual				
Birth Cohort (1958-1967)				
1968-1972	1.05 0.97,1.14 0.212	1.03 0.90,1.18 0.664	0.82 0.69,0.96 0.013*	0.86 0.73,1.01 0.071
1973-1977	1.12 1.01,1.25 0.027*	0.92 0.76,1.11 0.404	0.80 0.64,1.00 0.051	0.85 0.67,1.07 0.159
1978-1982	1.22 1.07,1.39 0.003*	0.88 0.69,1.14 0.336	0.75 0.56,1.01 0.055	0.83 0.61,1.14 0.248
1983-1987	1.34 1.13,1.57 0.001*	0.82 0.60,1.13 0.232	0.77 0.53,1.12 0.171	0.86 0.58,1.27 0.440
1988-1992	1.41 1.16,1.71 0.001*	0.79 0.54,1.15 0.219	0.70 0.45,1.09 0.112	0.83 0.51,1.34 0.449
1993-2003	1.58 1.26,1.98 <0.001*	0.79 0.50,1.24 0.299	0.65 0.38,1.10 0.108	0.85 0.49,1.50 0.582
Respondent's current age	1.02 1.01,1.03 <0.001*	0.99 0.97,1.00 0.123	0.99 0.97,1.01 0.469	1.00 0.98,1.02 0.666
Education (<primary)				
primary	1.12 1.07,1.17 <0.001*	1.05 0.97,1.13 0.226	0.95 0.87,1.04 0.259	1.14 1.03,1.26 0.009*
secondary	1.03 0.98,1.08 0.313	0.90 0.84,0.97 0.005*	1.00 0.90,1.11 0.962	1.20 1.07,1.35 0.002*
higher	0.84 0.78,0.91 <0.001*	0.77 0.68,0.87 <0.001*	0.87 0.74,1.01 0.072	1.12 0.94,1.33 0.188
Age at marriage (<17)				
17-18	1.02 0.98,1.06 0.460	1.00 0.94,1.07 0.915	1.04 0.97,1.12 0.276	1.05 0.97,1.14 0.222
19+	1.00 0.96,1.04 0.942	0.99 0.92,1.06 0.759	0.94 0.86,1.01 0.108	0.99 0.91,1.08 0.891
Parity (0-1)				
2-3	1.15 1.10,1.21 <0.001*	1.13 1.04,1.22 0.004*	1.15 1.04,1.26 0.005*	1.29 1.17,1.42 <0.001*
4-5	1.25 1.17,1.32 <0.001*	1.14 1.03,1.26 0.009*	1.29 1.15,1.45 <0.001*	1.34 1.19,1.51 <0.001*
6+	1.37	1.21	1.35	1.43

	1.28,1.47 <0.001*	1.07,1.37 0.002*	1.18,1.54 <0.001*	1.25,1.64 <0.001*
Respondent employed (no)	1.43 1.39,1.48 <0.001*	1.39 1.32,1.47 <0.001*	1.29 1.22,1.37 <0.001*	1.13 1.06,1.20 <0.001*
Decision making autonomy (none)				
1	1.10 1.04,1.16 <0.001*	1.03 0.94,1.13 0.501	1.17 1.07,1.29 0.001*	1.10 0.98,1.23 0.113
2	1.02 0.97,1.07 0.392	0.79 0.73,0.86 <0.001*	1.08 0.99,1.19 0.081	1.15 1.04,1.29 0.009*
3	0.81 0.77,0.84 <0.001*	0.61 0.57,0.65 <0.001*	0.92 0.85,1.01 0.066	0.92 0.83,1.02 0.119
Desires another child (no)	0.97 0.93,1.01 0.095	1.03 0.96,1.10 0.420	0.92 0.86,0.98 0.013*	0.91 0.85,0.97 0.006*
Dyadic				
Partner's education (<primary)				
Primary	1.11 1.06,1.16 <0.001*	0.92 0.85,1.00 0.041*	1.12 1.02,1.23 0.023*	1.17 1.06,1.30 0.003*
Secondary	0.90 0.85,0.94 <0.001*	0.78 0.72,0.84 <0.001*	0.99 0.89,1.10 0.862	1.09 0.97,1.22 0.129
Higher	0.72 0.67,0.78 <0.001*	0.57 0.51,0.64 <0.001*	0.95 0.82,1.09 0.446	0.96 0.82,1.12 0.584
Partner's age (15-19)				
20-24	1.20 0.90,1.60 0.213	0.89 0.48,1.63 0.698	0.84 0.47,1.50 0.549	1.53 1.02,2.31 0.041*
25-29	1.10 0.83,1.45 0.529	0.87 0.48,1.59 0.658	0.76 0.42,1.35 0.343	1.41 0.94,2.12 0.093
30-34	1.07 0.80,1.42 0.645	0.88 0.48,1.61 0.680	0.75 0.42,1.34 0.335	1.35 0.90,2.03 0.143
35-39	0.99 0.74,1.32 0.951	0.84 0.46,1.54 0.568	0.73 0.41,1.31 0.291	1.23 0.82,1.85 0.322
40-44	0.98 0.73,1.31 0.889	0.83 0.45,1.53 0.549	0.75 0.42,1.36 0.344	1.20 0.80,1.83 0.379
45-49	0.97 0.72,1.30 0.830	0.88 0.48,1.62 0.679	0.76 0.42,1.38 0.367	1.07 0.70,1.63 0.761
50-95	0.93 0.69,1.25 0.614	0.87 0.47,1.62 0.667	0.67 0.37,1.22 0.192	1.15 0.75,1.77 0.528
Partner employed (no)	0.74 0.69,0.79	0.89 0.78,1.01	0.71 0.58,0.86	0.92 0.79,1.07

	<0.001*	0.074	<0.001*	0.280
Controlling behavior (no)	4.37 4.23,4.53 <0.001*	4.80 4.54,5.08 <0.001*	4.37 4.08,4.67 <0.001*	5.19 4.85,5.55 <0.001*
More than 5 years' age difference (no)	1.08 1.04,1.12 <0.001*	1.03 0.96,1.09 0.416	1.02 0.95,1.09 0.589	1.10 1.02,1.18 0.013*
Difference in education of 1 or more levels (no)	1.03 1.00,1.06 0.035*	1.02 0.97,1.07 0.492	1.00 0.94,1.06 0.956	1.05 0.99,1.12 0.077
Marital duration (0-4 years)				
5-9	1.15 1.08,1.22 <0.001*	1.15 1.04,1.27 0.006*	1.25 1.13,1.39 <0.001*	1.09 0.98,1.22 0.094
10-14	1.21 1.13,1.30 <0.001*	1.30 1.15,1.47 <0.001*	1.30 1.14,1.48 <0.001*	1.21 1.06,1.38 0.004*
15+	1.20 1.10,1.31 <0.001*	1.32 1.14,1.54 <0.001*	1.30 1.10,1.53 0.002*	1.32 1.12,1.56 0.001*
Household				
Rural (Urban)	0.81 0.78,0.84 <0.001*	0.78 0.73,0.83 <0.001*	0.89 0.83,0.96 0.003*	0.89 0.83,0.96 0.002*
Wealth quintile (poorest)				
poorer	0.96 0.92,1.00 0.071	0.98 0.92,1.05 0.589	0.96 0.88,1.03 0.256	0.96 0.88,1.05 0.347
middle	0.92 0.88,0.96 <0.001*	0.93 0.86,1.00 0.045	0.96 0.89,1.05 0.362	0.93 0.85,1.01 0.101
richer	0.82 0.78,0.87 <0.001*	0.79 0.73,0.86 <0.001*	0.83 0.76,0.92 <0.001*	0.86 0.78,0.95 0.004*
richest	0.73 0.69,0.77 <0.001*	0.63 0.57,0.70 <0.001*	0.72 0.64,0.81 <0.001*	0.81 0.72,0.91 0.001*
GII at baseline	0.88 0.67,1.16 0.370	703.94 151.85,3263.32 <0.001*	1809.32 611.36,5354.65 <0.001*	0.00 0.00,0.01 <0.001*
Rate of GII change (high)				
Medium change	1.58 1.51,1.65 <0.001*	--	--	--
Low change	1.61 1.54,1.69 <0.001*	--	--	--
Weight for domestic violence	1.00 1.00,1.00 <0.001*	1.00 1.00,1.00 <0.001*	1.00 1.00,1.00 0.697	1.00 1.00,1.00 0.470

