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THE CONTEXT AND CONSEQUENCES OF SEXUAL COERCION TOWARDS
SOUTH AFRICAN BOYS AND THE IMPACT OF ENHANCING THE SCHOOL
ENVIRONMENT ON SCHOOL SEXUAL CLIMATE AND COERCION

A Dissertation in

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by

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ABSTRACT

National reports from South Africa suggest that nearly half of adolescent boys will experience sexual violence by age 18. However, research on sexual violence has predominantly focused on violence towards girls and women. This dissertation consists of three studies that address existing gaps in the literature and expand our understanding of sexual violence towards South African boys using data from the HealthWise translational research study.

Study 1 uses data from 252 South African adolescent boys reporting sexual coercion in grade 8 to examine the context of boys' most recent experience of sexual coercion. Study 2 uses propensity score modeling and mediation analyses to examine the consequences of sexual coercion on boy's sexual behaviors, attitudes, and norms among victimized boys and their matched peers ($n = 1454$). Lastly, study 3 evaluates how school-wide activities, implemented in the 56 participating schools, impact the schools' sexual climate and overall prevalence of sexual coercion within schools.

Eighth grade boys were most likely to report that their perpetrator was a similar-aged female and that perpetrator's age played a particularly important role in what tactics were used. Adult perpetrators were more likely to use physical force, threatened them, harassed them electronically, and that the perpetrator was drinking or using drugs at the time. Results from study 2 suggest that when boys are balanced on baseline characteristics, the experience of sexual coercion is associated with increases in perceived norms of risky sex and coercive behaviors. The results further support an indirect effect of sexual coercion on sexual risk behavior and perpetrating sexual violence a year later through the effect on perceived sexual norms.

Though results from study 3 did not support an effect of school-wide activities on the school's overall sexual coercion prevalence, sexual climate and coercion prevalence varies substantially across schools. Schools with more risky and aggressive sexual climates have a higher prevalence of sexual coercion. These findings, along with findings from studies 1 and 2, suggest that schools are an important venue for addressing sexual coercion. Future research should further explore how schools can work to prevent sexual violence amongst students.

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Six years ago I arrived in State College eager to begin my graduate school adventure after a brief hiatus from school. Though I arrived in State College alone, I end this journey with new mentors, friends, and family who I have met along the way, all of whom played a pivotal role in my development as a researcher.

To my advisor, Ed Smith, thank you for your advice, guidance, and support over the past 6 years. For helping me to hone my research interests, encouraging me to forge my own path, and reminding me to balance life and academics.

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Chapter 1

Sexual Violence in South Africa

In South Africa, over 12% of 8th graders participating in a nationally representative survey reported that they had ever been forced to have sex. This represents close to half of all 8th graders who have ever had sex (YRBS; Reddy et al., 2010). Sexual violence is a serious public health concern throughout the world (Krug, Dahlberg, Mercy, Zwi, & Lozano, 2002), but may have particularly grave consequences in South Africa where rates of HIV and AIDS infection are high (Shisana et al., 2009). Interventions aimed at preventing the transmission of HIV and AIDS through reducing sexual risk behavior may have limited impact for youth experiencing sexual coercion as these experiences are not volitional. Sexual violence may further undermine interventions aimed at reducing sexual risk behaviors as cross-sectional research suggests that youth experiencing sexual victimization may be more likely to engage in risky sexual behavior (Buzi et al., 2003; Raj, Silverman, & Amaro, 2000; Olley, 2008).

Although research on sexual violence has predominantly focused on sexual violence towards girls and women, the World Health Organizations exerts that sexual violence among boys and men is a serious problem (Krug et al., 2002). Yet, despite reports from two nationally representative studies supporting high prevalence of sexual violence among boys nearly all research on sexual victimization in South Africa focuses on female victimization (Andersson & Ho-Foster, 2008; Reddy et al., 2010). One factor that may contribute to this dearth of research is the belief that sexual coercion does not happen to boys or that it may not be as problematic as it is for girls (Peterson, Voller, Polusny, & Murdoch, 2011). Research suggests that people minimize the seriousness of

sexual violence against men and boys and are more likely to believe that the victim would enjoy the sexual encounter when the perpetrator was female (Davies, 2002). However, few quantitative studies are available to provide insight into the context or consequences of boy's sexual victimization.

Dissertation Structure

The current chapter begins with a definition of sexual violence and sexual coercion, followed by a review of the research on sexual violence among boys and approaches to reducing sexual violence among youth. Chapters two through four each present an independent study that aims to expand the literature on sexual violence. All three papers will use quantitative data currently being collected from a translational research study involving an intervention that aims to reduce substance use and sexual risk behaviors in Cape Town, South Africa. Chapter two provides a cross-sectional examination of the context of sexual violence for boys, specifically identifying the perpetrators of sexual coercion among boys and the tactics that are used in these encounters. Chapter three assesses the influence of sexual coercion on adolescent boys' sexual behaviors, attitudes and norms using propensity score modeling and three waves of data to help reduce some of the bias that arises in cross-sectional and observational studies. The final study, presented in chapter four, evaluates how an intervention component aimed to enhance the school environment impacts the school's sexual climate and prevalence of sexual coercion within the school.

Defining Sexual Coercion

The literature on sexual violence utilizes a range of terms and measures that poses a challenge when comparing studies and synthesizing the research. Some studies take a

broad look at sexual violence that incorporates any unwanted sexual experiences including unwanted sexual kissing and touching, in addition to penetrative sexual assaults. These studies allow for a larger sample size and are better able to capture the extent of sexual assaults among youth. However, examining a range of unwanted sexual experiences simultaneously may also underestimate the impact of penetrative sexual assaults as such assaults are likely more severe and consequential than unwanted kissing or touching. Furthermore, unwanted sexual experiences may be either consensual or non-consensual as both men and women may have ambiguous feelings towards sexual activity (Muehlenhard & Peterson, 2005).

Individuals may have a desire to engage in sexual activity, but refuse sexual activity because they feel they are not ready or fear the consequences. Conversely, someone may not want to engage in sexual activity, but consents because they desire intimacy or wish to please their partner. Consequently, Muehlenhard and Peterson emphasize the importance in distinguishing ‘wanting’ and ‘consent’ as they are not synonymous and may perpetuate rape myths and self-blame. Furthermore, unwanted sexual activity may in itself be problematic; research with women suggests that women may report not wanting sex, but also indicate providing no resistance or objection, in which case the perpetrator may not know that sex is unwanted (O'Sullivan, Harrison, Morrell, Monroe-wise, & Kubeka, 2011).

While some studies specifically ask about sexual experiences that are “against your will” (Buzi et al., 2003; Raj et al., 2000) or “without your consent” (Choudhary et al., 2010) others are less clear about whether or not an act was volitional. The World Health Organization defines sexual coercion as any sex that is acquired (or attempted)

through the use of force, regardless of one's gender, which may come in many forms including coercion involving psychological, physical, and verbal force (Krug et al., 2002; Heise, Moore, Toubia, 1995). This definition would suggest that questions that include the use of force or coercive tactics such as threats and blackmail is sufficient to conclude that any sexual activity that occurred was coercive. This approach is frequently used in research in both the United States and South Africa (Choudhary et al., 2008; Nduna & Jewkes, 2013). However, measures that only ask about unwanted sexual experiences without including mechanisms of force or consent in the question may capture sexual activity that is both coercive and non-coercive.

Youth's Perceptions of Sexual Coercion

Cultural gender norms may contribute to how sexual coercion is experienced among male youth and may dictate what experiences are reported as non-consensual (Cáceres, 2005). This is particularly likely in South Africa, where masculine identities are centered on sexual prowess and lure. In research with young men in four sub-Saharan African countries, Moore and colleagues (Moore, Madise, & Awusabo-Asare, 2012) found a strong belief that sexual intercourse was obligatory in romantic relationships and may prevent youth from reporting these instances as non-consensual, but may still report them as unwanted. Conversely, masculine ideology may also contribute to boys reporting that they were 'forced to have sex' in situations that do not fit the definition of sexual violence. Some boys also indicated that they were 'forced' when girls dressed or acted provocatively in front of them (wearing revealing clothing, etc) or when their girlfriends took their clothes off in front of them (Moore et al., 2012), which likely

reflects the stereotype that male sexual urges are uncontrollable and is in concordance with victim blaming in some cases of sexual violence against women.

Consequences of Sexual Violence towards Boys

Despite the large variation in definitions and interpretations of ‘forced sex’ by youth, a growing body of literature suggests that sexual violence towards boys contributes to a range of negative consequences including depression, anxiety, suicidal thoughts, risky sexual behavior, problematic drinking, and poor life satisfaction (Buzi et al., 2003; Choudhary et al., 2008; Choudhary et al., 2012; Nayak et al., 2012; Raj et al., 2000). Although most of this research has been conducted with men in the United States, similar results have been found with South African (Nduna & Jewkes, 2013) and Nigerian youth (Olley, 2008). In a study of depression in late adolescent and young adult South African’s in the Eastern Cape, Nduna and Jewkes found that depression in males was associated with sexual coercion perpetrated by a female, having sex with an older partner (5+ years), and relationship conflict. Although these studies provide important insight into potential consequences, it is unclear if the associations noted are due to differences that were present before the youth experienced sexual violence and may be risk factors for sexual violence rather than consequences as all of the studies were cross-sectional. Among Nigerian boys 15 to 20 years old, sexual violence in childhood (before age 15) was associated with recent sexual risk behaviors. Because of the age limits of the study and the definition of sexual violence, this study provides additional support to sexual violence preceding sexual risk behaviors. However, it is also possible that the boys were engaging in sexual risk behaviors or were at risk for sexual risk behaviors before experiencing sexual violence.

Context of Sexual Development and Sexual Violence in South Africa

There is little dispute that South African adolescent's exposure to violence in schools, home, and in their community has a negative impact on their lives and development. These experiences influence adolescent's perceptions of normative behavior and how they justify their own behavior (Jewkes & Morrell, 2012; Ragnarsson, Onya, Thorson, Ekstrom, & Aarø, 2008). Manipulation and violence in relationships are viewed as normative, which is reinforced by their own experiences, the messages of their partners, and their community. In some cases, violence may be seen as a sign of love (Jewkes & Morrell, 2012). Adolescents who observe relationships that reinforce violence and gender stereotypes are more likely to view violence and inequality as normal (Jewkes & Morrell, 2012; Ragnarsson et al., 2008).

Social norms regarding masculinity that encourage male toughness and dominance may perpetuate sexual violence and diminish communication about sexual matters (Jejeebhoy and Bott, 2003). South African norms on masculinity prescribe a strong sexual appetite, generating pressure for boys to engage in sexual intercourse regardless of their will (Petersen, Bhana, & McKay, 2005; Selikow, Ahmed, Flisher, Mathews, & Mukoma, 2009). Boys who are not sexually active, have few sexual partners, or use condoms may be teased and ostracized by peers. Although boys experience tremendous pressure from their male peers to engage in sexual intercourse, girls may threaten to expose boy's lack of desire for sex to their peers in order to force boys into sexual relationships (Selikow et al., 2009).

Although discussions of sexuality in South Africa emphasize that boys primarily hold the power in relationship (Ragnarsson et al., 2008), the high prevalence of forced

sex among adolescent boys discussed earlier suggests that not all boys hold all the power in relationships. Studies of coercive relationships among girls often suggest that these coercive relationships involve older male partners (Jewkes & Morrell, 2012), suggesting that early adolescent boys are not the romantic partners in these relationships.

Nonetheless, the 2008 nationally representative Youth Risk Behavior Survey (Reddy et al., 2010) suggests that 22% of boys in the Western Cape have sexual intercourse before they are 14 years old, compared to only 5% of girls. It is unclear who the sexual partners are of early adolescent boys or how these early sexual experiences shape boys' expectations for future sexual encounters; however, the high rates of sexual coercion among early adolescent boys (Reddy et al.) suggests that many of these early sexual experiences are coercive.

Interventions to Reduce Sexual Violence

The 2008 SA Youth Risk and Behavior survey suggests that programs aimed to reduce sexual risk behavior need to consider the context in which sexual behaviors occur, including coerced sexual encounters (Reddy et al., 2010). This survey highlights the prevalence of violence in young people's lives and suggests the need for programs that promote skills for dealing with conflict and dangerous situations. However, promoting a more positive environment in schools may be an alternative or complementary approach for dealing with violence, particularly violence within schools.

De Koker and colleagues (2013) conducted a review of six interventions aimed to reduce intimate partner violence that were evaluated with a randomized control trial design. The review suggested that the most effective programs were those that were more comprehensive, targeted multiple settings and important adults in youths' environment

(i.e. teachers, parents, etc.). Although not all sexual violence is perpetrated by an intimate partner, at least one of the interventions included in the review had a positive impact on levels of sexual harassment and sexual violence perpetrated within schools (Taylor et al., 2013). This intervention included both a school environment and classroom-based intervention. The school environment intervention aimed to create awareness of zones within the school that were particularly prone to violence and to increase safety within the school. The school environment component was found to have a positive effect on sexual harassment and violence within the school independent of the classroom-based intervention and also enhanced the classroom-based intervention in schools that received both interventions.

Interventions targeting sexual risk or risk behaviors more broadly may be equally or even more effective at addressing sexual violence than programs focusing specifically on sexual violence or intimate partner violence. Several of the interventions included in the review by De Koker and colleagues (2013) also addressed healthy relationships skills, decision making, and other content typical of sexual risk reduction programs, and these programs were most likely to be effective. These findings suggest that components of sexual risk reduction programs are likely important in addressing sexual violence. The Institute of Medicine suggests interventions that target multiple problem behaviors and their risk factors may be more successful than targeting single problem behaviors ("Using a Developmental Framework," 2009), in part because many of the behaviors that interventions target share common risk factors and often co-occur. Programs that target risk factors of sexual victimization, such as substance use and alcohol may be more effective than solely focusing on sexual victimization (Daigle, 2009; Testa, Hoffman, &

Livingston, 2010) as reductions in substance use and alcohol use may reduce youth's likelihood of being in a context that puts youth at risk or associating with potential perpetrators of violence.

HealthWise South Africa: Lifeskills for Young Adults

One such comprehensive intervention evaluated in South Africa is the HealthWise South Africa program (HealthWise). HealthWise is a school-based intervention that aims to reduce substance use and sexual risk behavior and promote positive use of leisure time among youth (Caldwell et al., 2004; Smith et al., 2008). The intervention's curriculum consists of 12 lessons implemented during grade 8 and six lessons in grade 9.

Boys who were virgins at the beginning of grade 8 were less likely to initiate sexual intercourse by grade 10 if they were in the HealthWise group compared to those in the control group (Smith et al., 2008). However, the reverse was found for girls, such that there was an increase in risk of initiating sexual intercourse for those receiving HealthWise. However, sexually active youth participating in HealthWise were less likely to report multiple risky sexual behaviors (i.e., non-condom use, alcohol and/or marijuana use at sex, and sex with a stranger) the last time they had sex compared to youth in the control group (Tibbits, Smith, Caldwell, & Flisher, 2011). HealthWise also had a positive effect on several mediators of risky sexual behavior including perceptions of condom availability (Smith et al., 2008), condom use self-efficacy (Coffman, Smith, Flisher, & Caldwell, 2011), and substance use (Smith et al., 2008; Tibbits et al., 2011). Furthermore, research using data from the study has furthered our understanding of sexual behavior and coercion in South Africa.

Patrick and colleagues (Patrick, Palen, Caldwell, Gleeson, Smith, & Wegner, 2010) conducted focus groups with youth participating in the HealthWise program to better understand youth's motives for engaging in sexual intercourse. Youth were specifically asked to focus on reasons why youth 'choose' to have sex, yet many youth identified coercion as a common reason for sexual intercourse. The role of coercion in adolescent's sexual lives was again found in a study of sexual agency and sexual coercion among sexually active youth in the control group for the HealthWise efficacy trial (Miller, Smith, Coffman, Mathews, & Wegner, *accepted*). Over the course of two years, 10% of girls and 25% of boys reported that they were forced to have sex the last time they had sex at at least one observation. Although the effect of HealthWise on sexual coercion have not been directly examined, research suggests that several of the mediators effected by HealthWise are associated with sexual coercion including substance use (Testa, Livingston, Vanzile-Tamsen, & Frone, 2003), substance use at last sex, and condom use self-efficacy (Cox, 2011).

A second HealthWise study (HWstudy2) provides a unique opportunity to further explore sexual coercion among South African youth. Recognizing the prevalence of sexual coercion among youth in South Africa, items were included in the HWstudy2 survey that allows a more nuanced exploration of sexual coercion. However, the primary goal of the HWstudy2 is to evaluate factors that may improve the fidelity and quality of implementation when the HealthWise is taken to scale and implemented in 56 schools in the Western Cape (Figure 1-1).

As part of the current HealthWise project, schools were randomly assigned to receive components aimed at enhancing the implementation of the HealthWise

curriculum. One of these components, *Enhanced School Environment (ESE)*, aimed to promote HealthWise concepts throughout the school and improve students overall awareness of HealthWise topics. Posters and a notice board were used to bring awareness to HealthWise topics and provide information on community resources. This component also included providing additional activities within the school (ex. Physical education, skill development opportunities, risk reduction, performance arts, workshops focusing on community issues), a program during winter break to promote healthy use of leisure time, and the recruitment of other existing resources such as programs that promote student involvement and leadership within the school, and peer mentoring. Although schools were randomly assigned to this condition, the level of implementation varied across schools based on schools' interest, and levels of organization within the school.

