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**IDENTIFYING PREDICTORS OF FORCED SEX IN SOUTH AFRICA AND
ASSESSING THE IMPACT OF HEALTHWISE**

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Demography

by
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Abstract

The experience of sexual violence is associated with numerous negative consequences. In South Africa, the high prevalence of HIV/AIDS exacerbates the risks associated with sexual violence (Dorrington et al., 2006). However, little is known about the psychosocial and behavioral characteristics that may increase (risk factors) or decrease (protective factors) youths risk for sexual violence in South Africa. This thesis describes two related studies that (1) examines behaviors, attitudes, and skills (or the lack of skills) that predict forced sex among South African youth; and (2) evaluates HealthWise, a comprehensive substance use and HIV/AIDS prevention program, on the significant predictors of forced sex.

For study 1, analyses were restricted to youth in the control group who were virgins at wave 1 and sexually active by wave 5, who had reported forced sex between Waves 1 and 4. The final sample consisted of 327 sexually active youth ($M age = 15.9$), the majority of whom were male (59.9%). Of these youth, 28 reported experiencing forced sex during the past 6 months. Results revealed that greater sexual agency and condom use self-efficacy were protective against experiencing forced sex. Conversely, compared to their sexually active peers, youth who reported forced sex were more likely to believe it is a girl's duty to have sex with an older man and condone the use of substances to obtain sex. Youth who had been forced to have sex were more likely to use alcohol or marijuana at the time of their last sexual encounter. Risk avoidance skills, recent alcohol use, and gender were not significantly different between sexually active youth and those who experienced forced sex. As expected, there was no difference between number of partners, length of sexual history, or relationship to partner, which counters the common colloquial stance that the victim's promiscuity is to blame for sexual violence. These results suggest that youth who experience sexual violence are not particularly promiscuous.

Study 2 consisted of 6,341 students who participated in either the control or treatment conditions of the HealthWise study, which began at the start of student's grade 8 school year. Results support that HealthWise students were less likely to drink alcohol at last sex than the control group, as reported at the 6 month follow-up. HealthWise students did not differ significantly from the control group on reports of sexual agency, condom use self-efficacy, substance use with sex norms nor belief that it is a girl's duty to have sex with an older man.

Results of the two studies discussed provide further understanding of forced sex in South Africa and identifies areas for future research. Study findings suggest that youth who experience forced sex differ on several, possibly malleable factors. HealthWise reduced youth's likeliness to use substance at last sex, which is a strong predictor of forced sex. The ultimate goal of interventions is to change behavior; consequently, this finding has important implications for future interventions, despite the lack of treatment effect on attitudinal predictors measured. Overall, findings suggest a need for future research that examines the context of forced sex in South African in order to better inform intervention development.

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Chapter 1

Introduction

Forced sex can be a devastating experience both emotionally and physically. Men and women who experience forced sex often experience symptoms of posttraumatic stress, depression, eating disorders, difficulty sleeping, and are preoccupied with danger (Brown, Testa, & Messman-Moore, 2009; Faravelli, Giugni, Salvatori, & Ricca, 2004; Messman-Moore, Coates, Gaffey, & Johnson, 2008; Walker, Archer, & Davies, 2005). South African adolescents who experienced rape and attempted rape are more likely to attempt suicide, have suicidal ideation, substance use and engage in anti-social behaviors (King et al, 2004). When sex is unwanted youth are less likely to use contraception (Abma, Driscoll, & Moore, 1998; Vundule, Maforah, Jewkes, & Jordann, 2001). South African young women, whose first sex was coercive, were more likely to experience unwanted pregnancies and report STIs (Maharaj, & Munthre, 2007). The lack of control in a forced sex encounter likely further limits an individual's ability to use condoms and other protective behaviors, increasing their risk for contracting sexually transmitted infections (STIs) and HIV/AIDS. Additionally, abrasions in the vagina or anus resulting from forced sex serve as transmission routes for STI and HIV/AIDS (MacPhail, Williams, & Campbell, 2002). STIs can lead to later health complications including infertility and cervical cancer, posing a major health risk to adolescents.

Although sexual violence exists across the world, this particular study will focus on forced sex in South Africa where repercussions may be particularly salient due to the prevalence of HIV/AIDS. A tenth of adolescents and young adults (age 15-24) in South Africa are infected with HIV/AIDS, with rates of new infections continuing to increase throughout young adulthood

(Dorrington, Johnson, Bradshaw, & Daniel, 2006). Furthermore, South African adolescents who experience forced sex are less likely to plan on having an HIV test despite a greater proportion believing they are infected with the virus (Andersson et al., 2004).