Table 14: Adjusted β -Coefficients for the Justification of Physical Violence in Five Hypothetical Scenarios 25 Countries and by Rate of Change in GII

	Total	High Change	Medium Change	Low Change
IPV Justification	Adjusted β -coefficient 95% CI p-value	Adjusted β -coefficient 95% CI p-value	Adjusted β -coefficient 95% CI p-value	Adjusted β -coefficient 95% CI p-value
Individual				
Birth Cohort (1958-1967)				
1968-1972	0.77 0.73,0.80 <0.001*	0.94 0.88,1.01 0.085	1.01 0.92,1.12 0.823	1.01 0.93,1.10 0.783
1973-1977	0.55 0.51,0.58 <0.001*	0.82 0.75,0.90 <0.001*	0.97 0.84,1.11 0.663	1.04 0.92,1.16 0.538
1978-1982	0.41 0.38,0.45 <0.001*	0.77 0.68,0.87 <0.001*	0.96 0.80,1.16 0.684	1.05 0.90,1.22 0.547
1983-1987	0.32 0.29,0.35 <0.001*	0.70 0.60,0.81 <0.001*	1.04 0.82,1.31 0.771	1.06 0.87,1.29 0.574
1988-1992	0.25 0.22,0.28 <0.001*	0.65 0.54,0.78 <0.001*	1.10 0.83,1.45 0.524	1.15 0.91,1.46 0.237
1993-2003	0.19 0.17,0.22 <0.001*	0.58 0.47,0.72 <0.001*	1.14 0.82,1.59 0.427	1.28 0.97,1.69 0.086
Respondent's current age	0.94 0.93,0.94 <0.001*	0.98 0.97,0.99 <0.001*	1.00 0.99,1.01 0.697	1.00 0.99,1.01 0.799
Education (<primary)				
primary	0.89 0.87,0.92 <0.001*	0.94 0.91,0.97 0.001*	0.87 0.83,0.92 <0.001*	0.90 0.85,0.94 <0.001*
secondary	0.81 0.79,0.83 <0.001*	0.84 0.81,0.87 <0.001*	0.77 0.72,0.82 <0.001*	0.78 0.74,0.83 <0.001*
higher	0.62 0.59,0.64 <0.001*	0.67 0.63,0.71 <0.001*	0.62 0.56,0.68 <0.001*	0.76 0.70,0.82 <0.001*
Age at marriage (<17)				
17-18	1.00 0.98,1.03 0.815	0.98 0.95,1.01 0.121	0.99 0.95,1.04 0.725	0.99 0.95,1.03 0.627
19+	0.96 0.94,0.99 0.004	0.97 0.94,1.00 0.088	0.91 0.86,0.96 <0.001*	0.96 0.92,1.01 0.083
Parity (0-1)				
2-3	1.13 1.10,1.16 <0.001*	1.04 1.01,1.08 0.021*	1.05 0.99,1.11 0.125	1.05 1.00,1.09 0.055
4-5	1.24	1.07	1.10	1.08

	1.20,1.28 <0.001*	1.02,1.12 0.004*	1.02,1.18 0.008*	1.02,1.14 0.006*
6+	1.45 1.39,1.50 <0.001*	1.09 1.03,1.16 0.005*	1.26 1.16,1.37 <0.001*	1.18 1.11,1.26 <0.001*
Respondent employed (no)	1.06 1.04,1.08 <0.001*	1.06 1.03,1.09 <0.001*	1.17 1.13,1.21 <0.001*	1.02 0.99,1.05 0.153
Decision making autonomy (none)				
1	0.86 0.83,0.89 <0.001*	0.94 0.90,0.98 0.008	0.93 0.88,0.99 0.032	0.98 0.93,1.04 0.502
2	0.78 0.75,0.80 <0.001*	0.89 0.86,0.93 <0.001*	0.85 0.80,0.90 <0.001*	0.86 0.82,0.91 <0.001*
3	0.66 0.64,0.68 <0.001*	0.77 0.74,0.80 <0.001*	0.65 0.61,0.68 <0.001*	0.78 0.75,0.82 <0.001*
Desires another child (no)	1.23 1.21,1.26 <0.001*	1.04 1.00,1.07 0.026*	1.12 1.07,1.17 <0.001*	1.13 1.10,1.17 <0.001*
Dyadic				
Partner's age (15-19)				
20-24	1.14 0.97,1.33 0.118	0.93 0.69,1.25 0.627	1.14 0.78,1.68 0.493	1.10 0.91,1.32 0.326
25-29	1.21 1.03,1.41 0.020*	0.96 0.71,1.28 0.762	1.13 0.77,1.66 0.527	1.11 0.92,1.33 0.277
30-34	1.27 1.09,1.49 0.003*	1.00 0.75,1.34 0.997	1.14 0.78,1.68 0.497	1.06 0.88,1.27 0.546
35-39	1.34 1.14,1.57 <0.001*	1.01 0.76,1.36 0.925	1.18 0.80,1.74 0.404	1.10 0.91,1.32 0.342
40-44	1.39 1.18,1.63 <0.001*	1.02 0.76,1.37 0.896	1.21 0.82,1.79 0.336	1.09 0.90,1.32 0.355
45-49	1.45 1.23,1.70 <0.001*	1.06 0.79,1.43 0.691	1.25 0.85,1.86 0.260	1.09 0.90,1.32 0.386
50-95	1.47 1.24,1.73 <0.001*	1.06 0.78,1.43 0.729	1.23 0.83,1.83 0.311	1.17 0.96,1.43 0.117
Partner's education (<primary)				
Primary	0.82 0.80,0.85 <0.001*	0.95 0.91,0.99 0.010*	0.85 0.80,0.91 <0.001*	0.88 0.83,0.93 <0.001*
Secondary	0.89 0.86,0.92 <0.001*	0.93 0.89,0.96 <0.001*	0.87 0.82,0.94 <0.001*	0.89 0.84,0.94 <0.001*
Higher	0.87 0.83,0.90	0.84 0.80,0.89	0.78 0.72,0.85	0.84 0.78,0.91

	<0.001*	<0.001*	<0.001*	<0.001*
Partner employed (no)	0.57 0.55,0.60 <0.001*	0.95 0.90,1.01 0.126	0.80 0.70,0.91 0.001*	0.95 0.88,1.02 0.185
Controlling behavior (no)	1.37 1.35,1.39 <0.001*	1.35 1.32,1.38 <0.001*	1.49 1.44,1.54 <0.001*	1.11 1.08,1.14 <0.001*
More than 5 years' age difference (no)	1.01 0.99,1.03 0.512	1.03 1.00,1.07 0.029*	0.99 0.94,1.03 0.542	0.99 0.95,1.03 0.568
Difference in education of 1 or more levels (no)	0.97 0.95,0.98 <0.001*	1.02 0.99,1.04 0.144	0.94 0.91,0.97 <0.001*	0.99 0.96,1.02 0.651
Marital duration (0-4 years)				
5-9	0.97 0.94,1.00 0.060	0.97 0.93,1.02 0.196	0.98 0.92,1.04 0.538	1.01 0.96,1.06 0.786
10-14	0.97 0.93,1.01 0.102	0.96 0.91,1.02 0.165	0.96 0.88,1.04 0.302	1.07 1.00,1.14 0.054
15+	0.96 0.92,1.01 0.125	0.95 0.89,1.02 0.147	0.95 0.86,1.06 0.371	1.07 0.99,1.16 0.092
Household				
Rural (Urban)	1.23 1.20,1.26 <0.001*	1.07 1.03,1.11 <0.001*	1.12 1.07,1.17 <0.001*	1.14 1.10,1.18 <0.001*
Wealth quintile (poorest)				
poorer	0.96 0.94,0.98 0.002	0.99 0.96,1.03 0.740	0.95 0.91,1.00 0.053	0.90 0.87,0.94 <0.001*
middle	0.93 0.91,0.96 <0.001*	0.95 0.92,0.99 0.013*	0.89 0.84,0.94 <0.001*	0.92 0.88,0.97 0.001*
richer	0.85 0.82,0.87 <0.001*	0.87 0.84,0.91 <0.001*	0.71 0.67,0.76 <0.001*	0.87 0.83,0.92 <0.001*
richest	0.76 0.73,0.79 <0.001*	0.73 0.70,0.77 <0.001*	0.60 0.55,0.64 <0.001*	0.82 0.77,0.87 <0.001*
GII at baseline	0.53 0.45,0.62 <0.001*	0.00 0.00,0.00 <0.001*	0.00 0.00,0.00 <0.001*	36.84 18.21,74.53 <0.001*
Rate of GII change (high)				
Medium change	0.81 0.79,0.83 <0.001*	--	--	--
Low change	0.52 0.50,0.53 <0.001*	--	--	--
Weight for domestic violence	1.00 1.00,1.00 0.142	1.00 1.00,1.00 <0.001*	1.00 1.00,1.00 <0.001*	1.00 1.00,1.00 <0.001*