HealthWise Survey Design: Planned Missingness

Missing data is a common problem in developmental and intervention research and can take many forms. Data may be missing on certain items for a participant, *item nonresponse*, such as when a participant skipping items or chooses a response option such as 'not response', or 'I don't know', or complete data can be missing for the individual, *unit nonresponse*. In longitudinal research, *wave nonresponse* and *attrition* are common sources of missing data in which a participant does not provide any data for certain waves. In *wave nonresponse* missing data, participants may be absent for data collection at one or more waves, but then provides data at a later wave. *Attrition* is when a participant drops out of a study and does not return at a later wave. In addition to the common causes of missing data, HealthWise has missing data that results from a three-form design for the student surveys (Graham, Taylor, Olchowski, & Cumsille, 2006).

A three form design is a planned missingness measurement design that enables researchers to include more items in a survey than would be feasible with a single form design (i.e., a survey where all participants receive all of the same items) while reducing the overall response burden on individual participants (Graham, Taylor, Olchowski, & Cumsille, 2006). The HealthWise survey was comprised of one base set (X) that was given to all students, and three additional sets (A, B, and C). In addition to set X, each student was randomly assigned two of the three additional sets. Random assignment insured that data that was missing as a result of the survey design was random and not related to any of the study variables (observed or missing). Given the study design, a discussion on missing data procedures is warranted. Thankfully, modern statistical methodologies allow researchers to manage missing data in a manner that reduces bias using information from the data to impute values for the missing data.

Review of Missing Data Procedures

There are two main types of missing data: *missing at random* (MAR) or *missing not at random* (MNAR). Data is considered to be MAR if the missing data is not dependent on the missing values. However, MAR can be dependent on the observed data. A special case of MCAR, is *missing completely at random*. Data is considered to be MCAR if the missingness is not related to either the observed values or the unobserved missing values (Graham, Taylor, Olchowski, & Cumsille, 2006; Schafer & Graham, 2002). For example, the three form design described above is an example of data that is MCAR. Participants are randomly assigned to two of the three forms. In other words, about a third of participants will be missing data on either set A, B, or C, but whether or not data is missing on each of these sets is unrelated to both the observed and missing

variables. The second type of missingness, MNAR, is when the probability that the data is missing is dependent on the unobserved missing data and cannot be completely accounted for with observed data.

Case deletion (e.g., *listwise deletion* or *complete-case analysis*) is often the default method of handling missing data in statistical software, and bases analyses on a subset of nonmissing data. In this approach entire cases may be deleted if any of the data of interest is missing (as in complete-case analysis) or analyses may be based on different subsets for each parameter being estimated as in *pairwise deletion*. These approaches to missing data analysis are only appropriate to use when data is MCAR (Schafer & Graham, 2002). However, when missing data is not MCAR, case deletion approaches introduce bias as the results based on the subpopulation may not be representative of the full sample. Furthermore, even if a small amount of data is missing for each item, when researchers exclude all cases missing on any of the items they risk excluding a large portion of the data. This may result in a far smaller sample size and reduced power than if they were able to use all of the cases (Schafer & Graham).

Another approach to handling missing data is to impute the missing data by replacing the missing data with the mean value from the observed data for that item. This approach uses information from the data to inform the value of the missing data, but alters the variable's distribution and reduces variances, which introduces bias (Schafer & Graham, 2002). However, other approaches for using information from the data to inform us of a probable value for the missing data can maintain the variability in the data and decrease the bias that results from case deletion.

The studies presented in Chapters 3 and 4 (studies 2 and 3) use multiple imputation to estimate values for missing data. Unlike mean substitution imputation, multiple imputation randomly draws values for missing data from the possible distribution of the variable given participants' responses to the observed items in the data. This process is repeated multiple times in order to account for the uncertainty that is present with missing data, resulting in m data sets, where m is the number of imputations conducted. The MIANALYZE procedure in SAS Software 9.4 (SAS Institute Inc., 2012) can be used to combine the parameter estimates and standard errors from multiple imputed datasets for many commonly used statistical procedures.

Dissertation Aims

This dissertation aims to address current gaps in the research on sexual violence by developing a deeper understanding of sexual violence towards boys in South Africa and identifying potential approaches to addressing sexual violence towards youth. The studies use a large, longitudinal dataset that provides an in-depth examination of sexual violence in order to expand the literature on sexual violence which has, to this point, been limited to cross-sectional research from broad surveys that do not go beyond the general prevalence of sexual violence or small sample sizes that lack the power to explore the complexity of sexual violence towards boys. The timing of each measurement occasion and sample size is provided in Figure 1-1.

Study 1. Data from 252 South African adolescent boys who reported experiencing sexual coercion at the first wave of the HealthWise study (i.e. the beginning of 8th grade) are used to examine the context of boys' most recent experience of sexual coercion. All youth reporting sexual coercion were asked a series of follow up questions

about the last time they were sexually coerced, including tactics used by the perpetrator, and characteristics of the perpetrator (i.e. gender, relationship, and length of acquaintance). Logistic regression analyses assess the role of perpetrator gender and age on the likelihood of youth reporting each of the nine perpetrator tactics at boys' last experience of sexual coercion. A gender by age interaction is also examined to assess if the effect of perpetrator gender on tactics used differs depending on the age of the perpetrator.

Study 2. Study 2 uses three waves of self-report data from over 4,000 boys participating in the HealthWise project to examine the consequences of sexual coercion among South African boys. Although it is not possible to determine if sexual coercion *causes* any differences in attitudes and behaviors examined in this study, propensity score estimates is used to reduce bias that is inherent in observational research and strengthen confidence in the results. Study 2 uses linear regression, and mediation models to address the following questions:

1. Are youth who experience sexual coercion more likely to engage in risky sexual behaviors, and sexually aggressive behaviors than those who do not experience sexual coercion?
2. Are youth who experience sexual coercion more likely to perceive more sexual behavior and sexual victimization among peers and have riskier sexual beliefs and attitudes compared to youth who do not experience sexual coercion?

3. Is the effect of sexual coercion on risky sexual behavior and sexual aggression mediated by the effect of sexual coercion on boy's perceptions of norms and sexual attitudes and beliefs?

Study 3. Three waves of self-report data from students are aggregated at the school-level to assess the impact of the Enhanced School Environment (ESE) component on school's sexual climate and overall prevalence of sexual coercion across 56 schools.

Mediation models will be used to address the following research questions:

1. Do schools that receive ESE have a lower prevalence of sexual coercion compared to schools not receiving ESE?
2. Do schools receiving ESE have a more positive school sexual climate, as measured by school level behavioral and attitudinal factors, compared to schools that did not receive ESE?
3. Is the effect of ESE on sexual coercion mediated by the effect of ESE on the school's sexual climate?

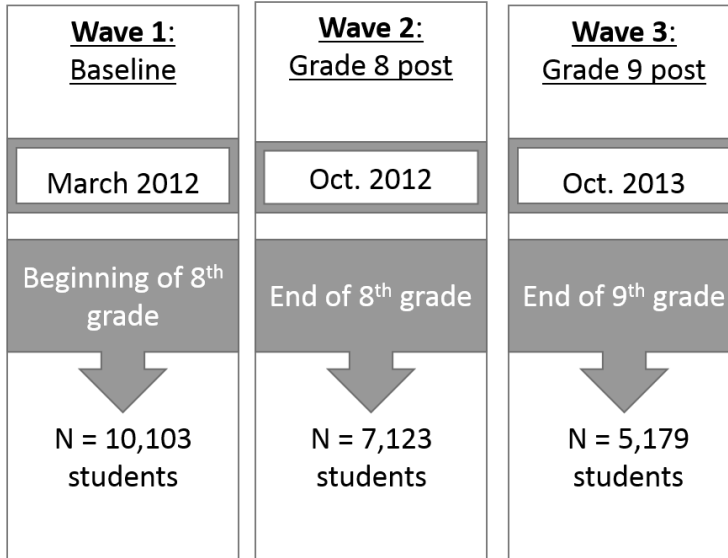


Figure 1-1. Same size and measurement occasions used for this dissertation.

Chapter 2

Study 1: The Role of Perpetrators' Age and Gender on Tactics used in Sexual Coercion against South African Boys

Nearly one out of every five South African youth report experiencing coerced sex by age sixteen (Andersson et al., 2012). Data from the 2008 National Youth Behavior and Risk Survey indicate that 12.3% of youth in grade 8 report having been forced to have sex when they did not want to have sex, with boys more likely to report being forced to have sex than girls (16.7% v. 7.8%; Reddy et al., 2010). Nonetheless research on sexual coercion focuses primarily on women, leaving the phenomenon of sexual coercion against boys largely unexplored and not well understood. This gap in the research may be in part due to the belief that sexual coercion either does not happen to boys or is qualitatively different from coercion against girls (Moore, Madise, & Awusabo-Asare, 2012; Sikweyiya & Jewkes, 2009). For example, researchers have suggested that sexual coercion towards boys may not be as severe a problem for boys as girls (Sikweyiya & Jewkes, 2009), particularly when the perpetrator is a female. However, little is known about how boys' experiences of sexual coercion vary based on the gender and age characteristics of the perpetrator. Consequently, it is important to understand how sexual coercion towards boys varies across different characteristics of the perpetrator.

Who are the perpetrators?

In a national survey of sexual coercion towards boys, Andersson and Ho-Foster (2008) found that the majority of perpetrators of sexual coercion towards boys were adults. Adults who were not teachers or family were most common (28%), followed by teachers (20%) and adult family members (18%). Peers accounted for 18% of

perpetrators and nearly a quarter of youth reported more than one type of perpetrator. Female perpetrators were most common, particularly in urban areas, but many youth reported both male and female perpetrators, suggesting that many victims of sexual coercion are re-victimized by other perpetrators. However, this study did not indicate if there was a difference in gender between adult and peer perpetrators, nor if there was a difference in the tactics used by perpetrators. Another nationally representative survey of South African youth (ages 12-22) found that the majority of sexual assaults (including any sexual behavior without the youth's consent ranging from kissing to intercourse, or forcing the youth to touch the perpetrator in a sexual way) were perpetrated by someone the victim knew and nearly a quarter of respondents reported that the event occurred within their home (Leoschut, 2009). However, it is not evident from this study if these findings are similar for both girls and boys as the data presented were combined for girls and boys.

Gender of Perpetrator

Some researchers have suggested that experiences of sexual coercion by a female perpetrator may be qualitatively different from coercion from a male perpetrator as sexual coercion of boys by adult females may take the form of temptation and have more mild effects than coercion from an adult male (Moore et al., 2012; Sikweyiya & Jewkes, 2009). In their interviews, Sikweyiya and Jewkes found some boys reported being flattered by the advances of older women, while others felt guilty or embarrassed. In many of the narratives, boys were pressured into having sex by older adolescent girls or substantially older women, and reported being curious or interested in sex in some ways, but not consenting and not wanting it in other ways. Conversely, boys reporting male

perpetrators were more likely to report feelings of anger and a desire for revenge (Sikweyiya & Jewkes, 2009). However, these reflections may be influenced by men's perceptions of cultural norms that suggest that men should always desire sex from a woman. Furthermore, the qualitative nature of this research limits our ability to understand the scope of the problem.

Nonetheless, Moore and colleague's (2012) research in sub-Saharan Africa found that young men who reported unwanted sex often gave reasons for having sex that were contrary to typical notions of sexual coercion, with nearly half of those reporting that their first sex was "not willing at all" reporting that they had sex because it felt natural or they felt like it, while a fifth reported that they had sex because of pressure from their friends. This study focused on unwanted sex, which may or may not have been consensual as research shows that both men and women often have ambiguous feelings towards sex (Muehlenhard & Peterson, 2005). Furthermore, the study focused primarily on older adolescents and young adults, which may not be representative of the experiences of early adolescent boys.

Age of perpetrator

Adult perpetrators may use different tactics than younger perpetrators due to their relative position, size, and relationship to the victim. Both male and female perpetrators who are older are likely to be physically larger than early adolescent males, which may allow adult perpetrators to physically overpower their victims. In economically poor regions, older men and women may force boys into sexual relationships in exchange for protection, money, and/or shelter (Heise, Moore, & Toubia, 1995; Njue, Askew, & Chege, 2005). South African values of respect for elders and obedience may also

facilitate sexual coercion through more subtle tactics. In ethnographies, South African youth frequently report difficulties in refusing and disobeying those older than them (Jewkes et al., 2005; Sikweyiya & Jewkes, 2009). Boys may be asked to assist someone in a task and end up alone with the perpetrator and unable to escape. Youth often report great discomfort in disagreeing with older men and women, and may lead youth to feel obligated to submit to sex out of respect (Sikweyiya & Jewkes, 2009).

Power discrepancies between the perpetrator and victim likely also contribute to the tactics used by the perpetrator and how sexual coercion is experienced by youth. How power discrepancies manifest likely depends on the relationship of the perpetrator to the victim, as the perpetrator may be a teacher, family member, romantic partner, or some other adult. Furthermore, family members may be either adults, such as parents, aunts, and uncles, or similar in age (such as siblings or cousins), thus the relative size and power dynamics associated with the event may vary substantially. For example, sexual coercion from educators may be particularly problematic as education is critical for improving one's opportunities in life and reducing poverty. Educators have power over adolescents' education opportunities, potentially constraining youth's access to education and reducing youth's feelings of safety within their schools (Prinsloo, 2006). Sexual interactions between educators and learners may be transactional (see Prinsloo, 2006), particularly in areas of high poverty. Educators may also offer higher marks, or threaten learners with failure or corporal punishment (DSD, DWCPD, & UNICEF, 2012).

Although some research indicates that male youth typically seek younger partners (Ragnarsson, Onya, Thorson, Ekström, & Aarø, 2008), other research suggests that boys may also be drawn to older partners (Frank, Esterhuizen, Jinabhai, Sullivan, & Taylor,

2008). Older partners may offer material gifts, access to a car, and cash (Kaufman & Stavrou, 2004), which may be especially appealing to boys living in poverty. However, receiving gifts or money may leave youth feeling obligated to engage in sex even when they do not wish to, or fearing that their partner will terminate the relationship if they do not submit. For example, Kenyan boys report being forced into sexual relationships by older males in exchange for money or shelter (Njue, Askew, & Chege, 2005). Economic conditions that lead to dependence on others for basic necessities, such as food and shelter, perpetuate sexual coercion (Heise et al., 1995). In a small study of 10th grade South African youth, 40% of boys reported receiving gifts or money for sex (Frank et al., 2008).

Although reports of forced sex were low among boys in this study, such transactions may still lead to coercive relationships in which boys do not feel they are able to refuse sex, particularly if they are dependent on the financial support of their partner as youth worried about having enough food to eat are more likely to be victims of sexual coercion (Andersson et al., 2012; Ybarra, Bull, Kiwanuka, Bangsberg, & Korchmaros, 2012). Although gift exchanging is common with both similar-aged and older partners (Kaufman & Stavrou, 2004), older partners are more likely to have the means to provide more elaborate gifts and basic necessities (i.e. food, school uniforms and supplies, etc.) that may lead youth to feel dependent on their partner.

Research with girls suggests that girls with older partners are more likely to report experiencing unwanted or coerced sex as they are less capable refusing sex or negotiating condom use because of fear that their partner will terminate the relationship or take on another partner who is willing to have sex with them (Jewkes & Morrell, 2012;

Moore, Awusabo-Asare, Madise, John-Langba, & Kumi-Kyereme, 2007). A similar phenomenon may occur when boys have older partners, who may pressure or threaten boys with terminating the relationship or not providing gifts if they do not agree to sexual acts.

Coercion from similar-aged youth, on the other hand, is less likely to involve significant power discrepancies. Rather, sexual coercion is more likely to come in the form of pressure to prove one's masculinity. Interviews conducted with young men in four sub-Saharan countries support the strong influence of peer pressure as pressure from friends' was the most commonly cited reason for unwanted sex at sexual debut (Moore et al., 2012). Research in Zambia suggests that older boys may recruit older girls to serve as 'educators' of sex for younger boys (Simpson, 2007). Though the literature does not indicate if these encounters are volitional or not, it is likely that the high level of pressure to engage in sex for boys and appear masculine may limit their ability to refuse these encounters. Such interactions may explain the high reports of peer pressure involved in sexual encounters that are reported as unwanted or coerced across sub-Saharan Africa (Moore et al., 2012). In qualitative research on gang rapes in South Africa, Wood et al. (2005) also reported on instances of both a boy and girl being forced to have sex with each other by a gang.

More often, however, pressure comes in the form of teasing and taunting from other boys or girls. Girls may coerce boys into sex by threatening to tell others that the boy did not desire to have sex (Selikow, Ahmed, Flisher, Mathews, & Mukoma, 2009). Boys' girlfriends may also pressure boys to have sex to prove their love and faithfulness or threaten to end the relationship. Such threats may have strong social implications for

boys as young men who abstain from sex may be seen as weak (Jewkes, Penn-Kekana, & Rose-Junius, 2005) and are often ostracized by peers (Selikow et al., 2009). Boys are also ridiculed for not having a girlfriend (Moore et al., 2012), as having and being able to maintain a girlfriend is a sign of one's masculinity (Ragnarsson et al., 2008). These messages may limit boys' ability or willingness to refuse sex because of fear of stigmatization. Although this research provides important insights into the context of relationships among South African youth, the qualitative nature of the research makes it difficult to discern the relative prevalence of pressure from peers and girlfriends compared to other tactics.

Male and female youth perpetrating sexual coercion in Uganda most frequently report using lies and deception to coerce someone into sex (Ybarra et al., 2012). Giving the other person alcohol or drugs or using physical force were less common, though one in ten boys and girls reported using physical force when perpetrating sexual coercion. It is unclear if similar tactics are used in South Africa or if there would be difference among adult and peer perpetrators.