Many countries have attempted to minimize sexual violence through the implementation of prevention programs and policy reform. In the United States, university initiatives to reduce sexual violence have become widespread (Anderson & Whiston, 2005; Dialge, 2009) and programs geared towards safe dating in high schools have begun to emerge (Foshee et al., 1998; Jaycox et al., 2006). However, despite the higher prevalence of forced sex in South Africa, similar school-based dating violence prevention programs do not exist. Additionally, it is unclear what factors prevention programs should address as there is no empirical research on factors that increase South African youth's susceptibility to forced sex. The aim of this research is to identify behaviors, attitudes, and skill deficits that predict forced sex among South African youth in order to identify potential targets of intervention. Comprehensive prevention and intervention programs that target multiple problem behaviors through simultaneous competence promotion and risk reduction may be the most efficient approach for interventions (Masten, 2001; Pollard, Hawkings, & Arthur, 1999; "Using a Developmental Framework", 2009). Consequently, this study will also look at the impact of HealthWise, a comprehensive substance use and HIV/AIDS prevention program, on the potential correlates of sexual assault.

Defining Forced Sex in Research

Most research, in both developed and undeveloped countries, acknowledges forced sex as sex that is acquired through the use of physical force, threats of physical violence, or psychological coercion (which includes the use of relentless pleading, pressure, trickery, power,

or blackmail to obtain sex), including when alcohol and drugs prevent a victim from consenting (incapacitated rape), regardless of victim or perpetrator's gender. Additionally, Heise, Moore, and Toubia (1995), include sexual encounters that arise from cultural expectations and economic circumstances that lead one to engage in sex against his or her will in order to prevent "severe social and physical consequences" (p.6) in their widely cited definition of forced sex. Although many researchers in developing countries discuss how cultural context and lack of resources may propagate sexual violence (Jewkes & Abrahams, 2002; Wood, 2005), most studies do not include transactional sex or sex based on cultural expectations in their measurement of forced sex (with some exceptions).

Although each form of forced sex has distinct characteristics, research has found that rape, incapacitated rape and verbal coercion all have negative psychological consequences (Brown et al., 2009) suggesting that using a broader definition of forced sex is important for understanding its implications for youth. Despite the general acceptance of a broad definition of forced sex, many researchers choose to focus their research on specific forced sex experiences. Additionally, despite a common understanding of forced sex amongst researchers, responses to questions regarding forced sex, likely vary depending on question wording and cultural perspectives. The meaning of forced sex in the South African context will be discussed later in this paper.

The World Health Organization (WHO) reserves the term 'rape' for non-consensual "penetration ... of the vulva or anus, using a penis, other body parts or an object" (Krug, Dahlberg, Mercy, Zwi, & Lozano, 2002, p. 149). Other forms of unwanted sexual contact, including oral sex, are categorized more broadly as sexual violence. Sexual harassment and unwanted sexual contact that does not include penetration may lead to negative outcomes and

illuminate experiences of sexual violence; however, few studies have explored these experiences in developed countries (Jejeebhoy & Bott, 2003). Consequently, the literature review for this paper will not include such experiences. Although the WHO's definition of rape is consistent with the definition of forced sex (all non-consensual sex) discussed above, this study will reserve the term rape for studies discussing physically violent, non-consensual sexual encounters. Coercion will include only situations where sex is forced without physical violence (including threats, blackmailing, etc). The term forced sex will include all instances of non-consensual sex including rape and coercion. These distinctions are made in order to provide an accurate representation of the literature.

Cultural Context and a History of Violence

For nearly the entire twentieth century, South Africa was led by regimes which segregated the population based on skin color and restricted rights for non-white Africans, especially for black Africans (Department of Health, 2007). After World War II, official apartheid policies favoring the white minority were initiated. During the final decade of apartheid regime, South Africa was characterized by extreme violence where torture, murder, and rape were not uncommon. In 1994, apartheid regime came to an end, however, the country remained plagued by many of the problems bred under apartheid, including crime, educational disparities, and poverty. The struggle against apartheid and closures of schools resulted in many undereducated youth, with many black youth having only an elementary education (Deegan, 2001). Illiteracy was a common problem among Black and Coloured Africans, particularly in rural areas where it reached 61% and 68% respectively, leaving youth unprepared for participation in the workforce. High rates of unemployment and poverty propelled crime, which was often motivated by personal issues.