*=p<0.05

Discussion: The results of these analyses partially support the primary hypothesis that women in older birth cohorts have significantly greater odds of reporting IPV than women in younger birth cohorts. In the 25-country model, women belonging to the youngest birth cohort had significantly greater odds of reporting physical (aOR 1.27, (95% CI: 1.02-1.57), $p=0.030$) and sexual (aOR: 2.53, (95% CI: 1.83-3.49), $p<0.001$) IPV compared to women in the oldest birth cohort. This may be because younger women foment their attitudes around what constitutes violence and its (lack of) acceptability in more equitable environments, leading to higher levels of reporting among younger cohorts when viewed in the aggregate. This is supported by the linear, downward trend in GII seen across all 25 countries since 1995, which suggests all countries have moved toward more egalitarian norms to some degree. However, the birth cohort effect was reversed when countries were stratified by rate of change in GII. Overall, women in high change countries had significantly lower odds of reporting physical and sexual IPV with each successive birth cohort. In medium change countries, this trend was only significant for physical IPV for those in the oldest three cohorts (1968-1982) and for sexual IPV in the youngest two cohorts (1988-2003). This may point to the importance of the rate at which gender norms are changing. The fact that the cohort effect wanes as the rate of GII decreases suggests that, even if countries are progressing toward SDG 5, only more rapid change is consistently associated with lower rates of violence. Evidence suggests that a more rapid rate of norms change helps garner the critical mass of people needed to spread a given norm across a community (Centola, Becker, Brackbill, & Baronchelli, 2018) and more effectively increases the negative social pressure on those who remain adherent to a previous set of norms (Kübler, 2001). The lack of cohort effect for women residing in low change countries may mean that more stagnant gender norms are preventing decreases in IPV in these countries. This expands upon previous understanding of the

relationship between changing gender norms and IPV that suggests societies undergoing transitions from strict gender norms to more egalitarian ones often have high rates of violence (World Health Organization, 2013). That is, a quicker transition towards a more gender-equitable environment is associated with lower odds of violence and less justification for IPV than a slower transition. In countries with a slower rate of progress toward SDG 5, the evolution of social norms rejecting the normalization of violence and promoting gender equality may mean that younger women are fomenting their ideas around violence in similar socio-political environments as women from previous birth cohorts women did, making them statistically as likely to report IPV.

It was also hypothesized that women in high change countries would report more violence than women in low change countries due to more women in these environments seeing the violent behavior they experience as IPV, and being subjected to fewer norms that condone it, than women in low change countries. However, overall rates of reported IPV were similar for physical IPV, sexual IPV, emotional IPV, and IPV justification across strata. The underlying reasoning for this hypothesis may still be valid. Women in high change countries may indeed be experiencing less violence than women in low change countries, but they are reporting more of the violence that they experience due to a more egalitarian environment that does not normalize violence to the same degree. Conversely, women in low change countries may not view the violence they experience as IPV or feel reporting violence is at best futile and may even lead to a reprisal of IPV (World Health Organization, 2013). Similar rates of reporting IPV across strata combined with the presence of a birth cohort effect in high change and some medium change countries show that gender norms are not changing for all women equally. Since older women in these contexts are more likely to report physical and sexual IPV than younger women, older

women may be bearing the brunt of IPV in these countries while younger women have lower rates of violence. Evidence suggests that social norms change in a piecemeal fashion, usually starting in younger populations that may have more access to formal drivers of norms change (e.g. education, employment) and be more attuned to informal drivers of norms change (e.g. popular media depicting egalitarian norms) than older women (Overseas Development Institute, 2015). This may be disproportionately reducing rates of IPV for younger women.

From a methodological perspective, this study supports the use of rate of GII decrease in research and program planning. Using the rate of progress in addition to its absolute value gives a new perspective and may allow researchers and development professionals to focus not only on countries with high levels of gender inequality, but also on those that are changing more slowly. Guatemala, for example, had a GII of 0.493 in 2017, a 16% decrease from its 1995 level. Colombia had a similar 1995 GII score as Guatemala, but its decrease in the past two decades (-29%) is nearly double. Focusing more resources on areas of slow change instead of simply countries with the highest GII and adapting strategies successful in areas of quicker change may be one way to improve gender equality globally and speed progress toward SDG 5.

Structural interventions designed to change fundamental causes of IPV such as gender inequality often contend with unintended consequences. At times, this has resulted in increased IPV due to women being seen as challenging deep-seated cultural norms (Blankenship, Friedman, Dworkin, & Mantell, 2006; World Health Organization, 2009a). While associations between the exposure variables and reporting IPV were largely similar across contexts, the exceptions to this could point to transnational patterns helpful in future IPV research and programming. For example, increased decision-making autonomy was associated with a significantly lower odds of reporting physical violence in high change countries (aOR: 0.84,

(95% CI: 0.81-0.88), $p < 0.001$), but a significantly greater odds of reporting IPV in low change countries (aOR: 1.20, (95% CI: 1.08-1.34), $p = 0.001$). Understanding the implications for how programs designed to increase decision-making autonomy may differ in a high change country like Colombia versus a low change country such as Guatemala may help avoid unintended consequences as programs are adapted to new contexts. Formative qualitative work should always be done in concert with stakeholders and community members before adapting a program to a new context, but this type of global analysis may give a first look into how efforts to decrease gender inequality may play out in places of differing rates of gender inequality decline.

There are several limitations to this study. First, the cross-sectional nature of DHS data precludes any causal inferences between birth cohort and reports of IPV. The DHS also includes only ever-married women in the Domestic Violence Module, introducing a potential selection bias against unmarried, partnered women who experience IPV. This may particularly affect younger birth cohorts, which are more likely to have intimate relationships and cohabit before marriage (Peterman et al., 2015). In order to ensure all countries were represented in every birth cohort, the first and last birth cohorts cover a larger range of birth years than the other five. This means the social norms captured by these cohorts may be more diffuse than in the others, obscuring otherwise significant relationships between birth cohort and reporting IPV. Finally, all birth cohort analyses suffer from the inherent interpretability problem that arises from the direct collinearity of age, period, and birth cohort (Yang, 2008). While this is minimized in this study by creating synthetic cohorts using one period (the latest DHS from each country), including a continuous fixed effect for age, and taking into account the multilevel nature of the data (Yang, 2008), this does not fully address the issue of identification and may lead to spurious findings.