Study Aims and Research Questions

Research on sexual coercion among adolescent boys in South Africa is primarily limited to qualitative research. Quantitative research has illuminated the prevalence of sexual coercion among boys (Andersson and Ho-Foster, 2008; Reddy et al., 2010), but provides little understanding of the context of sexual coercion for adolescent boys. The current study aims to address this gap in the literature by using extensive quantitative data to better understand the characteristics of coercive sexual experiences among South African youth in grade eight and how these characteristics vary across experiences with

different types of perpetrators. Specifically, we will examine if the age and gender of the perpetrator predict the tactics used by the perpetrator. Because of the exploratory nature of this study, specific hypotheses are not offered.

Methods

Participants and Procedures

In spring 2012 self-reported data were collected using netbooks from 10,103 eighth grade youth in Cape Town. Students attended one of 56 schools receiving the HealthWise curriculum as part of a translational research study. Students were given the option to complete the survey in English. Research staff was available to answer questions and assist with any technical difficulties that may arise. Passive parental consent and student assent procedures were approved by The Pennsylvania State University's, University of the Western Cape's, and Western Cape Education Department's Institutional Review Boards.

For the current study, the sample was restricted to boys who provided responses for the perpetrator's age and gender questions and who were under age 20 to better capture sexual coercion during adolescence ($n = 252$). Of the 4,865 boys who completed the baseline survey, 109 did not provide a response for the sexual coercion question, and 89 were 20 years old or older. An additional 19 boys who reported sexual coercion at baseline were excluded from analyses as they did not provide information on the gender or age of their perpetrator. Boys who were excluded because of skipped items were more similar to those who reported sexual coercion than to those who did not report sexual coercion. We assessed sexual coercion by asking all learners if "anyone ever tried to make you have sex against your wishes?" Youth who responded "[y]es tried, sex did

occur” were coded as having experienced sexual coercion. About 6% of boys reported that someone made them have sex against their wishes (‘coerced sex’). These youth were then asked a series of follow up questions including how many times they were coerced in the last six months, and about tactics used by the perpetrator, and characteristics of the perpetrator (i.e. gender, nature of relationship, and length of acquaintance) “the last time this happened”.

The majority of youth reported living in a brick home, apartment or flat (57.9%) and having tap water in their home (86.9%). Approximately a third of youth reported living in either a shack (15.1%) or wendy house (15.9%). Only half of youth reported that their families had a motor car (51.2%). Youth predominantly identified as African Black (66.3%), though a substantial minority also identified as Coloured/Multiracial (19.4%), or White (12.7%). Many participants reported speaking multiple languages at home, with 65.9% reporting speaking Xhosa, 42.9% reported speaking a language other than those listed, 36.3% speak English, and 34.9% speak Afrikaans at home. Participants were between the ages of 12.3 years and 18.9 years old, with a mean age of 14.6 years old. The majority of participants (85%) were between the ages of 13 and 16.1 years old. Five percent of participants were under age 13 at baseline.

Measures

Perpetrator tactics were measured with a series of nine questions about tactics that the perpetrator used the last time someone made them have sex against their will (Table 2-1). The measure was developed for this study based on Heise and colleagues (1995) model of sexual coercion and past research on sexual coercion in African nations, as discussed in the literature review, that provides some insight into potential tactics

(Njue, Askew, & Chege, 2005; Wood, 2005). For example, youth were asked “Did he/she use physical force?”, “Did he/she drug you or get you drunk against your will?”, and “Did he/she promise you gifts or rewards?” Lastly, the item “Did he/she harass you electronically (i.e. with cell phone, mobile, internet, etc.)?” was included based on the growing influence of technology in the lives of youth and media reports on sexting and cyberbullying. Youth could endorse as many tactics as applicable (yes/no response).

Perpetrator age was determined by the relationship of the perpetrator to the youth. Youth reporting sexual coercion were asked how they knew the perpetrator. Perpetrators were coded as similar-aged if they reported that they were “learners of the same age as me”, “learner who is older than me,” or “other youth.” “Teachers,” “another adult at my school,” or “other adult” were coded as adult perpetrators. If a youth reported that their perpetrator was a “family member” then we coded the perpetrator as a peer if the perpetrator was reported to attend the same school as the youth. All other family member perpetrators were assumed to be an adult. Although there may be some errors in our designation of family member perpetrators age group, it is unlikely to have a strong impact on our results as family members accounted for a small proportion of all perpetrators.

Perpetrator gender was assessed with a single question that asked youth if the last time they were sexually coerced was “by a male or female?”

Analytic plan

A series of nine logistic regression analyses were conducted to assess the role of perpetrator gender and age on the likelihood of youth reporting each of the nine perpetrator tactics the last time they experienced coerced sex. All variables were effect

coded. A gender by age interaction was also included to test if the effect of age was different when the perpetrator was male or female. Testing multiple hypotheses simultaneously increases the probability of a significant result simply due to chance, which leads to a Type I error - rejecting the null hypothesis when in fact the null hypothesis should have been accepted. It is possible to adjust for this increase risk of Type I error, however, given that these analyses are exploratory and the first of their kind no correction is include.

Results

Six percent of boys ($n = 252$) reported that they were made to have sex against their wishes ('coerced sex'). Boys most commonly reported a perpetrator who was female (70.6%) and similar in age (77.8%, including same age learner, older learner, and other youth). Same age learners were the most frequently reported perpetrator (46.0%), followed by older learners (18.3%). Other adults in school (9.1%) and teachers (6.8%) were the most frequently reported adult perpetrators. On average, youth reported that their perpetrators used 4.8 tactics the last time they were coerced with pleading (59.9%), electronic harassment (57.4%), and promises (55.0%) being the most frequently reported perpetrator tactics (Table 2-1).

Logistic Regression Analyses

Results for the nine logistic regression analyses can be found in Table 2-2. The main effect for perpetrator's age was significant for six of the ten perpetrator tactics. Boys had greater odds of reporting that the perpetrator used physical force (OR = 2.63; 95%CI 1.40, 4.92), threatened them (OR = 1.88; 95%CI 1.02, 3.45), tricked them (OR = 1.88; 95%CI 1.02, 3.44), harassed them electronically (OR = 2.10; 95%CI 1.08, 4.09),

and that the perpetrator was drinking or using drugs (OR = 2.43; 95% CI 1.29, 4.59) when the perpetrator was an adult compared to peer perpetrators, regardless of the perpetrators gender. Boys were less likely to report that the perpetrator used alcohol or drugs when the perpetrator was female (OR = 0.48; 95% CI 0.26, 0.86); this was the only significant main effect for perpetrator gender.

A gender by age interaction was found for three tactics (blackmail, being drugged, and victim drinking/drugs) as shown in Figure 2-1. Boys who report a female adult perpetrator have greater odds of reporting that the perpetrator used blackmail to coerce them into sex. The relationship between age and being drugged differed depending on the perpetrators gender. Boys were most likely to report being drugged when the perpetrator was a female adult and least likely to report being drugged when the perpetrator was a female peer. There was no significant difference in reporting being drugged when a male perpetrator was a peer compared to when the male perpetrator was an adult. Boys reporting a female, adult perpetrator were significantly more likely to report that they had been using drugs or drinking.

Discussion

The current study addresses a gap in the research by providing insight into the context of the most recent sexual coercion experiences among adolescent boys in South Africa using an extensive quantitative dataset. Although most research focuses on girls as victims and boys as perpetrators, 6% of the boys in our sample reported experiencing sexual coercion. However, this rate is likely higher as many of the boys (78 out of 109) who refused to answer the sexual coercion item used for the current study indicated that the last time they had sex it was forced or that the only time they had sex it was when

they were forced. The in depth follow up questions asked of boys who experienced sexual coercion is unique to this dataset and provides important insights on the experiences of boys. Findings suggest that perpetrators typically use multiple coercive tactics against boys, and it is the age of the perpetrator, rather than the gender, that is most predictive of what tactics are used. Furthermore, the majority of male victims report perpetrators who are female youth. For the remaining 40% of male victims, perpetrators were fairly evenly distributed across age and gender categories.

The finding that the majority of perpetrators are female is consistent with previous research in South Africa (Andersson & Ho-Foster, 2008). Although past qualitative research does support the idea that girls may pressure boys into sex as a way to try and secure their relationships (Selikow et al., 2009), the finding that the majority of perpetrators are similar aged-females is counterintuitive. In the current study, similar-aged peers included 'other youth' and 'learners who are older than me,' thus some of the perpetrators who were female peers were in fact older than the victimized boys. There is some evidence in qualitative research that suggests girls may have a relationship with a younger male partner in order to be able to exert control over their partner in a way that they are unable to do so in their other, often concurrent, relationships with same-aged or older male partners (Jewkes & Morrell, 2012). However, the majority of female peer perpetrators were reported as 'learners of the same age as me' (64%, analyses not shown). Nearly half of the participants reported that their perpetrator was pressured by friends, suggesting that both the male and female youth may have experienced coercion at the time of the sexual encounter. Qualitative research suggests that this may occur as

part of gang violence (Wood, 2005) or in the context of using older girls to ‘educate’ a younger boy about sex (Simpson, 2007).

Furthermore, our findings do not support the idea that sexual coercion is less serious when perpetrated by females. Nearly half of boys reported that their perpetrator used physical force, or threats, regardless of their gender. Such findings suggest that programs geared towards the prevention of sexual coercion should acknowledge that both male and female youth experience sexual coercion, and use gender neutral language when discussing victims and perpetrators. This will help dispel myths that sexual coercion only happens to girls and that girls cannot be perpetrators of sexual coercion.

Though some past research found that “friends” were the most frequently reported perpetrators (Madu & Peltzer, 2001), it is unclear if study participants limited their report of ‘friends’ to school-aged peers. In contrast, Andersson and Ho-Foster (2008) found that most perpetrators of sexual coercion towards boys were adults. These differences may reflect differences in adolescent perceptions of who is and is not an adult or differences in the study design. While the current study focuses on adolescent boys’ most recent experience of sexual coercion, the study by Andersson and Ho-Foster asked about all perpetrators across boys’ lifetime, thus it is likely that boys are reflecting on both childhood sexual abuse (pre-adolescents) and sexual coercion during adolescents (which may also qualify as childhood sexual abuse depending on the age of the perpetrator). Childhood sexual abuse is more likely to be perpetrated by an adult or someone perceived as an adult (i.e. a much older adolescent).

Though much of the popular press on sexual coercion focuses on perpetration by teachers (e.g., Koyana, 2014; Madlala, 2013; Ndlovu, 2009; Seale, 2013), victimization

by a teacher does not represent the majority of sexual victimization cases. Our findings suggest a far smaller proportion of sexual coercion occurs at the hands of educators than previous studies (Jewkes, Levin, Mbananga, & Bradshaw, 2002, as cited in DSD, DWCPD, & UNICEF, 2012). This divergence in findings may be a result of the focus of the current study on male youth rather than female youth. Nonetheless, the power discrepancy in teacher-student dyads may be particularly problematic and thus, teacher perpetration remains a concern for youth. Furthermore, the majority of youth did report perpetrators who are in their schools, either as peers, other adults in the school, or teachers. Consequently, prevention efforts that aim to improve the climate within the school, including reducing sexual harassment, and improving the overall safety in the schools may strengthen efforts to prevent sexual violence among students. In a study based in the United States, Taylor and colleagues (2013) found that schools had 'hot spots' where harassment and sexual violence were more likely to occur, but that increasing the presence of school personnel in those areas (along with other intervention components) helped reduce the level of harassment and sexual violence within the school. Such an approach may be valuable in South African schools that have a high prevalence of sexual coercion.

Though participants reported that perpetrators used all the tactics that were included in the survey, some tactics were more common than others. Pleading, offering gifts or rewards, and electronic harassment were the most frequently reported tactics, while tactics involving alcohol or drugs were least common. Though alcohol and drug use are typically associated with an increased risk for sexual coercion (Testa, Livingston, Vanzile-Tamsen, & Frone, 2003), the lower prevalence of alcohol related tactics being

reported may reflect the young age of the participants in the survey. However, alcohol and drug use by the perpetrator was more common when the perpetrator was an adult.

Boys also reported that adult perpetrators were more likely to use physical force, threats, and electronic harassment. These different tactics may provide some insight into differences in the context of sexual coercion when the perpetrator is an adult compared to a similar aged peer, however, further research is needed to get a clearer understanding of how these differences translate to the boys' experiences. Physical force and threats likely reflect a greater power discrepancy, both physically and psychological, between victim and perpetrator when the perpetrator is an adult.

The finding that electronic harassment is significantly more likely when boys report an adult perpetrator is especially interesting as research on the electronic harassment related to sexual coercion is limited. It may be that adults have more access to technology, particularly in poor areas where resources are limited, and thus are able to use mobile phones and other technologies to harass the victim. More research is needed to further understand how technology is used to coerce youth. Electronic harassment may or may not include sexually explicit videos and images. For example, perpetrators may take sexually explicit images or videos of the victim without consent, may pressure victims to send explicit images, or take videos or images with consent, but then threaten to distribute the images without the victims consent. Research with Australian adult women suggest that perpetrators may use sexually explicit images to blackmail, and/or humiliate the victim, and can also be used to prevent a victim from ending an abusive relationships (Henry & Powell, 2015). Electronic harassment may also be used to bombard a victim with coercive messages and harassment even when the victim is

physically away from the perpetrator, creating an environment in which a victim is unable to escape their always 'present' perpetrator.

Limitations

Though the current study is the first to my knowledge to take an in depth look into the context of sexual coercion for South African adolescent boys using quantitative data, several limitations should be noted. First, measurement of the relative age of a perpetrator was assessed by the relationship of the perpetrator to the victim, which may lead miscategorization of some perpetrators. In particular, older learners and family members may be either adults or minors. In South Africa, it is fairly common for schools to have students who are in their early twenties as students often have to leave school to work and then return to school another year. Furthermore, while family perpetrators could be adults such as parents, aunts, or uncles, they may also be siblings or cousins. However, only a small minority of participants identified perpetrators as family members, thus this is likely to have a minimal impact on our findings.

Though majority of participants in the current study are within a small age range, 13-16.1 years old, sexual coercion may be qualitatively different depending on the age of the participant. Past research suggests that sexual coercion towards boys in South Africa is most common prior to age 16 (Andersson & Ho-Foster, 2008), which may suggest that sexual coercion among youth over age 16 may be different than coercion towards younger youth. This is particularly true when the perpetrator is female, as younger adolescents may be overpowered by a female perpetrator whereas an older adolescent boy is more likely to be larger and may be less likely to be physically forced by a perpetrator. In South Africa, the average age of sexual initiation among boys is 16.7 years

old (Pettifor et al., 2011). Thus, sexual coercion at a young age may be particularly influential on an adolescent sexual beliefs and behavior as these experiences likely proceed volitional sexual encounters. Although the current study provides a fairly large sample of a high risk group, the sample is not large enough to further analyze the data by participant's age.

Past research also suggests that some boys may interpret questions about sexual coercion in ways other than intended. For example, Moore and colleagues (2012) found that some men in other African nations report being forced to have sex when they felt they were provoked by a woman's seductive dress. Similarly, men often gave contradictory accounts about their sexual encounters reporting both that they were unwilling to have sex at the time, but that they had sex because it felt natural or they felt like it. These contradictory responses may reflect the pressure that men face to always want sex, or the idea that they must have enjoyed it or wanted it if they experienced an erection. A review of research with men in the United States suggests that men who endorse male rape myths such as these may not recognize their experience as sexual violence (Peterson et al., 2011). A similar phenomenon has been observed among female sexual assault victims (Peterson and Muehlenhard, 2004). However, boys' reports of coercive tactics in the current study, support the notion that the experiences they reported were in fact coercion.

Another limitation is that students could only report tactics that were included on the survey. Though the researches attempted to provide a comprehensive list, it is possible that other tactics were used that were not captured by the current study. Furthermore, this study was limited to one region of South Africa. Though participants

were ethnically diverse, the findings may not generalize to youth outside of the Western Cape.

Implications

Although the current study did not examine the consequences of sexual coercion, research with Ethiopian boys reported experiencing hopelessness and poor school performance subsequent to experiencing rape (Haile, Kebeta, & Kassie, 2013). Furthermore, research with female youth suggests that sexual coercion can have serious psychological and physical health consequences, though research with college-aged women in the United States suggests that these consequences may vary depending on the context of the experience (Brown, Testa, and Messman-Moore, 2009; Franklin, 2010). Thus acknowledging the experience of sexual coercion among boys and the varied contexts may help prevention programs better address sexual coercion.

Conclusion

The current study supports the need for programs and services to address sexual coercion towards boys in South Africa, including programs that attempt to suppress the belief that men should have an insatiable appetite for sex and always be ready for it (Petersen, Bhana, & McKay, 2005). Focusing solely on sexual coercion perpetrated by boys and men may reinforce these cultural norms, may stigmatize male victims, and provide justification for sexual coercion perpetrated by males.

For both male and female individuals, distinguishing consent and wantedness is critical, as studies have indicated that both men and women often have mixed feelings about having sex (Muehlenhard & Peterson, 2005). Although consequences of sexual coercion may or may not be similar for male victims, holding a double standard for what

constitutes sexual coercion, or what types of sexual coercion are problematic, is dangerous. The argument that they “wanted it” or “enjoyed it” is at the core of victim blaming tactics often used against women victims of sexual coercion (Koss et al., 1994). Such messages may promote the idea that consent does not matter, which may partially account for past research showing that youth who report sexual victimization are also more likely to report perpetrating sexual coercion (Andersson & Ho-Foster, 2008). Like with women, males sexual desire or even enjoyment of the event, does not discredit any refusal or validate consent obtained through duress.

Table 2-1.
Context of sexual coercion among adolescent male victim respondents in the last six months (n = 252).