This study suggests a birth cohort effect is present in the reporting of physical, sexual, and emotional IPV, as well as in the justification of physical violence. It also shows that this effect varies for physical violence, sexual violence, and IPV justification by the rate at which a country is progressing towards SDG 5. In countries with the fastest decline in GII score, each successive birth cohort has significantly lower odds of reporting IPV than the cohort before, but this trend wanes as rate of GII decrease slows. It may be that the more rapidly changing social norms that accompany quicker decreases in GII are reducing the prevalence of physical and sexual IPV, as well as IPV justification, in younger women while slower rates of GII decline are not providing the critical mass of people or the necessary social pressure to change violent behavior. However, similar overall prevalence estimates across these three strata suggest older women may be bearing the brunt of violence in high change countries, and these countries may benefit from programs aimed specifically at changing social norms in older birth cohorts. This analysis may also provide insight into how best to adapt structural interventions to different contexts where the rate of gender norms change may play a role in advancing progress toward multiple SDG. Regardless of the rate of its decline, this study adds to the evidence that gender inequality is a fundamental cause of IPV in male-female relationships and supports additional efforts to reduce gender inequality, especially in countries with more stagnant gender norms. Reducing global gender equality and encouraging quicker decline in places where it has so far remained sluggish should be implemented if SDG 5, and therefore many other SDG, are to be achieved.

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Chapter 8: Conclusions

IPV is a serious and pervasive public health concern that transcends social and cultural settings (World Health Organization, 2013). Comprised of physical, sexual, and emotional violence, as well as controlling behaviors (Krug, 2002; World Health Organization, 2013; World Health Organization/ London School of Hygiene and Tropical Medicine, 2010), IPV is linked to a range of negative health outcomes. As reviewed in Chapter 2, these include, but are not limited to, physical health consequences such as physiological trauma, gastrointestinal disorders, and sexually-transmitted infections, negative mental health consequences such as anxiety, depression, and post-traumatic stress disorder (Campbell, 2002; Warshaw, Brashler, & Gil, 2009; World Health Organization, 2013), adverse maternal and child health outcomes including premature birth (Campbell et al., 2002; Coker, Smith, Bethea, King, & McKeown, 2000; Plichta, 2004; World Health Organization, 2013), low birthweight (Campbell, 2002; Campbell et al., 2002; World Health Organization, 2013), and underutilization of prenatal care (Metheny & Stephenson, 2017; World Health Organization, 2013), and adverse stress-response behaviors such as increased sexual risk-taking and substance misuse (Decker et al., 2014; Duncan et al., 2016; Silverman, Raj, Mucci, & Hathaway, 2001; Stults, Javdani, Greenbaum, Kapadia, & Halkitis, 2015; World Health Organization, 2013). Negative health outcomes stem from three major pathways: the physical trauma of violence itself, the burden a prolonged, increased allostatic load has on the bio-immunological system, and a lack of access to healthcare and

decision-making autonomy arising from the fear and control many victims of IPV experience (World Health Organization, 2013)

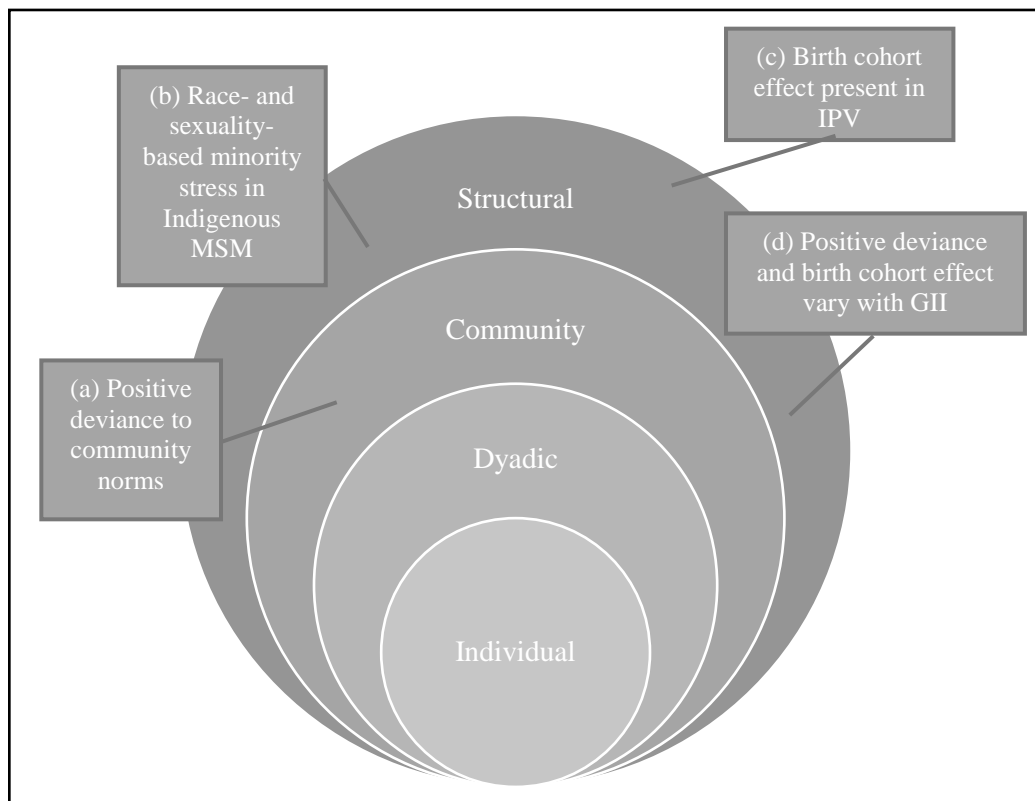
This body of work uses a multilevel lens, grounding the study of IPV in the belief that risk factors for IPV exist at the individual, dyadic, and community levels. These are ultimately governed by fundamental causes of violence that exist at the structural level (Hatzenbuehler, Phelan, & Link, 2013; Phelan, Link, & Tehranifar, 2010). However, while the fundamental causes of IPV may be inherently structural, they permeate all levels of the environment and interact in complex ways to determine an individual's risk for violence (Batchelder, Gonzalez, Palma, Schoenbaum, & Lounsbury, 2015; Bronfenbrenner, 2004; Heise, 1998). Taking a fundamental cause approach does not relegate research, analysis, and intervention to the structural level, but rather provides a framework to study the manifestations of fundamental causes at other levels of the environment (Phelan et al., 2010).

Using this framework, the empirical studies comprising Chapter 4-7 support extant literature concerning the risk factors for IPV at the individual, dyadic, and community levels that are manifestations of fundamental causes of IPV at lower levels of the environment (Garcia-Moreno, Jansen, Ellsberg, Heise, & Watts, 2005; World Health Organization, 2010; World Health Organization, 2013). For example, a lack of education, a young age at marriage, and a personal justification for IPV were shown to increase the odds of reporting multiple forms of violence in LMIC women across studies. Each of these are individual consequences of structural gender inequality that do not allow for the full inclusion of women in society and impart a sense of inferiority to many women in LMIC (World Health Organization & London School of Hygiene and Tropical Medicine, 2010; World Health Organization, 2012). At the dyadic level, a lack of autonomy over fertility decisions, dyadic differences in age and education level between

partners, and controlling behavior by the male partner were shown to increase the odds of reporting violence. These findings are due, in part, to the male privilege and superiority in many LMIC that provide opportunities for men over women and reduce female autonomy (World Health Organization, 2012). Study 2 showed that living in a community that normalizes violence, one where more women are employed, or where men have higher levels of education than women is also associated with reporting IPV. These community norms are both the result of structural gender inequality shaping social scripts for women, but also from the collective ‘upward’ pressure of men and women in communities who conform to these expectations (Batchelder et al., 2015; B. E. Carlson, 1984; Sallis, Owen, & Fisher, 2008). While dynamics at every level of the environment are fundamentally related to structural gender inequality, social forces are multidirectional and interact with each other and with other forces within the same level to constrain their ability of women in LMIC to change their risk of violence (Phelan et al., 2010).

In addition to adding support to these aspects of the IPV literature, this dissertation contributes evidence for new risk factors that operate at higher levels of the social ecology. Chapters 5, 6, and 7 suggest that there are additional aspects of the community and structural environments that influence the risk of IPV in LMIC women and Indigenous MSM (see Figure 15). Recall that using Bronfenbrenner’s conceptualization, the structural level is the broad “blueprint” for society- the macrosocial forces that influence all other levels- while community level refers to the varying operationalization of these forces across space (Bronfenbrenner, 1979; Bronfenbrenner, 1992). The new knowledge generated regarding these levels of the environment can be coalesced into three broad themes: social scripts, structural stigma, and contexts of inequality.