Perpetrator type:	Total		Similar-aged Female		Similar-aged Male		Adult Female		Adult Male	
	n	%	n	within grp %	n	within grp %	n	within grp %	n	within grp %
Number of times happened in last 6 mo.										
Zero	75	29.8%	49	33.6%	14	28.0%	4	12.5%	8	33.3%
Once	87	34.5%	55	37.7%	13	26.0%	9	28.1%	10	41.7%
two or more times	90	35.7%	42	28.8%	23	46.0%	19	59.4%	6	25.0%
Tactics Used by Perpetrator										
Did he/she use physical force?	119	47.2%	59	40.4%	23	46.0%	21	65.6%	16	66.4%
Did he/she threaten you verbally?	120	47.8%	58	40.0%	26	52.0%	21	65.6%	15	62.5%
Did he/she blackmail you?	96	38.3%	45	31.0%	22	44.0%	19	59.4%	10	41.7%
Did he/she pleaded until you gave in?	151	59.9%	82	56.2%	33	66.0%	22	68.7%	14	58.3%
Did he/she trick you?	113	45.2%	60	41.7%	21	42.0%	19	59.4%	13	54.2%
Did he/she promise you gifts or rewards?	138	55.0%	74	51.0%	28	56.0%	19	59.4%	17	70.8%
Was he/she pressured by their friends?	111	44.1%	54	37.0%	27	54.0%	17	53.1%	13	54.2%
Did he/she drug you or get you drunk against your will?	84	33.6%	31	21.4%	22	44.9%	19	59.4%	12	50.0%
Did he/she harassed you electronically (ie. With cell phone, mobile, internet, etc.)?	143	57.4%	72	49.3%	32	65.3%	22	73.3%	17	70.8%
Had this person been drinking or using drugs?	70	27.8%	28	19.2%	17	34.0%	12	37.5%	13	54.2%
Had you been drinking or using drugs?	74	29.5%	31	21.4%	19	38.0%	16	50.0%	8	33.3%
Attend same high school	112	45.0%	56	38.9%	21	42.9%	21	65.6%	14	58.3%
Mean number of tactics reported (sd)	4.84 (2.82)		4.07 (2.59)		5.40 (2.56)		6.47 (3.02)		6.17 (2.88)	

Table 2-2.

Log odds (SD) of reporting a perpetrator tactic given the perpetrator's age and gender (n = 252).

	Physical force	Verbally threaten	Blackmail	Pleaded until you gave in	Trick you	Promised gifts or rewards	Perpetrator was pressured by friends	Drugged you or got you drunk against your will	Harassed you electronic- ally	Perpetrator using drugs/ drinking	Victim using drugs/ drinking
Intercept	0.20 (0.23)	-0.03 (0.16)	-0.25 (0.16)	0.50** (0.16)	-0.03 (0.16)	0.39* (0.16)	-0.02 (0.16)	-0.28 (0.16)	0.62*** (0.18)	0.61*** (0.17)	-0.62 *** (0.17)
Perpetrator's age	0.48** (0.16)	0.31* (0.15)	0.27 (0.16)	0.10 (0.16)	0.31* (0.16)	0.23 (0.16)	0.20 (0.15)	0.47** (0.16)	0.37* (0.17)	0.44** (0.16)	0.27 (0.17)
Perpetrator's gender	-0.09 (0.40)	0.02 (0.14)	0.04 (0.16)	-0.09 (0.14)	0.02 (0.14)	-0.14 (0.14)	-0.26 (0.14)	-0.17 (0.16)	-0.24 (0.15)	-0.37* (0.15)	-0.03 (0.17)
Perpetrator age*gender interaction†	--	--	0.32* (0.16)	--	--	--	--	0.37* (0.16)	--	--	0.38* (0.17)

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

†Note: Interaction terms are only included for those analyses for which the interaction was significant. When the interaction was not significant, the model without the interaction is presented.

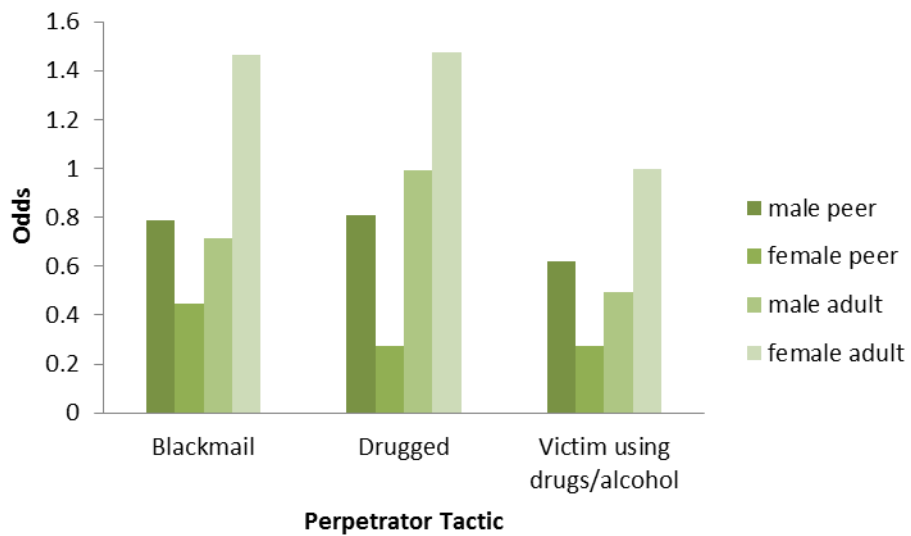


Figure 2-1. Significant gender by age interactions were found for three perpetrator tactics: blackmail, drugged, and victim drinking/using drugs. All three of these tactics were most likely to be reported when a female adult perpetrator was reported and least likely to be reported when a same-aged perpetrator was reported.

Chapter 3

Study 2: Understanding the Impact of Sexual Coercion on Adolescent Boys' Sexual Behavior, Attitudes, and Norms using a Causal Inference Framework

The negative consequences of sexual coercion towards girls has been well documented (Jewkes, Dunkle, Nduna, & Shai, 2010; Norman et al., 2010; Ullman, Filipas, Townsend, & Starzynski, 2006; Upchurch & Kusunoki, 2004); however, less is known about the consequences of sexual coercion towards adolescent boys. This disparity in research is especially concerning in South Africa, where national reports suggest a high prevalence of sexual coercion reported by South African boys (Andersson et al., 2012; Reddy et al., 2010). This gap in research may in part be due to a belief that boys cannot experience sexual coercion or that the consequences are less severe (Moore, Madise, & Awusabo-Asare, 2012; Sikweyiya & Jewkes, 2009).

Influence of Sexual Coercion on Sexual Behavior

Researchers disagree on the degree to which sexual coercion may have negative consequences for boys. While some studies have suggested negative consequences of sexual coercion similar to those experienced by women (Jejeebhoy & Bolt, 2003; Krug, Dahlberg, Mercy, Zwi, & Lozano, 2002) others have suggested that consequences of sexual coercion for male victims may be different and/or less severe than those experienced by female victims (Moore, Madise, & Awusabo-Asare, 2012; Sikweyiya & Jewkes, 2009). A study by Raj and colleagues (2000) offered a third perspective, finding that the impact of sexual violence on sexual risk behavior may be greater for boys than girls. These differing positions may be partially due to differences in how studies define

sexual coercion (Moore et al., 2012), low power due to small sample sizes of sexually coerced boys (Buzi et al., 2003), and dominance of cross-sectional research in the field.

Despite these disagreements, research suggests an association between sexual coercion and future sexual behavior among males, though our ability to assess the direction of the effect is limited as most research is cross-sectional. Research available from South Africa (Andersson & Ho-Foster, 2008; Andersson et al., 2004; Nduna & Jewkes, 2013) and other African nations (Njue, Askew, & Chege, 2005; Olley, 2008) suggest that boys who report experiencing sexual coercion are also more likely to report depression, (Nduna & Jewkes), risky sexual behavior (Olley), more supportive views of sexual violence (Andersson et al.), and sexual aggression (Andersson & Ho-Foster; Njue, Askew, & Chege). However, these studies were all cross-sectional, which limits our ability to draw causal conclusions from the findings. It is possible that youth reporting sexual coercion were already prone to depression and engaging in risky sexual behaviors prior to experiencing sexual coercion. Longitudinal research is needed to help disentangle these associations and understand the role of sexual coercion on boy's sexual development. Furthermore, it is unclear how sexual coercion may influence future sexual behavior.

Influence of Sexual Coercion on Attitudes and Norms

Theories of behavior such as the Theory of Planned Behavior (Ajzen, 1991) and Social Learning Theory (Bandura, 1977) suggest that attitudes, subjective norms or normative perception, and perceived control/self-efficacy are strong influences on future behavior. Sexual risk research supports the importance of these factors showing that youth with risky attitudes, low sexual self-efficacy, and higher perceived norms of peer

sexual behavior are associated with more risky behavior (for review, see Protogerou, Flisher, Aaro, & Mathews, 2012). However, less is known about how past experiences may influence attitudes, norms, and self-efficacy.

Social learning theory suggests that individuals' beliefs and attitudes are learned from their own experiences, vicarious experiences, and messages that they receive from those around them (Bandura, 1977). Furthermore, Bandura suggests that more salient experiences have a stronger influence on an individual's beliefs, attitudes, and development of self-efficacy than less salient experiences (Bandura, 1982). Consequently, experiences of sexual coercion during adolescence may be particularly influential on adolescents' sexual beliefs, norm perceptions, self-efficacy and behaviors as adolescence is a critical period for sexual development (Tolman & McClelland, 2011). Physically adolescents are becoming sexually mature and experiencing changes in sexual hormones associated with sexual desire and arousal. There is also an increased social pressure to develop romantic relationships (Ragnarsson et al., 2008). In a study of Nicaraguan youth, boys who reported a sexual assault in adolescence (after age 12) perceived the experience to have a greater impact on them than youth who reported sexual assault prior to adolescence (Olsson et al., 2000). The increased salience of sexual development during adolescence may contribute to how sexual coercion influences an adolescent.

Stern and Mashale (2011) highlighted the influence of South African men's first sexual experiences during adolescence on men's development of sexuality and the later expression of their sexuality. In this qualitative study, the young men reported feeling vulnerable and having perceptions of sexuality and women that did not conform to

stereotypes. However, as men got older they adopted more stereotypical approaches to sexuality as a means of protecting themselves from the vulnerabilities of emotionally intimate relationships by being distant and having multiple partners (Stern & Mashale, 2011). These studies suggest that early sexual experiences likely influence adolescents' sexual beliefs, particularly about how men and women are expected to act within sexual relationships.

Although past research has not examined the effect of sexual coercion on boys perceived norms, coercion experiences in early adolescence may socialize adolescents to believe that sexual coercion, and sexual activity more broadly, are more normative among their peers than they would have believed had they not been coerced. Past research has shown that both personal experiences and vicarious experiences (i.e. witnessing domestic violence) are associated with both attitudes about violence and being involved in subsequent violence. For example, boys who witness violence in the home and who experience sexual violence as a child are more likely to both be victims of violence and perpetrate violence (Wolfe, Scott, Wekerle, & Pittman, 2001). It may be that these experiences socialize youth to believing that these behaviors are normative or acceptable. This idea is supported by research that shows that boys who report having been forced to have sex are also more likely to condone intimate partner violence and accept rape myths (Andersson et al., 2004).

Research shows that individuals who have experienced sexual coercion often report lower self-efficacy in sexual situations, including confidence in their ability to refuse sex or use contraception (Sayles et al. 2006). Self-efficacy reflects how confident a person is in their ability to do something (Bandura, 1977, 1982), and is a key mechanism

to exerting control in one's life as such beliefs shape people's expectations for potential outcomes from different behaviors and decisions (Bandura, 2006). Though low self-efficacy is likely a risk factor for sexual coercion (Miller et al., *in press*), experiences of sexual coercion may also reduce one's sexual situation self-efficacy. Social learning theory suggests that the development of self-efficacy is influenced by individual's experiences, or enactive attainments (Bandura, 1982).

Individuals who are successful at enacting a skill will reinforce and strengthen one's self-efficacy, whereas unsuccessful attempts at the same skill will lower their self-efficacy. Consequently, sexual coercive experiences will likely lower boys' sexual situation self-efficacy as coercive experiences are inherently place individuals in situations in which they have little control. This effect is reflected in qualitative research with women who experiences sexual abuse during childhood and adolescents who report that they learned through these experiences that they do not have sexual "control or right over their own bodies" (Ganju, 2004, p. 3). Likewise, Canadian girls who experienced severe sexual coercion were less likely to report high self-efficacy to communicate about sexuality, control their sexual activity, and control contraceptive use compared to girls who did not experience sexual coercion (Hovsepian, Blais, Manseau, Otis, & Girard, 2010). The negative impact on sexual situation self-efficacy are likely strongest when they occur early in one's life, as these experiences will hold more weight in an individual's assessment of their self-efficacy than it would for someone who had more personal experiences in which they felt they had control of their sexual situation (Bandura).

Accounting for Confounding Variables

Although the author is unaware of existing longitudinal research on the consequences of sexual coercion towards South African boys, one of the major limitations of observational research is that the variable or event of interest is likely confounded with baseline characteristics (Austin, 2011). For example, youth who experience and do not experience sexual coercion may be systematically different as youth experiencing coercion are more likely to have baseline characteristics that put them at risk for sexual coercion (Table 3-1). For example, as most sexual violence occurs in the context of a relationship (Krug et al., 2002) and being in a relationship provides more opportunities for engaging in sexual behavior, a participant in relationship is more likely to experience sexual coercion and engage in more sexual behavior and risky sexual behavior than someone who is not in a relationship. Consequently, examining consequences of sexual coercion without accounting for these pre-existing differences makes it difficult to determine if the findings are a result of sexual coercion or pre-existing differences.

The typical approach of controlling for a few potential confounders within a regression model provides some adjustment for these confounders; however, controlling for all hypothesized confounders using this approach would substantially reduce power. The gold standard for making a causal inference is the randomized control trial as this approach allows researchers to assume that the control and experimental groups are balanced on all baseline characteristics. However, a study involving random assignment to experiences of sexual violence is not plausible, nor is it ethical. Therefore, in the current study the analyses adjust for pre-existing differences between groups using propensity score estimates. The use of propensity scores aims to mimic a randomized

study, the gold standard for making a causal inference, by balancing the sample of youth in both conditions to have a similar propensity for experiencing sexual victimization based on a set of confounders (Austin, 2011). Ideally, the propensity score is estimated using logistic regression models that include all confounding variables; that is, all variables that may influence both one's risk for experiencing sexual coercion and the outcome variables. In reality, it is impossible to be certain that all confounders are included in the propensity model. However, this approach allows us to account for more confounders than would be feasible with a traditional regression model. The use of propensity scores can reduce bias from confounders and increase confidence in the direction of the results when random assignment is not possible (Austin, 2011; Stuart, 2010). The current study aims to address the limitation of existing research by assessing the longitudinal relationship between sexual coercion and future sexual behaviors, attitudes, and norms in a large sample of South African adolescent boys, accounting for baseline differences using a propensity score model.

Study Aims and Research Question

Using propensity scores to account for baseline confounders, the current study aims to examine the longitudinal relationship between coerced sexual experiences and future sexual *behavior, attitudes, and normative* perceptions of early and mid-adolescent boys relative to boys who were not coerced to have sex. The study is limited to early and mid-adolescence as experiences of coercion during this period likely preceded volitional sexual intercourse (Andersson & Ho-Foster, 2008; Pettifor et al., 2011), and therefore may be particularly influential on adolescents' future sexual beliefs and behavior.

Hypotheses:

1. Boys who have experienced sexual coercion during the 8th grade will be more likely to engage in risky sexual behaviors, and sexually aggressive behaviors at the end of 9th grade than those who do not experience sexual coercion.
2. Boys who have experienced sexual coercion during the 8th grade will be more likely to perceive more sexual behavior and sexual victimization among peers and have riskier sexual beliefs and attitudes at the end of 8th grade compared to boys who do not experience sexual coercion.
3. The effect of sexual coercion during the 8th grade on sexual risk behavior and sexual aggression at the end of 9th grade is expected to be mediated by the effect of sexual coercion on boy's grade 8 perceptions of norms and sexual attitudes and beliefs.

Methods

Participants and Procedures

Participants were students from 56 secondary schools in Cape Town, South Africa participating in a translational research study of the life skills curriculum *HealthWise* ($N = 10,103$). Baseline data were collected at the beginning of grade 8, with follow up observations at the end of grade 8 (wave 2), and grade 9 (wave 3). The current study uses three waves of data collected between March 2012 and October 2013 using netbooks and is restricted to early and mid-adolescent boys age 16 years and younger who did not report any past sexual coercion at baseline ($n = 4,058$). Youth who did not participate in Wave 1 were not included in the analyses.

On average, boys were 14 years old and ranged from 11.6 to 16 years old. Nearly 1 in 5 boys (18.5%) reported sexual coercion in the past 6 months. The final sample (n = 1454) consisted of the 727 boys who experienced sexual coercion and their matched pairs (matching procedures described below). Baseline descriptive statistics for the matched sample can be found in *Table 3-1*. The survey was administered in the language that students felt most comfortable, English, Afrikaans, or Xhosa. Research staff, fluent in each language, was available to answer questions. The study, along with its passive parental consent and student assent procedures, was approved by the Pennsylvania State University's, University of the Western Cape's, , and Western Cape Education Department's Institutional Review Boards.

Measures

Confounders. Confounders expected to influence both sexual coercion and the mediation variables were included in the propensity score estimate (Table 3-1), these include baseline measures of all the outcome variables, sexual behavior at baseline, relationship status, partner's age, participant's age, family socioeconomic characteristics, and other potential confounders including substance use, delinquency, and school motivation. Though youth reporting sexual coercion at Wave 1 were excluded, prior reports of attempted sexual coercion were also included in the propensity model. Because the primary focus of this paper is not school and classroom effects and all the variables of interest are at the individual level, school and classroom were also treated as confounding variables and included in the propensity model.

Sexual Coercion. Three items were used to assess youth's experiences of *sexual coercion*. All youth were asked if they "ever had sex?", which was defined as "intimate

contact with someone during which the penis enters the other person.” Youth who responded “Yes, but only when I was forced without my consent” were coded as experiencing sexual coercion. Youth answering “yes, but only when I was forced without my consent” were considered to experience coercion in the last six months at the end of 8th grade if they did not report sexual coercion at the beginning of 8th grade. Youth who responded “Yes” without the stipulation of force were later asked “Thinking about the last time you had sex, were you forced to have sex?” Youth who responded “Yes” were coded as experiencing sexual coercion. Lastly, all youth were asked if “anyone ever tried to make you have sex against your wishes?” Youth who responded “[y]es tried, sex did occur” were coded as having experienced sexual coercion. For the last two items, youth were asked if these events occurred during the last six months.

Perceptions of sexual norms. Three items assessed participant’s perceptions of sexual norms within their school. Youth were asked “Out of every 100 learners your age at your school, how many do you think...” “have sex at least once a month?”, “have forced someone else to have sex?”, and “have been forced to have sex?” Eleven possible response options were offered ranging from “None of them”, “About 10 of them”, to “About 90”, or “All of them” that captured the percentage of students that the participants believed engaged in the given behavior. Items were averaged to obtain an average score of participants’ perceptions of sexual norms, with a higher score indicating perceptions of more sexual activity and sexual coercion within their school. Scale reliability was assessed with Cronbach’s Alpha, $\alpha = 0.76$ (95% CI: 0.73, 0.79). Confidence intervals (CI) computed using the procedure documented in Maydeu-Olivares, Coffman, & Hartmann (2007).

Sexual beliefs/attitudes. Five items assessed youth's beliefs and attitudes about sex.

Items included: "It is okay for a girl to ask a sexual partner to use a condom." "It is okay for girls my age to carry condoms if they plan to have sex." "It is okay for boys my age to carry condoms if they plan to have sex." "It is okay for people my age to not have sex." And "Most of my friends think I should not have sex." Items were assessed on a six point Likert scale ranging from "Strongly disagree" (0) to "Strongly agree" (5). All five items were average to obtain a composite sexual beliefs/attitudes score. Scale reliability was assessed with Cronbach's Alpha, $\alpha = 0.79$ (95% CI: 0.77, 0.80).

Sexual situation self-efficacy. Four items assessed participants' belief in their ability to influence sexual situations: "How sure are you that you would be able to refuse to have sex if you did not want to have sex?" "How sure are you that you will use a condom even if your partner does not want to use one?" "How sure are you that you will use a condom even if you have been drinking alcohol?" "If you did not have sex, how sure are you that you could show love for your partner in other ways?" Items were assessed on a four point Likert scale ranging from "very sure" (0) to "not sure at all" (3). Items were reverse coded and averaged so that a higher score reflects greater sexual situation self-efficacy. The scale had strong reliability, $\alpha = 0.79$ (95% CI: 0.77, 0.81).

Sexual aggression. Sexual aggression was measured by a single item in which participants were asked: "Have you ever made someone do something sexual that they might not have wanted to do?" Participants could respond yes (1) or no (0).

Sexual risk behavior. Participants who responded that they had ever had sex were asked a series of questions about their recent sexual behavior. Participants were asked how many times they had sex in the last six months and in the past month; "how many people

[they] had sex with in the last 6 months?” and “last month.” These four items were summed to assess the participant’s level of *recent sexual activity*. Participants were also asked if they used a condom, and if they used alcohol or marijuana the last time they had sex. Affirmative responses to each of these items received one point to create a *risky sexual behavior index*.

Procedures

Missing data imputation. A three form design was utilized for the student survey, which maximizes the number of items that can be included in the study while reducing the overall response burden on individual participants (Graham, Taylor, Olchowski, & Cumsille, 2006). The survey was comprised of one base set (X) that was given to all students, and three additional sets (A, B, and C). In addition to set X, each student received two of the three additional sets such that an equal number of students responded to sets A, B, and C. All sexual behavior questions, including sexual coercion, were measured in set X. Sexual norms items were in set B, while sexual beliefs and attitudes were measured in set C. Multiple imputation approaches were used to account for missing data that results from the planned missing design of the study, as well as missingness due to incomplete survey completion and attrition. Forty datasets were imputed. The propensity score model and outcome model to be described were fit in each imputed dataset and combined using Proc MIANALYZE in SAS Software 9.4 (SAS Institute Inc., 2012).

Propensity score estimation. Logistic regression was used to estimate the propensity for each boy to experience sexual coercion based on his baseline characteristics. In order to be able match participants on their propensity to experience sexual victimization, there

must be sufficient overlap between groups on the propensity scores. In other words, there must be people in the control group with propensity score values equal or similar to the propensity scores for those in the exposed group. The amount of overlap in the propensity score estimates between groups was assessed and determined to be sufficient for obtaining matches with similar scores across groups.

Generating matched dataset. There are several possible approaches to estimating the causal effect once propensity scores are obtained. Stuart (2010) recommends using the approach that produces the greatest balance between the two groups. In a review of propensity score methods, Austin (2011) suggests that matching techniques have been shown to reduce bias to a similar or greater extent than inverse probability of treatment weighting (IPTW), which in turn has shown less bias than stratification methods. Thus, the current study used matching methods to form the comparison groups. The gmatch macro (Kosanke & Bergstralh, 2004) for SAS Software 9.4 (SAS Institute Inc., 2012) was used to generate a dataset of victimized and non-victimized boys who had a similar propensity for experiencing sexual victimization. One non-victimized participant was matched with each victimized participant with a similar propensity score. This approach was expected to perform well as the non-victimized group is large relative to the victimized group, thus there were many non-victimized individuals who could serve as potential matches.

Assessing balance. The goal of propensity score techniques is to create balance between the control group and the exposed group on the distribution of baseline confounders. In order to assess whether or not balance was achieved, the standardized mean difference between the two groups was calculated for each confounder. Standardized mean

difference values should be under 0.2 (Rubin, 2001; Stuart, 2010), which represents a small effect size and suggests that the matched samples do not differ significantly on the confounders (Cohen, 1992). All standardized mean differences were under 0.2 for each confounder, thus balance was achieved. The mean and standard deviations for victimized and non-victimized groups are included in the table of descriptive statistics (Table 3-2). However, given the large number of variables included in the propensity score model, this table was limited to demographic variables and the baseline versions of the mediator variables.

Outcome Analyses. Sexual coercion was measured at Wave 2 to ensure that the measure of coercion is subsequent to the confounders included in the propensity score model, which were measured at Wave 1 (*see* Figure 3-1). Attitude and norm measures (i.e. mediating variables) were also measured at Wave 2. Measuring the mediating variables and the sexual coercion event at the same wave is not likely to impact the temporal ordering of the event and mediators as the attitudes and norms are reflecting the norms and attitudes at the moment of data collection, which is subsequent to any reported sexual coercion reported at the same wave. Risky sexual behavior was assessed at Wave 3.

To test the hypothesis that experiencing sexual coercion is associated with more sexual aggression and risky sexual behavior, the total effect of sexual coercion was estimated using linear regression adjusting for the propensity score estimate. Similarly, the effect of sexual coercion on the hypothesized mediating variables (hypothesis 2) is tested by estimating the effect of sexual coercion on each of the mediating variables. To test for mediation (hypothesis 3), the controlled direct effect, the effect of sexual coercion on the outcome variables controlling for levels of the mediating variables, is estimated

followed by an estimate of the effect of each mediator on the outcome measures. All models are adjusted for the propensity estimate. As previously mentioned, all analyses are assessed in each of the forty imputed datasets and results from the forty imputed datasets are combined using Proc MIANALYZE.

Results

Regression analyses are used to estimate the effects of sexual coercion on mediators of sexual risk behaviors, and sexual risk behaviors and sexual aggression, adjusting for baseline characteristics using the estimated propensity score. The propensity-adjusted estimate of the association between experiences of sexual coercion and the outcomes and mediating variables are presented in Table 3-3 and Table 3-4. Sexual coercion did not significantly predict wave 3 sexual behaviors when the mediators were absent from the model. Although the total direct effect of sexual coercion was not significant, Shrout and Bolger (2002) have shown that the power to detect total direct effects is greatly reduced when the causal process becomes more distal; however, mediation may still be present.

Results suggest that boys who are victims of sexual coercion report significantly higher *perceived sexual norms* than their peers who did not experience sexual coercion ($b = 0.30, SD = 0.03, p < 0.05$). Those who experienced sexual coercion perceived more recent, risky, and coercive sexual behavior among their peers than would be expected if they had not experience sexual coercion ($M = 1.98, SD = 2.10$ versus $M = 1.67, SD = 2.02$). When controlling for experiences of sexual coercion (Table 3-5), 8th grade perceived sexual norms (wave 2) was a significant predictor of 9th grade (wave 3) recent sexual behavior ($b = 0.27, SD = 0.08, p < 0.01$), riskier sexual behavior ($b = 0.09, SD =$

0.02, $p < 0.001$), and sexual aggression ($b = 0.02$, $SD = 0.008$, $p < 0.05$). These findings support an indirect effect of sexual coercion on sexual behaviors that is mediated by perceived sexual norms per the joint significance test (MacKinnon et al., 2002).

The results did not support mediation through sexual beliefs or sexual situation self-efficacy on the effect of sexual coercion on sexual risk behaviors and aggression. The results suggest that boys who experience sexual coercion are slightly less likely to hold positive sexual beliefs ($M = 2.38$, $SD = 1.42$ versus $M = 2.63$, $SD = 1.41$), but this effect did not reach significance ($b = -0.24$, $SD = 0.12$, $p = 0.06$). Furthermore, the controlled direct effect of sexual beliefs on recent and risky sexual behavior, and sexual aggression were not significant. Thus the hypothesis that sexual coercion had a negative effect on sexual beliefs was not supported, nor was the hypothesis that the effect of sexual coercion on risky sexual behaviors would be mediated by sexual beliefs or sexual situation self-efficacy.

Lastly, effect of sexual coercion on one's sexual situation self-efficacy was not statistically significant ($M = 1.83$, $SD = 0.87$ versus $M = 1.85$, $SD = 0.89$). However, sexual situation self-efficacy was significantly associated with risky sexual behaviors at last sex ($b = -0.16$, $p < 0.01$), such that those with greater sexual situation self-efficacy reported less risky sexual behaviors, including substance use and non-condom use at last sex.

Discussion

The current study addresses an important limitation of existing research by demonstrating the mediating role of perceived sexual norms on the relationship between sexual coercion and sexual risk behaviors using longitudinal data. To our knowledge, this

is the first longitudinal study of consequences of sexual coercion. Furthermore, the use of propensity score modeling provides for stronger causal inference than is possible with traditional approaches (Rubin, 2001; Stuart, 2010).

When boys experiencing sexual coercion and those not experiencing coercion are balanced on baseline characteristics, boys who have been sexually coerced are more likely to think that their peers are also involved in recent sexual behavior (i.e. sex in the last month), risky sexual behavior (i.e. non-condom use) and coercive sexual experiences (as both perpetrator and victim). The results suggests an indirect effect of the experience of sexual coercion on riskier sexual behavior, more frequent sexual behavior, and perpetrating sexual violence a year later through the effect on perceived sexual norms. These results provide some support for past cross-sectional research that suggests boys experiencing sexual violence were more likely to later perpetrate sexual violence and engage in riskier sexual behavior.

Though primary prevention of sexual violence towards boys should be the priority, the current findings suggest that addressing perceived peer sexual norms among youth who experienced sexual violence may be particularly important in preventing sexual violence perpetration and reducing sexual risk behaviors among boys. While it may be improbable for an intervention to substantially change perceived norms, small changes are feasible. Overall the difference in sexual norms among those who experienced sexual coercion compared to those who did not experience sexual coercion is fairly minor, about 15% of a standard deviation, suggesting that interventions would likely be able to close the gap between youth who experienced sexual coercion and those who did not. Though more frequent sexual behavior is not necessarily risky when it

occurs with a single partner, more frequent sexual intercourse and more partners increases youth's risk of exposure to HIV/AIDS and other STIs. Adolescents who engage in sex at an early age are also less likely to use safe sex practices (Harrison, Cleland, Gouws, & Frohlic, 2005), which further increases their risk for STIs.

Boys who experience sexual violence may be less likely to seek treatment due to social norms that suggest boys should always want sex and need to prove their masculinity through their sexual prowess (Petersen et al., 2005; Selikow, Ahmed, Flisher, Mathews, & Mukoma, 2009). These attitudes are reflected in the language boys use to describe their experiences with sexual coercion in qualitative research. When boys report a female perpetrator, they are more likely to use language that suggests that sexual coercion was fairly mild, involving temptation and mild embarrassment. However, the current study suggests that boys are affected by these experiences, which are primarily perpetrated by females (*Dissertation Study 1*). Boys may find it particularly difficult to admit not wanting sex when their perpetrator was female (Peterson et al. 2012), as not wanting sex is seen as unmasculine. Consequently, bringing an awareness of sexual violence towards boys to the community may help reduce stigma and promote the development of prevention and treatment resources.

The lack of association between sexual coercion and the other two hypothesized mediators, sexual beliefs and sexual situation, suggest that previously noted associations between these constructs found in cross-sectional research (Sayles et al., 2006) may be due to pre-existing differences that increase one's risk for sexual coercion rather than being a consequence of sexual coercion (Miller, Smith, Coffman, Mathews, & Wegner, *under review*). This is partially supported by previous literature reviews with American

adolescent girls that suggests gendered relationship beliefs both precede sexual behavior, but also are influenced by sexual experiences (Foshee & Bauman, 1992). Without adjusting for baseline characteristics with the propensity estimate, boys not experiencing sexual coercion were significantly different from those who experienced coercion on all three mediators (analyses not shown). Future studies on the impact of sexual coercion should use a causal inference framework, such as that used for the current study, to help strength our understanding of the developmental impact of sexual coercion.

Reports of sexual coercion are higher in the current study than has been previously reported. In a national survey of secondary school youth, Reddy and colleagues (2010) found that 16.7% of 8th grade male students reported ever experiencing forced sexual intercourse. Though this is similar in prevalence to that reported in the current study, the current study is limited to sexual coercion reported in the last 6 months and excluded participants who reported sexual coercion at Wave 1. Andersson and Ho-Foster (2008) found that 10.4% of 14 year old and 11% of 15 and 16 year old boys reported experiencing sexual coercion in the past year. The higher prevalence reported in our data (18.5%) is likely due to how we measured sexual coercion. Given the lack of research on consequences of sexual coercion among boys we choose to use a broad measure of sexual coercion, which included three questions that were phrased differently. An affirmative response to all three questions would meet the legal definition of sexual coercion; however, the boys themselves may not identify as being sexually victimized. This approach likely provides a conservative estimate of the effects of sexual coercion as those who do not identify as being sexually victimized likely had more mild or moderate experiences of sexual coercion compared to those who identify as being sexually

victimized. However, many boys may not report being sexually victimized as such experiences do not conform to gender norms that boys should always want sex and that boys cannot be raped. Consequently, measurement based on a legal definition, rather than perceptions of victimization helps to account for such bias.

Limitations

Though the current study addresses several of the substantive and methodological limitations in the existing literature on sexual violence, several limitations should be noted. Although measuring sexual coercion at Wave 2 was necessary in order to exclude past experiences of sexual coercion, it is possible that something could have happened between Wave 1 and Wave 2 that influenced both sexual coercion and the mediators. However, given the large number of baseline confounders included in the model, it is possible that the confounders included in the propensity score model would also predict those experiences as well. Similarly, while the propensity model insured balance on each confounder for youth who were in the victimized and non-victimized groups, it does not assure balance on the mediators. While we expect that the confounders included in the model will also influence the mediating variables, we cannot claim a causal relationship between sexual norms and the outcome variables. Nonetheless, the current approach will reduce the biases that currently exist in the literature.

Another limitation of the current study is that we do not know the gender of the perpetrator for all reports of sexual violence in the current study. As noted earlier, past research suggests that sexual coercion with the current sample was primarily perpetrated by females. It is possible that the consequences of sexual violence may be different when the perpetrator is male or female.

Lastly, the current study focused on sexual violence towards early and mid-adolescent boys attending secondary schools in the Western Cape, South Africa. The results may not be generalizable to youth in other parts of South Africa, other countries, or out of school youth. Findings should be interpreted in light of these limitations.

Conclusion

The current study provided evidence that sexual coercion can impact adolescents' sexual norms, perceptions and behavior. However, it is possible that sexual coercion has a greater impact on other potential consequences. Future research should examine the longitudinal research between sexual coercion and other correlates observed in cross-sectional research, including substance use, and psychological well-being. Furthermore, the study highlights the importance of accounting for baseline differences among adolescents who experience sexual coercion in order to have a deeper understanding of the impact of sexual coercion. Overall, these findings suggest that addressing sexual violence towards boys may not only be important for the health of boys, but also in the fight against sexual violence towards girls and women.

Table 3-1
 Confounders of sexual coercion, and attitudes, norms, and behaviors in the literature.