Figure 15: Unique Contributions of the Dissertation Mapped onto the Social-Ecological Model



Social Scripts

Social scripts refer to the individual behaviors dictated by social norms operating at the community and structural levels (Stephenson, Sato, & Finneran, 2013; Stephenson, Koenig, Acharya, & Roy, 2008; World Health Organization, 2009a). In most LMIC, patriarchal norms create unequal power structures that dictate what is considered appropriate behavior and potentiate IPV when these scripts are not followed (World Health Organization, 2009a). Box (a) refers to the results of Chapter 5, which found that women who deviate from the norms of their community norms may alter their risk for violence. For example, women who had more education and who married at an older age than was average for women in their community had significantly lower odds of reporting sexual IPV. Conversely, women who desired fewer children than the norm for her community or who justified IPV in fewer circumstances than was average

for her community had significantly higher odds of reporting sexual IPV. These results highlight how distinct levels of the social ecology can interact to alter the risk for violence. When a woman has the resources to deviate from the norms of her community, she is challenging a community-level construct from an individual perspective. A complete understanding of the social ecology includes the ability for people to exert ‘upward’ pressure on the dyadic, community, and structural factors that govern their communities, as well as being subject to them from the ‘downward’ pressure of more distal social forces (Batchelder et al., 2015). While this was not the first paper to analyze this bidirectional relationship between individual behaviors and community norms regarding violence in LMIC women (Beyer, Wallis, & Hamberger, 2015; Boyle, Georgiades, Cullen, & Racine, 2009), nor was it the first to note that there may be unintended consequences to encouraging certain otherwise positive behaviors (Kim et al., 2007; M. Rahman, Nakamura, Seino, & Kizuki, 2012). It was the first to systematically study how moving outside the social norms of the community might influence the risk for IPV. This supports the notion that working at multiple levels of the environment (in this case the community and individual) to scale up positive deviance behaviors may be one way to change a community’s social scripts regarding unequal gender norms and ultimately reduce the incidence of sexual IPV.

The results of Chapter 7 also show a close relationship between IPV and the social scripts written for women by social norms at the individual level. In this study, an older age at marriage and more education for both the respondent and her partner were associated with reduced odds of reporting physical and sexual IPV across 25 countries. This substantiates the explanation from Chapter 5 that certain behaviors (i.e. education) can increase a woman’s social capital and decrease her risk of violence even if they defy the normal social scripts she is meant to follow.

Chapter 7 also found that higher levels of decision-making autonomy and a woman being employed outside the home were associated with increased odds of all three kinds of violence (physical, sexual, and emotional), thus suggesting that the violation of certain social scripts may increase the risk for IPV as a way to reset the unequal power dynamics that exist in many LMIC communities (World Health Organization, 2013). In both studies, interactions between the individual and community levels of the social-ecological model may be conferring or reducing social capital for women- altering their risk for violence.

This dissertation adds to the understanding of which norms may be associated with increases in violence and which may help reduce the risk of violence. This more nuanced understanding of the interaction between the individual and community levels of the environment may help guide future research and programming efforts. By targeting social norms change interventions to those that are associated with increased violence and individual-level interventions to those associated with decreased violence, it may be possible to more efficiently increase female social capital and autonomy while reducing the unintended consequences of these interventions.

Structural Stigma

In their seminal essay, Link and Phelan (Link & Phelan, 2001) distill the concept of structural stigma into the convergence of four interrelated components. These include 1) the innate desire of humans to conceive of and label differences; 2) the attachment of negative stereotypes to those with the labeled differences; 3) the placement of labeled persons into socially-prescribed groups for the separation of “us” and “them”; and finally 4) the resultant loss of status and privilege that leads to inequitable outcomes for the labeled groups (Link & Phelan, 2001). In this way, structural stigma trickles down from the highest level of the social-ecological

model through community norms, and into dyadic contexts where it is manifested as violence (World Health Organization, 2009a). Box (b) of Figure 15 refers to the consequences of multiple forms of structural stigma in a given population. According to intersectionality theory, the addition of multiple marginalized identities compounds the risk for negative effects (e.g. IPV) that one minority status would confer (Bowleg, 2008).

The results of Chapter 6 support this intersectional approach to violence research and adds new knowledge regarding how multiple structural stigmas influence the risk for IPV in Indigenous MSM. Little is known about how IPV presents in this population, and this analysis represents the first-ever nationwide primary data collection effort on the subject. The results of this paper suggest high levels of violence in this population. They also show that more experiences of anti-Indigenous racism and higher levels of anticipated stigma were associated with a significantly greater odds of reporting IPV. However, this unique place of Indigenous people in American society also points to unique points of resilience that may prove helpful in intervening on sources of structural stigma. In this way, Indigenous MSM can benefit from community-level factors such as Native enculturation and participation in traditional Native practices to buffer some of the structural stress and historical trauma wrought by colonialism. While the specific variables used in Chapter 6 were not significant, the use of Native-specific resiliencies to combat structural stigma and reduce IPV should be explored further through formative qualitative work with communities of Indigenous MSM in both urban areas and throughout Indian Country to better illustrate how the ‘upward’ pressure of community-level factors on structural stigma might be used to reduce its negative effects on individuals. Beyond Indigenous MSM, this study speaks to the broader implications of living in an environment of stigma. Using Link and Phelan’s (2001) conceptualization, gender inequality can be seen as

gender-based stigma, wherein negative stereotypes that confer a loss of status and privilege are applied to women in a community, increasing their risk of violence (Shimmin, 2009). When viewed through this lens, the results of studies two and four reviewed above also support the notion that structural stigma permeates all levels of the social-ecological model, manifesting in strict social scripts for women and the negative consequences (IPV) of violating them. The risk of sexual IPV in Chapter 5 that comes from living in an environment with more severe gender-based structural stigma (as measured by the GII) illustrates the often linear relationship between the level of structural stress in an environment and the odds of IPV.

Contexts of Inequality

The third theme present across studies is the importance of structural context in shaping the risk for IPV. Box (d) refers to results of the two studies that analyzed the context of gender inequality across LMIC. Chapter 7 is the first attempt to study how the change in gender inequality over time is associated with IPV by quantifying a birth cohort effect for the reporting of IPV. In the 25-country model, women in the youngest birth cohort had a significantly greater odds of reporting all three types of IPV than women in the oldest birth cohort. This suggests that the socio-political moments in which women form their attitudes about IPV matter for the reporting of violence. The global, downward trend in GII in the past decades may have prompted a change in the acceptability of violence among younger women, leading them to report more of the violence they experience.

Chapter 7 also found that birth cohort effect varies substantially by the rate of change in a country's GII score. Overall, women in high change countries had significantly lower odds of reporting physical and sexual IPV with each successive birth cohort. In medium change countries, this trend was only significant for physical IPV for those in the oldest three cohorts

(1968-1982) and for sexual IPV in the youngest two cohorts (1988-2003). This may point to the importance of the rate at which gender norms are changing. The fact that the cohort effect waned as the rate of GII decreased suggests that, even if gender inequality is decreasing, only more rapid change is consistently associated with lower rates of violence. This supports previous evidence that more rapid norms change helps garner the critical mass of people (Centola, Becker, Brackbill, & Baronchelli, 2018) and negative social pressure needed (Kübler, 2001) to foment new social norms. Chapter 5 also analyzed how IPV varies in different contexts of gender inequality. When stratified by the level of gender inequality, settings characterized by greater gender equity and lower IPV prevalence showed weaker associations between positive deviance behaviors and reporting sexual IPV than contexts of higher inequality and IPV prevalence. In more egalitarian societies, positive deviance could represent less of a challenge to social scripts than in more inequitable environments with more stringent gender norms. Together, these two studies point to the importance of how the context of inequality shapes perceptions surrounding IPV across space (Chapters 5 and 7) and time (Chapter 7).

Other levels of the environment must also be examined when considering how the context of inequality is associated with IPV. Two places with similar rates of change in GII over time may have different gender norms. For example, The Philippines and Cote D'Ivoire are both considered "low change" countries, which puts them in the same context of inequality for the purposes of Chapter 7. However, these two countries likely have different social scripts for women and men in their respective communities, as well as power dynamics within relationships that lead to differing risk profiles for experiencing IPV. Although all these are manifestations of the fundamental cause of IPV (gender inequality), interventions to reduce these risks need to

understand how forces across the social ecological model interact with each other in specific study communities.

Combining a social ecological perspective with a fundamental cause approach, this dissertation provides new knowledge on the fundamental causes of IPV, how they influence other levels of the social ecology, and how these relationships change based on structural context. The defining message is that where a person lives has a profound effect on his or her risk for experiencing IPV. Acting on the fundamental causes of IPV and their permutations at each level of the social ecological model is the most effective way to prevent violence (World Health Organization, 2009a). To fully eliminate IPV in LMIC women and Indigenous MSM, it will be necessary to confront its fundamental causes directly through multilevel interventions, the aim of which is to reduce gender inequality and minority stress through social norms change by using both the ‘downward’ pressure through structural change and ‘upward’ pressure through working at the individual, dyadic, and community levels.

However, interventions for IPV have most often been done through single-level interventions. Even the most wide-reaching structural interventions cannot fully address the fundamental causes of IPV because they do not meaningfully include both ‘upward’ pressure to change the constructs that allow IPV to occur in addition to the ‘downward’ pressure from changes to the environment in which it is already occurring. The only published review on the topic sorts these into four categories: economic, physical, politico-legal, and social (Bourey, Williams, Bernstein, & Stephenson, 2015). Two things should be noted about these types of interventions. First, the term “intervention” means something more diffuse at the structural level than it does in more proximate settings. Interventions normally connotes a specific action taken to change the course of events for a specific reason (Blankenship, Friedman, Dworkin, &

Mantell, 2006; Institute of Medicine (US). Committee on the Social et al., 1995), but structural interventions may not be implemented for the express purpose for which they are being evaluated. This often occurs in relation to policy changes, which may have unintended consequences (positive or negative) for IPV, even if the policy is not intended to address IPV directly. In this way, what constitutes a structural intervention may fall outside of traditional notions of the term in scientific research. Each type of structural intervention for IPV is outlined according to Bourey et. al's (2015) framework below, along with an example from one or both target populations.

Economic interventions at the structural level aim to decrease gender inequality by increasing women's economic empowerment and decreasing their reliance on male earners (World Health Organization, 2009b). These have so far centered on the widespread microfinance programs that began in Bangladesh in the 1970s (M. W. Rahman, Luo, Ahmed, & Xiaolin, 2012) and more recently on cash transfers (conditional and unconditional) that gained prominence in Latin America (Attanasio, Battistin, Fitzsimons, Mesnard, & Vera-Hernandez, 2005; Attanasio, Fitzsimons, Gomez, Meghir, & Mesnard, 2010; Barber & Gertler, 2008). These initiatives provide small loans (microfinance) or handouts (cash transfers) to women in an effort to increase their ability to provide for themselves and their families in areas where formal employment and economic decision-making are largely left to men (World Health Organization, 2009b). By increasing women's economic empowerment and decreasing their reliance on male partners, men may see their partners (and women in general) as more egalitarian providers- reducing gender inequality and IPV.

Adapted for rural South Africa, the Intervention with Microfinance and for AIDS and Gender Equity (IMAGE) study introduced a microfinance scheme for women supplemented with

skills building sessions aimed at changing gender norms and cultural beliefs (i.e. normalization of violence) for men (Pronyk et al., 2006; Pronyk et al., 2008). A randomized control trial showed that female participants reported 55% fewer acts of IPV in the past 12 months than a control group (Pronyk et al., 2006). Men and boys also endorsed significantly fewer statements condoning violence and controlling behavior towards their female partners. While previous (Pronyk et al., 2006) microfinance-only programs have reported increases in IPV due to disagreements between partners on control of the newly acquired assets and the fact that women's social norms surrounding gender equality were changing faster than men's (World Health Organization, 2009b), it is hypothesized that IMAGE avoids increases in IPV by simultaneously changing patriarchal social norms among men and women in study communities (Pronyk et al., 2006). By engaging with both men and women, IMAGE increased the social capital of women and tempered attitudes of gender inequality and violence normalization in men, leading to an overall reduction in levels of physical, sexual, emotional, and economic IPV (World Health Organization, 2009b).

Physical interventions include programs and policies that aim to reduce IPV by changing the built environment or women's interaction with it (Bourey et al., 2015). These programs often employ policies aimed at reducing the risk of IPV through limiting the availability of substances (i.e. drugs, alcohol) known to be associated with violence. As referenced in Chapter 2, there is substantial evidence that alcohol is associated with IPV (Ally et al., 2016; Davis, Kaighobadi, Stephenson, Rael, & Sandfort, 2016; Gil-Gonzalez, Vives-Cases, Alvarez-Dardet, & Latour-Perez, 2006; Madhivanan, Krupp, & Reingold, 2014; World Health Organization, 2006) and that excessive alcohol consumption by a male intimate partner can worsen the severity of violence (Graham, Bernards, Wilsnack, & Gmel, 2011). Studies from the United States posit that limiting

the availability of alcohol through regulation may help decrease IPV by reducing access to alcohol (McKinney, Caetano, Harris, & Ebama, 2009; Roman & Reid, 2012). Another physical intervention, largely targeted to reduce non-partner violence, uses aggregated safety audit data to create dynamic maps of cities in seven countries (Viswanath & Basu, 2015). This information can be accessed via a mobile app, allowing women to avoid areas that are deemed unsafe. Neighborhoods are graded on scale of 0-5 based on metrics like lighting, reported assaults, and crime rates, providing the ability for women to avoid potential problem areas. While regulation of alcohol availability and social mapping are inherently structural in that they influence the structure of a community, they are not truly structural interventions because they do not address the fundamental causes of IPV. Reducing alcohol availability does nothing to improve gender equality or decrease the normalization of violence, making these types of interventions less effective at reducing IPV.

Politico-Legal interventions for IPV in male-female couples often refer to changes in legislation surrounding women's ability to report IPV, the ownership and inheritance of assets, and access to divorce (Bourey et al., 2015). These types of interventions reflect a change in gender norms in some parts of society (e.g. among lawmakers) in an attempt to diffuse more egalitarian gender norms more widely. On their own, these interventions have mixed results. Evidence from Mexico on no-fault divorce legislation found that this legislation led to decreases in some forms of IPV, but likely led to a substitution effect, rather than a détente in IPV either through dissolution of the relationship or desistence of violence (Garcia-Ramos, 2017). That is, women felt more empowered to request divorce in the face of emotional and/or economic violence, which many have led to men employing more physical and sexual violence as a way to assert power and prevent divorce from occurring. Politico-legal changes not designed as IPV

interventions may also inadvertently alter fundamental causes of IPV. As an example, Metheny and Stephenson found that the Supreme Court decision legalizing marriage equality in *Obergefell v. Hodges* (Supreme Court of the United States, 2015) had differential effects on how included American MSM felt in their communities when considering community attitudes toward LGBT rights and levels of discrimination (Metheny & Stephenson, 2018). Social inclusion is an important antecedent of IPV via the pathway of minority stress (Badgett, 2011; Finneran & Stephenson, 2014), suggesting that national policy legalizing same-sex marriage may have been a structural intervention for IPV in male couples in the United States because it altered the macrosocial forces underlying it.