Confounders	Variables included in the model	Reference*
Ethnicity	Ethnicity	Reddy et al., 2010
Poverty	Family has tap water, motor car, and type of home; Family structure (Live with mother; Live with father)	Andersson et al., 2012; Krug et al, 2002; Petersen et al., 2005; Wubs et al., 2009; Ybarra, Bull, Kiwanuka, Bangsberg, & Korchmaros, 2012
Sexual behavior	Whether or not participant ever had sex; Sex in last six months, number of partners in last six months	Gaffoor, Wand, Daniels, & Ramjee, 2013; Krug et al, 2002
Sexual aggression	Sexual aggression at baseline	Wolfe et al., 2001
Relationship status	Currently relationship status	Krug et al, 2002
Partner's age	Partner's age	Jewkes & Morrell, 2012; Krug et al, 2002
Participant's age	Participants age	Krug et al, 2002
Attitudes	Baseline attitudes	Wubs et al., 2013
Norms	Baseline norm perceptions	Krug et al, 2002
Self-efficacy	Baseline sexual situation self-efficacy	Walsh & Foshee, 1998
Delinquency	Bullied, hurt others, damaged property, broke in to a property, or stole something.	Wolfe et al., 2001
School motivation	How far they expect to get in school; How likely they are to finish something once they start it; How fast they read; how likely they are to be in same school next year?	These items were included because they predict missingness and may be characteristic of youth who are generally high risk.
Substance use	Lifetime substance use	Daigle, 2009; Krug et al, 2002; Testa, Hoffman, & Livingston, 2010
Prior victimization	Whether or not participant ever experienced sex coercion attempt (those with past sexual coercion were excluded)	Krug et al, 2002; Wolfe et al., 2001
Community environment	Participant's school & classroom	Krug et al, 2002

*Though attempts were made to include data from studies on males, the list of confounders draws heavily on research on violence against women.

Table 3-2.

Baseline descriptive statistics for non-victimized and victimized matched sample.

	Non-victimized		Victimized	
	Mean	Std Dev	Mean	Std Dev
Age	14.08	0.87	14.12	0.88
Race				
Black	0.46	0.50	0.47	0.50
White	0.10	0.30	0.09	0.29
Coloured	0.42	0.49	0.42	0.49
Indian	0.01	0.08	0.01	0.07
Household structure				
Lives with mother	2.51	0.91	2.51	0.88
Lives with father	2.00	1.11	2.01	1.10
Socioeconomic Status				
Has tap water at home	0.91	0.29	0.90	0.30
Family has motor car	0.54	0.50	0.54	0.50
House type	2.47	1.17	2.45	1.16
Mediators (at baseline)				
Perceived peer sex norms	1.80	2.07	1.85	2.13
Sexual beliefs	2.53	1.37	2.49	1.41
Sexual situation self-efficacy	1.91	0.90	1.89	0.91

Table 3-3.

Impact of sexual coercion on outcomes

	Recent sex		Risky sexual behavior		Sexual aggression	
	estimate (sd)	p	estimate (sd)	p	estimate (sd)	p
Intercept	2.30(0.20)	<.0001	0.96(0.06)	<.0001	0.16(0.02)	0.0001
Sexual coercion	0.34(0.29)	0.25	0.15(0.09)	0.09	0.03(0.03)	0.36

Table 3-4.

Impact of sexual coercion on mediators.

	Sexual norms		Sex Beliefs		Self-efficacy	
	estimate (sd)	p	estimate (sd)	p	estimate (sd)	p
Intercept	1.67(0.12)	<.0001	2.64(0.10)	<.0001	1.84(0.04)	<.0001
Sexual coercion	0.30(0.14)	0.034	-0.24(0.12)	0.06	-0.02(0.07)	0.74

Table 3-5.

Controlled direct effect and Effect of Wave 2 mediators on Wave 3 sexual behavior.

Mediator 1: Wave 2 sexual norms effect on Wave 3 sexual behavior						
	Recent sex		Sex risk behavior		Sex aggression perp.	
	estimate (sd)	p	estimate (sd)	p	estimate (sd)	p
Intercept	1.89 (0.22)	<.0001	0.82(0.07)	<.0001	0.14(0.02)	<.0001
Sexual coercion	0.24 (0.27)	0.388	0.11 (0.08)	0.198	0.02(0.03)	0.552
W2 sex norm	0.27 (0.08)	0.002	0.09(0.02)	0.001	0.02(0.008)	0.045
Mediator 2: Wave 2 sexual beliefs effect on Wave 3 sexual behavior						
	Recent sex		Sex risk behavior		Sex aggression perp.	
	estimate (sd)	p	estimate (sd)	P	estimate (sd)	p
Intercept	2.75(0.47)	<.0001	1.23(0.10)	<.0001	0.22(0.03)	<.0001
Sexual coercion	0.29(0.28)	0.322	0.12(0.09)	0.172	0.02 (0.03)	0.551
W2 sex beliefs	-0.16(0.15)	0.312	-0.06(0.03)	0.077	-0.02(0.01)	0.068
Mediator 3: Wave 2 sexual situation self-efficacy effect on Wave 3 sexual behavior						
	Recent sex		Sex risk behavior		Sex aggression perp.	
	estimate (sd)	p	estimate (sd)	P	estimate (sd)	p
Intercept	2.93(0.44)	<.0001	1.26 (0.12)	<.0001	0.23(0.04)	<.0001
Sexual coercion	0.32(0.27)	0.264	0.13(0.09)	0.13	0.02 (0.03)	0.48
W2 self-efficacy	-0.32(0.20)	0.122	-0.16(0.05)	0.006	-0.03(0.02)	0.052

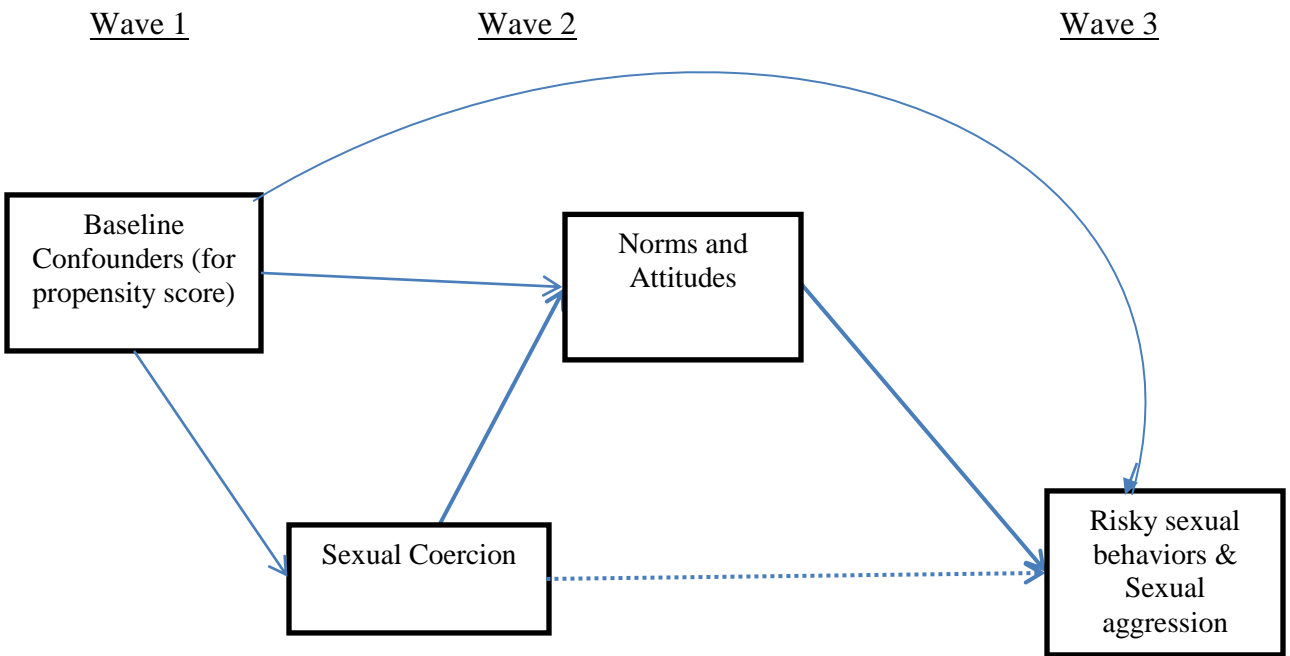


Figure 3-1. Causal inference model.

Chapter 4

Study 3: Does Changing the School Environment Influence Sexual Climate and the Prevalence of Sexual Coercion within a School?

Research suggests that creating a safe environment in which youth can discuss sexuality and develop skills is important for effective interventions (Gavin, Catalano, David-Ferdon, Gloppen, & Markham, 2010; Kirby, 2007). The high level of violence in South Africa bleeds into their schools, which may undermine intervention efforts. Although research is limited on interventions directly targeting the school climate, interventions that change the school environment have been shown to reduce sexual harassment and sexual violence in schools as well as enhance classroom based dating violence interventions. Researchers suggest that these school level interventions may work through influencing the school climate (Taylor et al., 2013); however, it is unclear if a school's sexual climate influences sexual victimization.

School environment and sexual climate

The UNICEF report on violence against children in South Africa (DSD, DWCPD, & UNICEF, 2012) suggests that while education can reduce violence overall, schools may also unintentionally promote youth violence through the use of corporeal punishment by teachers, bullying by peers, and sexual violence within the school. Schools that reinforce gender stereotypes and the idea that violence is a way of resolving conflict may have a climate that perpetuates sexual violence. Although the role of the school on sexual climate has not been examined, community and national level factors have been shown to contribute to attitudes and violence within a community. In research with adults, Uthman and colleagues (Uthman, Moradi, & Lawoko, 2009) found that community and country level variables, along with individual level socioeconomic

factors, were associated with justifying intimate partner violence towards women among men and women from 17 sub-Saharan countries. Using data from the 2008 Nigerian Demographic and Health Survey, Uthman, Moradi, and Lawoko (2011) found further evidence for the role of community on experiences of intimate partner violence finding that women were more likely to experience violence in communities that were tolerant of intimate partner violence even after controlling for women's own attitudes.

Similarly, youth in schools tolerant of sexual harassment and coercion may learn to view these behaviors as normal and further contribute to sexual violence. A school climate in which students perceive teachers to be unresponsive to sexual harassment complaints or ignore sexual harassment that they observe is associated with higher levels of sexual harassment within schools (Ormerod, Collinsworth, & Perry, 2008). While teachers are legally obligated to report sexual abuse of students, cases often go unreported (DSD, DWCPD, & UNICEF, 2012). Such silence may send messages that condone abuse (Gevers & Flisher, 2011).

Schools with high levels of disorganization and few resources to address sexual violence may also lack the ability to promote positive behaviors and respond to sexual harassment, abuse, and violence that further propagates violence. Social disorganization at the neighborhood level is associated with higher rates of crime and violence due to an inability to control people's behavior (Shaw & McKay, 1942; as cited by Uthman, Moradi, Lawoko, 2009), suggesting that resources and environmental factors are important for controlling violence. Witnesses of violence are more at risk for perpetrating and being victimized than those who have not witnessed violence (Njue, Askew, &

Chege, 2005); therefore high levels of violence within a school may increase the chance of witnessing violence and being involved in subsequent violence.

Socialization and Sexual violence in South African Schools

College-aged peer educators working in secondary schools in the Cape Town area report that sexual harassment and assaults are common within the corridors, classrooms and bathrooms of some schools (UWC HIV/AIDS Programme peer educators, personal communication, March 2013). Both boys and girls force others to take sexual pictures of their bodies, touch each other sexually, and pin others against the wall and kiss them when the other does not wish to. In bathrooms, a group of youth will gang up on a boy or girl and touch them sexually, force them to masturbate the perpetrator, or try to have sexual intercourse with them. The peer educators reported that this occurs even at the primary school level, suggesting that by the eighth grade many youth may have been exposed to sexual violence within their school. Such exposure likely normalizes sexual violence among youth and may serve as a means to socialize youth to accepting gender and sexual norms that promote violence. Consequently, interventions in South Africa may need to take extra precautions to establishing a safe environment in the classroom and promoting a culture of respect within the schools.

HealthWise South Africa: Lifeskills for Young Adults

HealthWise South Africa (*HealthWise*) is a school-based intervention that aims to reduce substance use and risky sexual behavior through promoting positive use of leisure time, the development of life skills, and knowledge about risk behaviors among youth. The curriculum consists of 12 lessons taught in grade 8 and six lessons taught in grade 9. HealthWise was previously evaluated as part of an efficacy trial ('HWStudy1') in a peri-

urban township near Cape Town, South Africa. Boys, but not girls, in HealthWise schools were less likely to initiate sexual intercourse compared to boys in the control schools (Smith et al., 2008) and were less likely to report intentions to push others into unwanted sexual encounters (Bradley et al., 2010). Furthermore, both girls and boys were less likely to report risky sexual behavior such as reporting a partner whom they just met or using substances at their most recent sexual encounter (Tibbits et al., 2011).

HealthWise was also found to have a positive effect on multiple mediators of risky sexual behavior including increased perceptions of condom availability (Smith et al., 2008), condom use self-efficacy (Coffman et al., 2011), levels of boredom (Caldwell et al., 2010) and a reduction in the growth of recent and heavy alcohol use (Smith et al., 2008).

Given the positive results of HWStudy1, a second study was developed to assess components that may facilitate the translation of interventions into practice and improve the implementation fidelity of the intervention ('HWStudy2'), specifically: enhanced teacher training (ETT); teacher support, structure, and supervision (SSS), and enhanced school environment (ESE; Caldwell et al., 2010). The study uses a factorial design to evaluate the effect of the three components. This type of design allows for an estimate of both main effects and interaction effects of the three components (Collins, Dziaik, & Li, 2009).

Although all HealthWise teachers received training in the HealthWise curriculum, teachers receiving the ETT component were supposed to receive an additional training before implementing both the 8th and 9th grade curriculum that focused on lessons that teachers often find difficult, including two boredom and two sexual risk lessons. There were some challenges in implementing this condition as not all teachers assigned to this

condition attended the additional training. The SSS condition also focused on enhancing teachers' ability to implement the curriculum by providing teachers with access (either via email or telephone) to support staff who could answer questions about the curriculum and help problem solve as necessary. Study support staff also checked in on the teachers, provided feedback on how they were doing, and provided additional resources, such as posters to facilitate teaching the HW lessons. Lastly, the ESE component aimed to promote HealthWise concepts throughout the school through posters, school events, contests, resource fairs, and holiday programs to promote positive use of time during school vacation periods. All schools receiving ESE received a notice board that could be used to provide information and community resources (numbers, maps, organizations, etc.) relevant to the HealthWise topics. The notice boards were updated regularly to provide new information. Schools also received posters related to HealthWise topics to help facilitate discussion and awareness of HealthWise topics in the classrooms. Activities included in this component varied across schools. The HealthWise program staff also connected schools with the UWC HIV and AIDS Programme, which focused on risk reduction and promoting awareness of teenage related social developmental issues especially HIV and AIDSs. This program also included a peer educator component and tried to assist student leaders at high schools to become 'agents of change'. A total of five schools choose to implement the HIV and AIDS Programme.

Study Aims and Research Questions

The current study aims to assess the impact of the enhanced school environment (ESE) component on schools' sexual climate and overall prevalence of sexual coercion within the schools. The school environment is important for adolescents' sexual health as

it influences the opportunities and resources available to youth and acts as a socializing agent that influences youth's perceptions of norms, beliefs, and attitudes (Henry, Schoeny, Deptula, & Slavick, 2007; L'Engle & Jackson, 2008; Zimmer-Gembeck & Hefland, 2008). Visual reminders and greater overall awareness of the *HealthWise* concepts among both students and teachers throughout the school were expected to help promote a better sexual climate in schools receiving the ESE component. Furthermore, additional services provided by invited partners as part of the ESE component that promote leadership and peer mentoring will further promote a more positive sexual climate as they likely promote positive decision making, assertiveness, and dispel social norms that encourage risky sexual behavior and sexual violence. Although schools receiving the ESE component varied considerably in their levels of participation, the current study takes an intent-to-treat approach to all analyses. The hypotheses are as follows.

1. Schools receiving ESE will have a lower prevalence of sexual coercion compared to schools not receiving ESE, controlling for the ETT and SSS components.
2. Schools receiving ESE will have a more positive school sexual climate, as measured by school level behavioral and attitudinal factors, compared to schools that did not receive ESE, averaged across levels of the ETT and SSS components.
3. The effect of ESE on sexual coercion will be mediated by the effect of ESE on the school's sexual climate.

Methods

Participants and Procedures

The current study consists of 56 schools in the Metro South Education District of Cape Town who participated in a translational research study of the *HealthWise: South Africa* curriculum, a school-based, life skills curriculum taught during grades eight and nine. Schools were randomly assigned to one of eight conditions in which they could receive none, one, two, or all of the factors (Table 4-1). In total, twenty-eight schools received the ESE condition.

The student survey for the current study utilized a three-form design survey to maximize the amount of data that could be collected while minimizing the overall response burden on individual participants (Graham, Taylor, Olchowski, & Cumsille, 2006). All students completed a base set of items (set X) including items on sexual behavior and experiences of sexual coercion. The remaining items were grouped by topic and distributed across three additional sets (A, B, and C). Each student completed two of the three additional sets such that an equal number of students responded to sets A, B, and C. Multiple imputation were used to account for missing data that results from the planned missingness design of the study, as well as missingness due to incomplete survey completion and attrition.

The current study uses three waves of data collected between March 2012 and October 2013 from students using netbooks. Students completed baseline observations (Wave 1) in the beginning of 8th grade, with follow up observations at the end of grade 8 (Wave 2), and grade 9 (Wave 3). The survey was administered in English. Research staff, fluent in each language, was available to answer questions. The study, along with its

passive parental consent and student assent procedures, was approved by The Pennsylvania State University's, University of the Western Cape's, and Western Cape Education Department's Institutional Review Boards.

Measures

School sexual climate. The school sexual climate variable captures the extent to which sexually aggressive behaviors are prevalent within the school, and perceived norms and attitudes within the school are supportive or discouraging of sexual coercion. Two primary components make up the *school sexual climate* towards sexual coercion measure: (1) *sexual aggression* and (2) *perceived norms and attitudes* regarding sexual behavior within the school.