Another pitfall of politico-legal structural interventions alone is that they do not assess other social norms that may affect the ability of women to take advantage of new gender-equitable legislation. For example, the 1998 South African Domestic Violence Bill (Department of Justice of the Republic of South Africa, 1998) outlaws all four major forms of IPV and levies strict punishment for perpetrators, but does not provide for additional support to women whose community or cultural norms prevent them from taking advantage of this law and reporting the violence they experience (Ortiz-Barreda, Vives-Cases, & Gil-González, 2011). National legislation is particularly problematic when used alone because intersectional identities are rarely considered. The compounding social stresses faced by ethnic minority women, the disabled, those in poverty, and other vulnerable groups may not benefit from a diffusion of more equitable gender norms stemming from politico-legal approaches unless other interventions are combined with them (Ortiz-Barreda et al., 2011). This is discussed by Meyer (2016) in a response to a study arguing that today's "gay teenager" is not subject to nearly the same levels of minority stress as men in the past (Savin-Williams, 2009). This, the author claimed, calls for a

restructuring of minority stress theory to take account of the strides the LGBT community has made in rich countries and the reduced levels of minority stress present in these societies (Savin-Williams, 2009). Meyer's response agreed that the social condition regarding MSM has improved significantly over the last half century in these countries, but that minority stress is still pervasive (Meyer, 2016). Arguing that politico-legal interventions (e.g. marriage equality) do not equally protect all male couples, Meyer specifically pointed to the intersectional stressors faced by racial minority MSM and those residing outside countries where LGBT rights are enshrined in law (Meyer, 2016). Politico-legal structural interventions should cater to marginalized populations and provide specific provisions for intervening on social norms in these communities in order to be most effective at changing social norms and reducing IPV.

Social interventions to reduce IPV aim to increase gender equality by directly engaging with social norms surrounding gender and women's rights. For example, Soul City in South Africa is well-evaluated and uses a series of radio and television episodes to highlight gender inequality and IPV (Usdin, Scheepers, Goldstein, & Japhet, 2005; World Health Organization, 2009b). This is accompanied by information booklets distributed nationally. While an evaluation found attitudinal changes in IPV among a random sample of the national population before and after the series aired (e.g. an increase from 77% to 88% among people agreeing with the phrase "no woman ever deserves to be beaten"), it was unable to establish a direct impact on violent behavior (Usdin et al., 2005).

Recommendations for Future Interventions: While structural interventions have had some success in reducing IPV in some communities, they have failed to fully address IPV. Considering that social-ecological thinking maintains that the fundamental causes of IPV exist at all levels of the environment, and that these levels interact with each other, moving from single-level

interventions to multilevel interventions is the next step in advancing interventions to reduce and prevent IPV. Interventions at any one level (even the structural level) will have moderate effects on violence prevention at best while interventions that integrate approaches at all levels of the environment can more holistically address the fundamental causes of IPV (Assari, 2013; Evans-Campbell, 2008; Oetzel & Duran, 2004; Shaw, McLean, Taylor, Swartout, & Querna, 2016).

Despite knowledge of the benefit of multilevel interventions for IPV dating to the 1980s (McLeroy, Bibeau, Steckler, & Glanz, 1988; Simons-Morton, Simons-Morton, Parcel, & Bunker, 1988), few multilevel interventions designed to reduce IPV have been widely implemented and evaluated. Stepping Stones (Dunkle et al., 2006) and SASA! (Abramsky et al., 2014; C. Carlson, 2013) are two of the only rigorously evaluated examples of how working at multiple levels of the environment can reduce violence. Through community mobilization efforts and the inclusion of men and boys into social norms change, these interventions are two of the most successful interventions implemented to reduce IPV (World Health Organization, 2009b). Originally developed for HIV prevention in Southern Africa, Stepping Stones uses a variety of methods including personal reflection (individual level) and dyadic role-play and drama to engage communities on the issues of gender-based violence, relationship skills, and the normalization of IPV (Dunkle et al., 2006; World Health Organization, 2009b). Importantly, Stepping Stones involves men and boys as well as women and girls through sex-specific community meetings and mixed-gender activities (community level) in an effort to create more egalitarian relationships. In a community-randomized trial of the program in South Africa, men in study communities reported significantly less physical and sexual IPV in the two years post-Stepping Stones than men in control communities (Dunkle et al., 2006; World Health Organization, 2009b). This was paralleled by attitudinal changes reflecting an increase in gender equality. Similarly, SASA!

consists of four phases that engage communities in thinking about violence and HIV as interconnected issues before raising awareness about communities' acceptance gender inequality as the primary driver of IPV (C. Carlson, 2013). The program then focuses on how community members can support victims of IPV and men who are committed to ending IPV in their communities become activists in diffusing gender-equitable norms. An impact evaluation of the program found decreases in physical, emotional, and sexual, and economic violence, with more than half of women reporting a decrease in these types of violence over the two years since SASA! implementation (Abramsky et al., 2014). However, a small percentage (12-15%) of women indicated their levels of violence had increased, suggesting that the diffusion of gender equitable norms did not reach all men (World Health Organization, 2009b).

While both Stepping Stones and SASA! can be considered multilevel, improvements to their study design could help improve results and further decrease violence. By more concretely including advocacy for structural change at the community, regional, and national levels, both programs may have had more success. For example, advocating for legislation to outlaw marital rape in the study countries, robust inheritance laws for women, and no-fault divorce legislation may bolster the effects of the community, dyadic, and individual level interventions employed by both programs.

A small, but expanding, body of research shows promising effects in reducing IPV in LMIC through multilevel interventions. However, multilevel interventions encounter barriers to implementation and evaluation that makes intervening directly on fundamental causes of IPV difficult. This difficulty reduces the desire of governments, international organizations, and development agencies to implement multilevel interventions and is one reason few of them have so far been tested (Blankenship et al., 2006). Firstly, multilevel interventions are expensive to

implement. Working with entire communities necessitates an often-lengthy period of trust building and community connection, expenses are imperative to the success of later social norms change, but that have few dividends in terms of research output (World Health Organization, 2009b). They also often require a larger sample size, extensive budgets for recruitment and retention efforts, and more program staff to implement the program- requiring careful fidelity and cross-contamination protocols (Blankenship et al., 2006). Funding multilevel interventions is therefore difficult, especially in a competitive funding environment with ever-shrinking international development and research budgets.

Even when funding is secured, the nature of multilevel interventions makes them difficult to implement and evaluate. The very reason multilevel interventions are such powerful tool for reducing IPV is also the reason they are difficult to implement and evaluate (Blankenship et al., 2006). Fundamental causes are, by nature, diffuse social forces that permeate nearly every aspect of society and level of the environment, which can make the politics of multilevel interventions difficult. Gender equality and LGBT rights can be sensitive topics, making stakeholder and community buy-in difficult to obtain in some areas. As discussed in Chapter 2, marital rape is still legal in ten countries (Equality Now, 2017). Male-male sexual behavior is still illegal in 72 nations and punishable by death in eight (Carroll & Mendos, 2017). Within the land recognized as the United States, only a small percentage of American Indian nations recognize same-sex marriage (Zug, 2016), and funding for government-funded LGBT research can ebb and flow with the political environment (Pew Research Center, 2017). These realities reflect deep-seated cultural norms that make gaining approval, funding, and buy-in to implement the large-scale multilevel interventions needed to change those norms especially difficult.

Even when obstacles to implementation can be overcome, study design and evaluation of multilevel interventions is challenging. Randomized control trials are the gold standard in intervention research, but social norms permeate to entire populations, making randomization nearly impossible (Blankenship et al., 2006; Institute of Medicine (US). Committee on the Social et al., 1995). This means that researchers must either randomize entire communities- an imperfect compromise given the extent of community-level differences and the reality of cross-contamination- or rely on natural experiments (Blankenship et al., 2006). Baseline measures for natural experiments are often difficult to obtain since researchers do not always know when a social norm-changing event will occur. Once implemented, the scale of multilevel interventions makes their evaluation difficult. Historical and maturation threats to internal validity abound due the inability to control intervention conditions, potentially obfuscating study results (Dunbar-Jacob, 2012).