Sexual aggression is measured by students' responses to with three items to capture sexual aggressive behavior and intentions within the school. These items assessed whether or not students (1) forced someone else to do something sexual against their will (coded yes/no), (2) would stop trying to have sex with someone even after the person said no (0 = 'stop', 1 = 'keep trying', and for those who responded that they would 'keep trying', (3) when the person would stop trying (0 = "when he or she said 'no' again", 1 = "when he or she said 'no' several times", 2 = "I would not stop trying"). Items were summed for individual students prior to calculation of the mean level of sexual aggression within schools.

Twelve items were used to assess *perceived norms and attitudes* in the school. The items capture perceived norms regarding (1) peer sexual behavior (2 items; i.e., percent of peers students believe had sex in the last month or use condoms), and (2) sexual coercion (2 items; i.e., perceptions of the prevalence of perpetrators and victims of

sexual coercion in their school). Items are also included that capture learners acceptance of sexually coercive behaviors (2 items; i.e., that it is okay to use drugs or alcohol to make someone have sex with you, and what they would do if someone was pushing them to have sex), acceptance of positive sexual beliefs (4 items, i.e., it is okay for a girl to carry a condom, boy to carry a condom, ask for condom, or abstain from sex) and the percent of students who believe they could talk to their teacher about sexual issues and condoms (2 items). At the student level, sexual norm items were measured on a 11 point scale that captured the proportion of peers that students perceived to engage in each behavior ranging from “none” to “about 90” out of a hundred or “all of them.” Positive sexual beliefs, and coercion risk beliefs were measured on a six point Likert scale from “strongly disagree” (0) to “strongly agree” (5). How easy it would be to talk with their teachers was measured on a four point Likert scale from “difficult” (0) to “easy” (3).

Sexual coercion. The school level prevalence of sexual coercion was assessed by calculating the overall percentage of students reporting sexual coercion in the last six months based on students’ responses to three sexual coercion items. All youth were asked if they “ever had sex?,” which was defined as “intimate contact with someone during which the penis enters the other person.” Youth who responded “Yes, but only when I was forced without my consent” were coded as experiencing sexual coercion. Youth who responded “Yes” without the stipulation of force were later asked “Thinking about the last time you had sex, were you forced to have sex?” Youth who responded “Yes” were coded as experiencing sexual coercion. Lastly, all youth were asked if “anyone ever tried to make you have sex against your wishes?” Youth who responded “[y]es tried, sex did occur” were coded as having experienced sexual coercion. For the purposes of the current

study, sexual coercion will only be included in the outcome measures if it was reported to occur within the last six months. This ensures that sexual coercion occurred after the implementation of the intervention. The overall percentage of students within the school reporting sexual coercion in the last six months was assessed to enable the examination of the school level prevalence of sexual coercion.

Condition Assignment. ESE is a dichotomous indicator of whether a school was assigned to receive the environmental enhancement factor or not. The SSS and ETT components were measured as either on or off. All components were effect coded, and all interactions are included so that the main effect of ESE can be assessed.

Analytic Plan

The main effect for the ESE condition were estimated using linear regression, averaging across all levels of the SSS and ETT components and higher order effects. This comparison enables the examination of the difference in the mediators and outcomes when ESE is included compared to when ESE is not included, averaging across potential values for SSS and ETT. Models are estimated using PROC GLM in the SAS Software, version 9.4 (SAS Institute Inc., 2012). Missing data due to the planned missingness design of the study and attrition were assumed to be missing at random and imputed.

To test the first hypothesis, that ESE will be associated with lower levels of sexual coercion, the total effect of ESE on sexual coercion at the school level (Model 1) was estimated. Second, the effect of ESE on the mediating variables (Hypothesis 2) will be tested by estimating the effect of ESE on the attitudinal and behavioral mediators (Model 2). Lastly, the hypothesis that the relationship between ESE and sexual coercion is mediated by the mediators was evaluated using the joint significance test (MacKinnon,

Lockwood, Hoffman, West, & Sheets, 2002). The joint significance test uses two regression models to assess mediation, 1) Model 2 described above, and 2) a model testing the effects of ESE on sexual coercion controlling for the mediating variables (Model 3). Mediation of ESE is considered statistically significant if both the coefficient for ESE in Model 2 and the coefficient for the mediators in Model 3 are statistically significant. All models include SSS and ETT conditions, along with higher order interactions, in order to isolate the main effect of ESE (Collins, Dziak, & Li, 2009).

Results

Baseline sexual behavior and perceived norms

Descriptive statistics for the schools at Wave 1 are presented in Table 4-1. On average, 9.75% of student within each school reported forcing someone to do something sexual (range 0 – 32%), and 7.6% of students reporting ever experiencing sexual coercion at baseline. Schools varied substantially on their overall prevalence of sexual coercion with students in some schools reporting no sexual coercion while other schools had 26% of students reporting having experienced sexual coercion. On average, the students overestimated the prevalence of sexual coercion within schools. On average student perceived 13.2% of their peers to have perpetrated forced sex ($M = 1.32$, range 0.28-2.48) and 13.6% ($M = 1.36$, range 0.55-2.26) of their peers to have been forced to have sex.

Schools had students who, on average, perceived more sexual behavior among their similar aged peers than actual reports of sexual behavior at baseline. At the school level, students perceived 21% of their peers had sex in the last month ($M = 2.08$, range 0.92 – 3.46) and 24% of their peers used condoms in the last month ($M = 2.41$, 1.08-

3.57), whereas the majority of students (87.7%) in each school reported never having sex (range 68%-99%). However, there was a substantial range in the prevalence of students who never had sex across schools, ranging from 68% of the student body to nearly all students (99%). Perceptions of sexual behavior also ranged from perceiving approximately 9% of students engaging in sexual intercourse, to approximately 35%.

Baseline attitudes and beliefs

Schools had student that had fairly neutral sexual beliefs ($M = 2.81$, scale range: strongly disagree (0) to strongly agree (5)), reporting that they either 'slightly disagreed' (2) or 'slightly agreed' (3) with sexual beliefs such as it being okay for a girl or boy to carry a condom, abstain from sex, or for a boy to ask to use a condom. However, some schools had markedly more risky views with students reporting that they 'slightly disagreed' (min = 1.94), while others had more positive views (max = 3.65) with students reporting that they either 'slightly agreed' or 'agreed' with positive sexual beliefs, on average.

On average, schools had students who reported that they would have some difficulty in talking to teachers about sexual issues or condoms at baseline ($M = 1.09$, scale range: difficult (0) to easy (3)). Though this also varied across schools, with some schools having students who generally find it 'difficult' while others reported more neutral responses between 'slightly difficult' and 'slightly easy', no schools had student that reported that it would be easy to talk with teachers about sex.

Schools overwhelmingly had student that did not accept coercive risk behaviors such as getting a person drunk or high to have sex with them or to use alcohol or drugs to feel more comfortable with sex ($M = 0.67$, scale range: strongly disagree (0) to strongly

agree (5)). While there was variation in mean levels of acceptance of coercive risk attitudes across schools, the schools with the most risky attitudes had student that reported 'disagreeing' with coercive risk attitudes, on average.

Regression Analyses

At Wave 3, schools had an average prevalence of recent sexual coercion of 10.9%, ranging from almost no students reporting sexual coercion at some schools (0.39%) to 32% of the student reporting recent sexual coercion (Table 4-2). Table 4-3 presents the results of the models testing the total effect of ESE on sexual coercion at Wave 3 (Hypothesis 1) and the effects of ESE on the hypothesized mediators (Hypothesis 2). Results do not support a main effect of ESE on sexual coercion. The results suggest a significant main effect for ESE on sexual coercion norms, in the opposite direction than hypothesized ($M = 1.43$, $SD = 0.21$ versus $M = 1.22$, $SD = 0.30$). Averaging across all levels of the SSS and ETT components, being assigned to the ESE component resulted in a 0.10 ($p < 0.05$) increase in a school's mean sexual coercion norms relative to schools not receiving ESE. Participation in ESE was not associated with a significant change in any of the other hypothesized mediators. The results do not provide evidence of significant higher order effects.

Mediation requires that both the path between the independent variable (ESE) and the mediator and the path between the mediator and the outcome (sexual coercion prevalence) is statistically significant. The results from the previous model suggest that mediation is only possible for sexual coercion norms. Nonetheless the relationship between each hypothesized mediator and sexual coercion prevalence were estimated using linear regression (Table 4-4). Wave 2 sexual coercion norms were not significantly

associated with the prevalence of sexual coercion at Wave 2, thus mediation is not supported.

Wave 2 coercion risk attitudes, sexual beliefs, and sexual aggression were all significantly associated with sexual coercion prevalence at Wave 3. A one-unit increase in the mean level of coercion risk attitudes in a school was associated with a 0.16 unit ($p < 0.0001$) increase in sexual coercion prevalence. Schools where more students report that they made someone do something sexually against their will or that they would push someone to have sex after that person said no at Wave 2 have a higher prevalence of sexual coercion at Wave 3. A one-unit increase in average levels of sexual aggressive behavior and intentions was associated with a 15 percentage point increase in the prevalence of sexual coercion. Conversely, schools with higher mean levels of positive sexual beliefs, such as agreeing that a boy and girl can carry a condom, boys can ask for a condom, or that it is okay for peers to abstain from sex, reported a lower prevalence of sexual coercion. A one unit increase in sexual beliefs is associated with a six percentage point decrease ($p < 0.05$) in sexual coercion prevalence. Neither school level sexual behavior norms nor talking with a teacher about sex at Wave 2 were associated with sexual coercion prevalence at Wave 3.

Discussion

This study is one of the first to explore school sexual climate in South Africa. Though the hypothesized mediation models were not significant, the results suggest that aspects of sexual climate are associated with the prevalence of sexual coercion within schools. Schools with students with more sexually aggressive and risky attitudes, and who hold less positive sexual beliefs at Wave 2 have a higher prevalence of recent sexual

coercion at Wave 3. Though it is important that schools work towards encouraging positive sexual attitudes and interactions both at the individual level and for the school as a whole, the ESE component evaluated in the current study only had an effect on a single mediator, perceived sexual coercion norms.

Results suggest a negative main effect for ESE on coercion norms, such that students in schools receiving ESE perceive more of their peers to be involved in sexual perpetration and victimization, on average, than schools not receiving ESE. Study 2 suggested that boys who perceived more risky peer sexual norms (including both sexual behavior norms, such as condom use, and coercive norms) were more likely to perpetrate sexual violence at the individual level, the current study does not reflect this same association. Though higher perceived peer sexual norms is often problematic (World Health Organization, 2001), the lack of association between mean levels of perceived sexual coercion norms with the prevalence of sexual coercion suggests that the increase in norms among those receiving ESE may not be problematic. Rather, it may be that youth in schools receiving ESE are more aware of sexual coercion in their community and therefore perceive more sexual coercion amongst their peers. Awareness of sexual coercion could open up a positive dialog to help prevent future sexual violence and allow schools to promote resources for youth who experience sexual coercion.

The association between several sexual climate variables and sexual coercion prevalence provides support for observations made by sexual health peer educators (UWC HIV/AIDS Programme peer educators, personal communication, March 2013) who report that some schools are teeming with sexual hostility and harassment. Intervention programs geared towards preventing sexual violence, and sexual risk more

broadly, may need to take extra measures to bolster the school environment, as individual skills such as knowing how to use a condom may provide little benefit in a hostile environment where coercion is prominent. In addition to addressing school level norms, other methods to promote a safer school environment may be warranted. In a study of school sexual climate in the United States, Taylor and colleagues (2013) found that increasing adult presence in areas of the school where sexual harassment and violence were most likely to occur, along with posters and school-based restraining orders for students, helped to reduce sexual victimization among students in the school. Similar interventions may be beneficial in schools where sexual coercion is especially prevalent.

Additional analyses (not shown), suggest that when all three significant predictors of sexual coercion prevalence are included in a single model, only sexual aggression remains significant. Though it may seem logical that a higher prevalence of sexual aggression (acts and intentions) would be associated with the prevalence of sexual coercion, reports of perpetration and victimization are not always consistent. For example, in an evaluation of an intervention targeting dating violence in the United States, participant's reports of sexual violence victimization were close to three times as prevalent as reports of sexual violence perpetration (Foshee et al., 2005). Furthermore, the researchers found that the intervention had a significant impact on reports of sexual violence perpetration, but not on reports of sexual victimization suggesting that self-reports of perpetration do not always reflect the victimization experiences of participants. In the current study, sexual violence perpetrated by individuals outside of the school or by adults within the school would not be captured by our measure of sexual aggression though it would be captured in our measure of sexual victimization. However, the

majority of perpetrators of sexual violence in the current sample are peers. Another feasible explanation is that social desirability bias may prevent some youth from admitting to sexual aggression perpetration. It may be that schools where sexual aggression is more prevalent reinforce coercive norms that make it more socially acceptable to report sexual aggression and that these norms further contribute to sexual perpetration and victimization.

The strength of the association between mean levels of sexual aggression and the prevalence of sexual coercion in the current study is especially interesting given that the measure of sexual aggression is not limited to perpetration of coerced sexual intercourse. Rather sexual aggression was measured with three questions. The first question was behavioral, but not limited to coerced sexual intercourse, asking whether or not participants “ever made someone do something sexual that they might not have wanted to do”. Whereas the additional questions asked about participants’ intentions, whether or not they would stop trying to have sex with a partner who did not want to have sex. Consequently, schools would likely benefit from intervening when youth engage in more mild forms of sexual assault, such as forced kissing or touching, and by working to change norms that may encourage sexually aggressive intentions. For example, girls who believe that boys cannot be victimized, may be more likely to plan to push for sex even if their partner does not want it. Boys who believe that ‘convincing’ a partner to have sexual intercourse provides proof of their masculinity, may be more likely to use coercive tactics with their partner. Qualitative research suggests that there is often a “fine line ...between ‘force’, ‘persuasion’, and ‘seduction” in the minds of South African youth

(Wood, 2005, p. 311). Providing a clear line between seduction and coercion that focuses on consent, may help reduce both perpetration and victimization.

Limitations

Though schools were randomly assigned to the ESE component, levels of the mediating variables at each school are not randomly assigned. Consequently it is not possible to claim that lower mean sexual beliefs, and higher acceptance of sexual coercion risk attitudes and sexual aggression causes higher prevalence rates of sexual coercion. Furthermore, though the current study took an intent-to-treat approach to the analyses, evaluating schools based on their random assignment to ESE, schools varied in the degree that they implemented this component. Some schools primarily used the notice boards and posters, while others implemented additional programming such as the HIV/AIDS peer educator program. However, analyses that used propensity score models to weight schools based on their implementation (low vs high) did not show significant program effects. Furthermore, the same mediating variables were significant predictors of sexual coercion prevalence in the weighted models.

The current study focuses on schools in the Western Cape, and though the sample was ethnically diverse for the region, results may not be generalizable to other populations. In addition, the current study focused on school level factors. It is likely that both school and individual factors contribute to both an individual's risk of sexual coercion and the overall prevalence of sexual coercion in the schools. Future studies should examine the importance of school sexual climate relative to individual characteristics.

Conclusion

Overall the results suggest that schools vary substantially in their overall sexual climate and that school sexual climate is a risk factor for high prevalence of sexual coercion amongst students. Creating a positive environment in which students can learn and feel safe is critical not only for one's sexual health, but also for improving access to education and future opportunities. Students who do not feel safe in school may avoid school (Thapa, Cohen, Guffey, & Higgins-D'Alessandro, 2013) and potentially reduce their future potential as education is the primary route out of poverty (Prinsloo, 2006). Future studies should explore how schools can improve school sexual climate and work towards preventing sexual violence.

Table 4-1.

Experimental design for the HealthWise translational research study.

Experimental Condition	Components			Schools per condition
	Enhanced Teacher Training	Structure, Support, & Supervision	Enhanced School Environment	
1	Yes	Yes	Yes	7
2	Yes	Yes	No	7
3	Yes	No	Yes	7
4	Yes	No	No	7
5	No	Yes	Yes	7
6	No	Yes	No	7
7	No	No	Yes	7
8	No	No	No	7

*Highlighted conditions indicate those conditions receiving the enhanced school environment (ESE) component.

Table 4-2.

Descriptive statistics of school characteristics, school sexual climate, and sexual coercion prevalence across schools.

	Mean/ Percent	Std Dev	Min*	Max
School demographics				
Average class size	36.07	8.06	11.43	59.35
School fees	553.24	595.18	0	2150.00
Total school enrollment	1018.89	267.23	311.00	1659.00
Percent female	0.52	0.07	0.21	0.68
% students with tap water	88.5	8.90	61.97	100.90
% family has motor car	49.1	16.22	18.50	88.81
% Catholic	26.1	9.07	8.03	46.50
% Christian	37.7	14.62	10.46	68.20
% Traditional African Christian	22.2	19.94	0	68.58
% Hindu	0.4	0.60	0	2.23
% Islam	8.4	12.36	0	63.43
% Jewish	0.4	0.53	0	2.31
% Other religion	2.2	1.34	0	6.08
% Black	46.1	39.01	2.11	96.77
% White	7.4	4.34	0	18.49
% Coloured	44.0	35.42	0	92.35
% Indian	0.5	1.39	0	10.55
% Other race	1.7	1.66	0	6.71
% Xhosa speaking	45.7	42.77	0	101.66
Baseline school sexual climate and coercion				
% ever perpetrated sexual aggression	9.75	0.05	0	32.02%
Mean sexual aggression	0.43	0.26	0	1.11
Mean perceived peers sex at least 1x mo.	2.08	0.45	0.92	3.46
Mean perceived peers use condom at least 1x mo.	2.41	0.37	1.08	3.57
Mean sexual behavior norms	2.24	0.33	1.21	3.45
Mean perceived peer forced sex perpetration	1.32	0.31	0.28	2.48
Mean perceived peer forced sex victimization	1.36	0.25	0.55	2.26
Mean coercion norms	1.34	0.25	0.46	2.28
Mean sexual beliefs	2.81	0.26	1.94	3.65
Mean talk with teacher	1.09	0.17	0.41	1.65
Mean coercion risk	0.67	0.26	0	1.28
% Ever coerced (victim)	7.6	5.76	0	26.41
% Never had sex	87.7	6.94	67.95	99.29
Wave 2 school sexual climate				
Mean sexual aggression	0.54	0.22	0.05	1.26

	Mean/ Percent	Std Dev	Min	Max	Mean/ Percent
Mean sexual behavior norms		2.32	0.43	0.62	3.51
Mean coercion norms		1.32	0.28	0.32	2.21
Mean sexual beliefs		2.80	0.27	1.77	3.55
Mean talk with teacher		1.05	0.16	0.48	1.53
Mean coercion risk		0.67	0.20	0.19	1.18
Wave 3 sexual coercion					
W3 Prevalence of sexual coerced in last 6 months (victim)	10.9%		4.51	0.39	32.04

*Note: Missing data imputation can produce values that are outside the range of possible values. This accounts for the uncertainty in missing data imputation and helps maintain variance. Consequently, some imputed values were in the negative range. Though these were maintained in the data, minimums in the table or listed as 0 in order ease interpretation.

Table 4-3.

Total effect of ESE on school prevalence of sexual coercion and hypothesized mediators.

	Wave 3	Wave 2 Mediators				
	Sexual Coercion	Sex behavior norms	Coercion norms	Sex Beliefs	Talk with teacher about sex	Coercion risk attitudes
	estimate (SD)	estimate (SD)	estimate (SD)	estimate (SD)	estimate (SD)	estimate (SD)
Intercept	0.110*** (0.007)	2.322*** (0.061)	1.326*** (0.041)	2.793*** (0.037)	1.055*** (0.024)	0.676*** (0.029)
ESE	0.004 (0.007)	0.107+ (0.063)	0.105* (0.045)	-0.001 (0.039)	-0.013 (0.026)	0.016 (0.029)
SSS	0.002 (0.007)	-0.103 (0.064)	-0.044 (0.040)	0.036 (0.040)	0.027 (0.024)	-0.007 (0.028)
ETT	0.004 (0.007)	0.052 (0.063)	0.0143 (0.038)	-0.022 (0.037)	0.018 (0.025)	0.032 (0.029)
ESE*SSS	0.003 (0.007)	0.0830 (0.061)	0.064 (0.044)	-0.053 (0.037)	-0.004 (0.024)	0.021 (0.029)
ESE*ETT	-0.005 (0.007)	-0.063 (0.068)	-0.045 (0.044)	0.010 (0.039)	-0.010 (0.025)	-0.016 (0.028)
SSS*ETT	-0.005 (0.007)	0.053 (0.063)	-0.035 (0.043)	-0.044 (0.038)	-0.034 (0.024)	0.024 (0.029)
ESE*SSS*ETT	0.001 (0.007)	-0.110 (0.061)	0.0114 (0.037)	-0.064 (0.039)	-0.026 (0.026)	0.001 (0.029)

*** $p < .0001$, * $p < .05$, + $p < .10$

Table 4-4.
*Effect of Wave 2 hypothesized
 mediators on Wave 3
 prevalence of sexual coercion.*

	estimate (SD)
	0.004
intercept	(0.019)
Coercion risk attitudes	0.156*** (0.027)
	0.044
Intercept	(0.039)
	0.048
Coercion norms	(0.029)
	0.288***
Intercept	(0.070)
Positive sex beliefs	-0.064* (0.025)
	0.070
Intercept	(0.041)
Sex behavior norms	0.017 (0.017)
	0.039
Intercept	(0.051)
Talk with teacher about sex	0.066 (0.048)
	0.027*
Intercept	(0.013)
Sexual aggression	0.151*** (0.023)

*** $p < .0001$, * $p < .05$

Chapter 5

Discussion and Implications

This dissertation addresses a critical public health issue facing adolescent boys at a vulnerable period of development: sexual violence. Specifically, this dissertation examined the context and consequences of sexual violence towards adolescent boys and the role of school sexual climate on the prevalence of sexual violence within schools - three topics that have previously received little attention. Past research provided mixed evidence on the seriousness of sexual violence towards boys, both in South Africa and globally (Andersson & Ho-Foster, 2008; Andersson et al., 2004; Jejeebhoy & Bolt, 2003; Krug et al., 2002; Moore et al., 2012; Nduna & Jewkes, 2013; Njue et al., 2005; Olley, 2008; Peterson et al., 2011; Sikweyiya & Jewkes, 2009). However, this prior research had a number of methodological limitations, including an overdependence on qualitative, and cross-sectional research, and a failure to fully account for potential confounding variables. The studies in this dissertation add to this body of literature by providing a deeper understanding of the context and seriousness of sexual violence towards boys, and the importance of school context for sexual violence.

The Problem of Sexual Violence towards Boys

The first two studies in this dissertation highlight the seriousness of sexual violence towards boys. In study 1, boys experiencing sexual violence reported that perpetrators used a diverse range of coercive tactics, including those that are often seen as accompanying more severe sexual violence (Peterson et al., 2011) such as physical force, threats, and blackmail. In study 2, experiencing sexual coercion resulted in an increase in perceived norms of risky sex and coercive behaviors compared to what would be

expected had they not experienced sexual coercion. The results further supported an indirect effect of the experience of sexual coercion on riskier sexual behavior, more frequent sexual behavior, and perpetrating sexual violence a year later through the effect on perceived sexual norms.

Past research suggests that people minimize the seriousness of sexual violence against men and boys and are more likely to believe that the victim would enjoy the sexual encounter when the perpetrator was female (Davies, 2002). The findings of the current study are important as they show that boys (1) report perpetrator tactics that are similar to those reported in the research with adolescent girl victims of sexual violence and (2) experience consequences from their experience of sexual violence. Furthermore, study 2 provides a potential target for interventions to help reduce future sexual risk behaviors and aggression among boys who have experienced sexual coercion: sexual norms.

Beliefs that sexual violence does not happen to boys or that it is not problematic, may stigmatize those boys who do experience sexual violence, contribute to victim blaming, prevent communities from addressing the issue of sexual violence towards boys, and prevent boys from seeking help coping with these experiences. The findings from the current study suggest that interventions should build an awareness of sexual violence towards boys to help reduce stigma. Furthermore, community resources for victims of sexual violence should be made available for students.

Although the studies in this dissertation help to fill some gaps in the research, more research is needed. Future research should use longitudinal designs to identify malleable risk factors for sexual violence, and examine additional consequences of sexual

violence. In addition, designs that allow for stronger confidence in the causal relationships between sexual violence and potential consequences, such as propensity score modeling, are necessary to have a greater understanding of the true implications of these experiences. Such knowledge will help inform what resources and services are most needed for those who have been victims of sexual coercion.

Schools as a Context of Sexual Violence and Prevention

The three studies in this dissertation highlight the influential role of schools in the experience of sexual violence. In study 3, the prevalence of sexual violence in schools was associated with a sexual climate that was more accepting of coercive risk attitudes, more sexually aggressive, and less accepting of positive sexual beliefs. Within schools, peers play an important role in adolescent's school experiences. Nearly half of boys experiencing sexual violence reported that their perpetrator attended the same school as them, and the majority of perpetrators were similar-aged peers (Study 1). Furthermore, boys perceptions of their peers sexual behavior and involvement in sexual violence influenced boys future sexual risk behavior and sexual aggression (Study 2).

Together, these studies highlight the importance of schools taking an active role in preventing sexual violence among youth. As discussed in the introduction to study 3, sexual violence may happen on school campuses, though this is likely not always the case. The school environment can also influence adolescents through acts as a socializing agent that influences youth's perceptions of norms, beliefs, and attitudes (Henry, Schoeny, Deptula, & Slavick, 2007; L'Engle & Jackson, 2008; Zimmer-Gembeck & Hefland, 2008), which may either promote or discourage sexual violence. Consequently, prevention programs should address both malleable risk factors for sexual violence, such

as sexual norms, as well as work towards creating a safe environment within schools. Prevention programs that aim to create a safer environment in the school may have a more immediate impact of sexual violence in schools than prevention programs that aim to change norms and attitudes. Interventions that aim to improve safety within schools with more adult supervision and school-based restraining orders, have been shown to reduce sexual harassment and sexual violence in schools as well as enhance a classroom based dating violence intervention (Taylor et al., 2013).

Intervention programs aimed at reducing sexual risk behaviors often target sexual norms and individual skills and attitudes. However, approaches to sexual risk behaviors that emphasize one's own control of their sexual behavior may be less effective for youth with a history of sexual violence as these experiences provide evidence of a lack of control in their own sexual lives. In addition to understanding how to prevent sexual violence, more research is needed to understand how intervention programs can help reduce sexual risk behavior and sexual aggression perpetration among youth with a history of sexual victimization. The high prevalence of sexual violence in some schools, as highlighted by study 3, suggests that a substantial number of students in some schools have experienced sexual violence. Consequently, evaluations of existing intervention programs should test for differential effects of the intervention for youth with and without a history of sexual violence to better understand if the intervention is effective for youth who are at higher risk of sexual risk behavior.

Study Sample Differences

The demographic characteristics for the overall HealthWise sample of boys and for each of the three studies is presented in Table 5-1. Though the samples for study 2

and 3 appear to be similar to the overall sample of boys with only negligible differences, study 1's sample has some notable differences that should be addressed. Though study 1 was restricted to only boys who reported experiencing sexual coercion at baseline, one may expect this sample to be more similar to study 2 which was restricted to boys who were at risk for sexual coercion. However, there are a few important differences between the study 1 and study 2 samples.

First, boys who experienced sexual coercion at baseline were excluded from study 2, whereas it was specifically these boys that were the focus of study 1. Sexual coercion reported at the beginning of 8th grade (i.e., the beginning of secondary school) likely occurs prior to entering secondary school and may be different than coercion that occurs during secondary school. Consequently, those reporting sexual coercion at baseline (study 1) may be a generally higher risk group. For many of study 1 boys (30%), their last sexual coercion experience was more than 6 months ago, suggesting that they were generally younger at the time of sexual coercion and that they may have a history of childhood sexual abuse. In contrast, study 2 is restricted to individuals who did not have a history of sexual victimization and for whom sexual coercion occurred within the last 6 months.

The differences in study sample may partially explain the differences in the rate of sexual coercion reported in study 1 and study 2. The far higher rate of sexual coercion reported at the end of 8th grade in study 2 (18.5%) compared to that which was reported at the beginning of 8th grade in study 1 (6%) suggests that the transition to secondary school may be a particularly risk time for adolescent boys. Boys go from a setting in which they are likely among the oldest students in primary school to one in which they

are the youngest. This may provide more opportunities for them to be victimized by others in school and to associate with youth who may place introduce them to riskier environments such as drinking establishments and gang involvement. However, some of the differences in the reported rates of sexual coercion are likely an artifact of measurement differences. Study 1 likely underestimates the prevalence of sexual coercion as youth who skipped the sexual coercion question used for that study were excluded from the analyses. However, follow up analyses suggest that a large portion of the excluded youth (76%) reported that the last time they had sex it was forced or that the only time they had sex it was forced. Youth interpret the three sexual coercion items slightly differently and do not necessarily endorse all three items, consequently it is possible that those who skipped the coercion item used in study 1 would not have endorsed it or they may have skipped it because it's meaning was unclear to them. Study 2 takes an inclusive approach to reports of sexual coercion, including youth who endorse any one of the three items measuring sexual coercion, which will result in a higher prevalence than would be expected with a single item. Furthermore, study 2 used missing data imputation and thus would have better been able to capture sexual coercion among those who refused to answer an item.

The lack of difference between study 2 and the overall sample is also notable, as study 2 represents a group that is higher risk for experiencing sexual coercion than the sample as a whole. Though racial characteristics would not inherently increase one's risk for sexual coercion, a history of oppression and violence in South Africa may lead some groups to be overly represented in areas of poverty and where sexual coercion is often more prevalent (Andersson et al., 2012; Krug et al, 2002; Wubs et al., 2009; Ybarra, Bull,

Kiwanuka, Bangsberg, & Korchmaros, 2012). However, the study 2 sample did not differ from the overall sample in any domain, including socioeconomic indicators. The similarity across samples suggests that demographic factors do not necessarily increase one's risk of experiencing sexual coercion.

Conclusion

Sexual violence continues to be a problem across the globe for both male and female adolescents, but past research has overwhelmingly focused on males as perpetrators. The three studies in this dissertation highlights the severity of sexual violence among South African boys and the importance of schools in addressing sexual violence among youth. More research is needed to understand how to prevent sexual violence and the consequences of sexual violence, as well as understanding the relative contribution of school climate and individual factors on the experience of sexual violence.

Table 5-1.
Baseline demographics across study samples.

	All HW boys	Study 1	Study 2*	Study 3* <i>n</i> = 56 schools
	<i>n</i> = 4865	<i>n</i> = 252	<i>n</i> = 1454	
Mean age	14.36 (1.70)	14.63 (1.15)	14.11 (0.88)	14.24 (0.35)
Language Spoken at Home				
English	40.49%	36.25%		
Afrikaans	49.18%	34.92%		
Xhosa	41.41%	65.87%	44.60%	45.64%
Other	23.62%	42.86%		
Type of House				
Shack	13.13%	15.08%	12.23%	
Wendy house or backyard building/room	12.20%	15.87%	11.71%	
tent	0.97%	1.98%	0.86%	
brink house, flat, or apartment	66.96%	57.94%	68.35%	
other	6.74%	9.13%	6.84%	
Tap water in home	89.39%	86.90%	90.40%	88.46%
Family own motor car	52.29%	51.19%	53.80%	49.80%
Race				
Black	43.92%	66.27%	46.50%	46.10%
White	8.13%	12.70%	9.60%	7.43%
Coloured or multiracial	45.45%	19.44%	41.80%	44.00%
Indian	0.60%	0.79%	0.56%	0.49%
Other	1.90%	0.79%	1.52%	1.67%
Religion				
Christian- Catholic	28.39%	26.80%	29.25%	26.12%
Christian - other denominations	35.69%	24.40%	34.15%	37.66%
Traditional African Christian	20.37%	31.20%	22.73%	22.14%
Hindu	0.41%	0.80%	0.27%	0.43%
Islam	8.89%	4.00%	7.68%	8.39%
Jewish	0.43%	1.60%	0.46%	0.41%
Other	2.11%	3.20%	1.76%	2.17%
None	3.70%	8.00%	3.60%	2.68%

*In order to impute multiple datasets, it was necessary to restrict the the number of variables included in the imputatio model. Given the large number of variables needed for study 2 and 3, language variables were not included in the imputation model. The exception is Xhosa, which was included because it was previously found to predict missingness (personal communication, J. Graham, Fall 2014). Similarly, home type was included as a continuous variable for study 3, which is permissible because the response options are ordered; however, relative percentage of each home type across schools is not available.

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EDUCATION

- 2015 **Ph.D., Human Development and Family Studies,**
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Areas of Specialization: Methodology, and Prevention and Intervention Research
- 2011 **M.S., Human Development and Family Studies & Demography**
The Pennsylvania State University, University Park, PA
- 2005 **B.S., Psychology and General Science**
Fordham University, Fordham College at Rose Hill, Bronx, NY

AWARDS

- 2015 Society for Prevention Research Early Career Preventionists Network Travel Grant
- 2014 Grace M. Henderson Graduate Scholarship
- 2014 Society for Prevention Research Early Career Preventionists Network Travel Grant
- 2012 Society for Prevention Research Sloboda and Bukoski SPR Cup
- 2012-2014 NIDA Prevention and Methodology Training Fellowship, Penn State University
- 2012 Society for Prevention Research Early Career Preventionists Network Travel Grant
- 2012 Africana Research Center Research Grant (Awarded but not spent due to conflicting schedules)
- 2011-2012 Penn State University Prevention Fellowship
- 2011 Society for Prevention Research Early Career Preventionists Network Travel Grant
- 2009 Penn State University Robert W. Graham Endowed Fellowship
- 2009 Penn State University Hintz Fellowship

PUBLICATIONS

- Miller, J.A.,** Smith, E.A., Coffman, D., Mathews, C., & Wegner, L. (*accepted*). Forced sexual experiences and sexual situation self-efficacy among South African youth. *Journal of Research on Adolescence*.
- Miller, J.A.,** Caldwell, L.L., Weybright, E.H., Smith, E.A., Wegner, L. & Vergnani, T. (2014). Was Bob Seger right? Relation between free time boredom and [Risky] sex among South African adolescents. *Leisure Science*, 36(1), 52-67. doi:10.1080/01490400.2014.860789
- Miller, J.A.,** Graefe, D., & De Jong, G. (2013). Health insurance coverage predicts lower childbearing among near-poor adolescents. *Journal of Adolescent Health*, 53(6), 749-755. Doi: 10.1016/j.jadohealth.2013.06.024
- Smith, E.A., **Miller, J.A.,** Airhihenbuwa, C.O., Newsome, V., & Sofolahan, Y.A. (2013). Measuring HIV and AIDS-related Stigma across South Africa: A versatile and multidimensional scale. *Health Education and Behavior*. Advanced online publication. doi:10.1177/1090198113515245

SELECTED RESEARCH EXPERIENCE

- 2013-2014 Project Coordinator, *HealthWise South Africa Dissemination to Multiple Schools* (PI: Dr. Linda Caldwell)
- 2011-2013 Research Assistant, *HealthWise Dissemination to Multiple Schools* (PI: Dr. Linda Caldwell)
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