Finally, multilevel interventions must contend with unforeseen circumstances that arise from their implementation. Most of the studies reviewed above also reported a rise in the level or severity of IPV among some women (World Health Organization, 2009b). Due to some of the limitations listed above, it is unclear whether this is due to a decrease in the normalization of violence, resulting in increased reporting, or whether some male partners are either 1) not reached by the intervention or 2) impervious to the tactics used in the interventions and continue to perpetrate IPV to reclaim or hold onto their dominance (World Health Organization, 2009b). It is likely a combination of both. It is also likely that large-scale changes in forces as fundamental as gender inequality and homonegative stigma will likely have unintended consequences for indicators beyond those on which data is collected.

Advancing the rigor and scale of multilevel interventions are two necessary advancements to improve upon the existing evidence (Ellsberg et al., 2015). Most multilevel interventions suffer from short follow-up periods (often one year or less), hampering the ability to establish a clear change in social norms and therefore violent behavior (Blankenship et al., 2006; Ellsberg et al., 2015). A new cadre of longitudinal, multilevel interventions is needed to truly understand how changes in social norms impact IPV. Study four lays the groundwork for this by establishing the possibility of a cohort effect in the synthetic birth cohorts constructed from cross-sectional DHS data. Using this study as preliminary data, a prospective cohort intervention would allow for rigorous evaluations of this cohort effect and the ability to better understand how social norms diffuse across populations over time. Secondly, many of the multilevel interventions tested so far have had small sample sizes- often only a few randomized clusters (Ellsberg et al., 2015; World Health Organization, 2009b). This suggests that a lack of significant findings or unintended consequences may have more to do with a small sample than an absolute effect (Ellsberg et al., 2015). The large-scale, global studies conducted in studies two and four may provide insight to researchers looking to scale up multilevel interventions. Placing interventions in areas of similar levels and rates of GII decline may allow interventions to act on the fundamental causes of IPV in similar ways- without the unintended consequences that often befall structural interventions that do not adequately address how social norms are at play in a specific community (Blankenship et al., 2006). Lastly, involving men and boys in social norms change is critical to reducing gender inequality in LMIC (What Works to Prevent Violence, 2019). Large-scale analyses such as studies two and four may highlight the best ways to target men in a given structural context. For example, the significance of the association between age at marriage and reporting sexual IPV in some structural contexts of studies two and four likely

means there is room to work with the men who marry young girls and the (traditionally male) community leaders who condone it as a way to dissuade these practices and reduce IPV.

Most interventions to reduce gender inequality and decrease IPV have so far worked in isolation, using the norms of specific study communities to construct interventions to reduce gender inequality (Bourey et al., 2015). Efforts to collate, evaluate, and learn from existing interventions are underway in an effort to build new multilevel interventions for the prevention of violence (What Works to Prevent Violence, 2019). A multi-country initiative, What Works to Prevent Violence against Women and Girls is the largest effort to learn from structural and multilevel interventions for IPV to date. It focuses on rigorous impact evaluations and community randomized trials of programs in 13 countries in an effort to distill best practices in economic empowerment, social norms change, and multifaceted approaches to changing the underlying factors driving IPV at each level of the social ecological model- especially in women facing multiple marginalities (What Works to Prevent Violence, 2019). Using the third theme of this dissertation (structural context), lessons from this dissertation could be used to identify the kinds of environments in which a certain approach is likely to be most effective. For example, efforts to decrease gender inequality by targeting women's household decision-making abilities may be more effective in LMIC with a more quickly declining GII score than in countries where GII score is more stagnant and such an approach could lead to increases in IPV. In these contexts, focusing on other manifestations of gender inequality, such as child marriage, may be more efficient. A better understanding of how gender inequality expresses itself in different contexts can help target multilevel interventions to focus on more efficient ways to change social norms in a given context, avoid unintended consequences (especially increases in IPV), and better target the adaptation of existing interventions to other contexts.

While multilevel interventions are theoretically promising for the other target population of this dissertation, much more work needs to be done on how best to reduce minority stress in Indigenous MSM (Balsam, Huang, Fieland, Simoni, & Walters, 2004; Ristock, Zoccole, Passante, & Potskin, 2017; Simoni, Walters, Balsam, & Meyers, 2006). There is so little research available on Indigenous MSM that interventions to reduce IPV in this population are likely premature. This dissertation provides a substantial addition to the scant literature on IPV in this population, but more formative work- both qualitative and quantitative- should be done to explicate the processes by which Indigenous MSM experience minority stress and the resiliencies that buffer it. This work should be done in close collaboration with Native communities, respect Indigenous knowledge and sovereignty, and acknowledge colonialism an ongoing and harmful practice that works in tandem with minority stress to lead to violence in Indigenous MSM (Getrich et al., 2013; Walters & Simoni, 2002). Disentangling the multiple social forces that lead to IPV in one of the United States' most marginalized population is difficult, but necessary work. Once there is a better understanding of how to approach violence in this population, specific efforts to reduce it through social norms change can be developed. Existing research on Indigenous populations in North America suggests that reconciliation- the active and intentional reduction in the social stressors wrought by colonialism- with Native populations will require the type of multi-pronged approach advocated by Ellsberg and colleagues (2015) to reduce IPV in Indigenous MSM (Maddison, 2016; University of Manitoba, 2017). For both populations, it will be necessary to expand the scope of multilevel interventions to not only consider multiple levels of the environment, but every level of the environment. Only by working at the individual, dyadic, community, and structural levels (and acknowledging how

these factors change over time and space) can holistic interventions be developed to target the myriad manifestations of the fundamental causes of IPV.

Recommendations for Future Studies: This body of work also advances the methodology of IPV analysis in three ways. Chapter 4 is the first study to employ the DHS interviewer survey as a way to improve the statistical robustness of results and control for the nesting of respondents by interviewer. The finding that DHS interviewer experience was associated with significantly lower odds of reporting physical IPV from this study highlight a potential source of interviewer bias and support the expanded use of interviewer surveys in DHS analyses as they become available. Since fieldworker recruitment, training, and survey implementation likely vary by country, all future DHS analyses should consider using the fieldworker code as a random effect in countries where the fieldworker dataset is available in order to control for interviewer effects present in the data.

Second, studies two and four support the use of the GII to measure gender-based structural stigma facing LMIC women in DHS analyses. Prior to these analyses, the GII had not been used in DHS studies of IPV. Since the DHS lacks its own measure of gender inequality, the content and face validity of this method supports its future use. The use of the GII in DHS studies of IPV data also suggests additional indices that measure structural inequalities may be useful in measuring how IPV manifests in different environments. Future studies may be able to capture additional aspects of inequality through global metrics such as the GINI coefficient (World Bank, 2015) or the HIV Stigma Index (UNAIDS, 2018).

Finally, Chapters 5 and 6 represent expansions of existing methods for data collection and analysis that may be important for future work. Since the DHS does not collect community-level data, community means are often created from the aggregated responses of respondents

within each PSU (Elfstrom & Stephenson, 2012; Stephenson, Elfstrom, & Winter, 2013; Stephenson & Elfstrom, 2012). Chapter 5 suggests that measures to calculate individual deviance from these norms can provide additional insight into how community norms influence the risk for IPV. Chapter 6 is the largest online study of Indigenous MSM to date, reflecting proof of concept for reaching this diffuse and under-researched population using existing methods of online data collection (Stephenson et al., 2017). While this was an exploratory study, the use of social media and online community stakeholders was successful in recruiting a sample of more than 150 Indigenous MSM in the United States, suggesting future online outreach to this community is feasible.

Research and advocacy have begun to align with this approach- that fundamental causes of IPV should be intervened upon through multilevel interventions. Specifically, the United Nations' SDG provide the framework for the next decades of global development and advocate for a structural approach (United Nations, 2019). SDG 5.2.1 calls for the elimination of IPV against women through reducing gender inequality and SDG 10.2 calls for the full social inclusion of marginalized populations, "irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status" (United Nations, 2019). Through providing additional evidence for well-known antecedents of violence and advancing knowledge around the importance of social scripts, environments of stigma, and contexts of inequality, this dissertation creates new knowledge on why a person's structural environment is key to their risk of experiencing violence. Through intervening on the fundamental causes of IPV at each level of the environment- what the United Nations refers to as a "structural transformation" of society (United Nations, 2019)- the elimination of IPV is possible.

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