The tumultuous history of South Africa shaped (and was a consequence of) perceptions of masculinity (Morrell, 2001). During apartheid, South Africa was ruled by white men who used violence and power to sustain privilege while Black communities maintained social hierarchies with women at the bottom. Use of violence to demand control (by white supervisors) in the workforce, was met by violent resistance, perpetuating the use of violence as a means of conflict resolution. Under apartheid, crime became pervasive and the control of crime was violent. Masculinity in South Africa was defined by defensiveness, violence, and the display of power for white and non-white men. However, for the disempowered and politically emasculated black man, honor and respect could only be gained through violence (Morrell, 2001).

Violence Against Women

Power and control were also associated with masculinity in domestic life. Before 1994, married women and the property they brought to the marriage were under the control of their husbands (Deegan, 2001). Fathers were the only legal guardian of children. After apartheid, programs and policies were implemented to improve the lives of women. In spite of this, deep-seated cultural attitudes about gender inequalities remain and violence continues to be used to reinforce gender hierarchies. South African youth report the common use of slapping and kicking by boyfriends as means to discipline and control their girlfriends, a practice largely considered acceptable, provided no visible damage is done (Wood, 2008).

Men report that beatings are often a result of feelings of lost agency that provoke anger and humiliation brought on by a young woman's actions (Wood, 2008). In this context it is often believed that women are unequal to men and are supposed to respect and honor men; beatings, therefore, are considered justifiable when a woman makes a man feel foolish or questions his

control/authority. Women possessing traits considered masculine, such as power or cleverness, are seen as needing to be "put in place" because they threaten the social hierarchy. Girls generally are selective in disclosing the assault because of shame associated with the assumed wrong-doing on their part. Additionally, girls may not disclose violence in an attempt to avoid the issue escalating (with male kin getting involved or further beatings within the relationship). The normalcy of relationship violence is further reinforced by female friends and relatives who encourage girls to "persevere uncomplainingly through hardship" (Wood, 2008). It is important to note that violence is not accepted by all South African women.

Sexual Violence in South Africa

Views on sexuality are strongly linked with views on gender norms. Men are often seen as having an insatiable appetite for sex, making it a girl's responsibility to keep men's desires tamed (Jewkes, Penn-Kekana, & Rose-Junius, 2005; Petersen, Bhana, & McKay, 2005). Wearing sexy clothes that accentuated a full figure would be seen as provoking men and therefore seen as her fault if a rape were to occur. A man that does not have sex when he desires it is seen as weak and a woman who concedes too quickly to a man's requests for a relationship (in which men perceive sex to be obligatory) may be perceived as promiscuous (Wood, Lambert, & Jewkes, 2007). Sexual violence is an additional mechanism for asserting control over others, and may be used to punish a girl for refusing a man's sexual advances (Wood, 2005), for being too assertive and independent, and as a means of obtaining a girlfriend (Petersen et al., 2005).

Women are expected to say no to sex, leading many youth to question the meaning of "no", believing that a girl who says "no" actually means "yes" (Andersson et al., 2004). Differentiating between seduction and coercion can be quite difficult and contributes to

difficulties in measuring forced sex. The prevalence of rape is estimated at 5.8% -9.7% (Department of Health, 2002; King et al, 2004). However, rape is generally reserved colloquially for situations that involve physical violence and is typically perpetrated by a stranger (Wood, 2005). Men especially are less likely to perceive sex that involves trickery or coercion as rape, particularly if they believe that the woman deserves it. Until 2007, this perspective of forced sex was reinforced by South African law which defined rape as a man having sex with a woman without her consent, excluding coercive sex and male victims from the law's protection (Jewkes & Abraham, 2002; Mattheyse, 2007). The current South African law states that rape is "all forms of sexual penetration without consent, irrespective of gender" (Criminal Law Amendment Act, 2007). Nonetheless, over half of both girls and boys believe that forced sex does not constitute sexual violence when it is perpetrated by someone they know (Andersson et al., 2004), suggesting that assessing 'rape' may greatly underestimate experiences of forced sex in South Africa.

Girls often do not feel they can refuse sex with their partner in fear that a refusal would lead to being beaten or that their boyfriends would leave them (Jewkes, Vundule, Maforah, & Jordaan, 2001). Additionally, 30% of all youth do not believe a girl has the right to refuse their boyfriend's sexual advances (Andersson et al., 2004). Given the levels of fear and lack of control within a relationship, it is not surprising that nearly three-quarters of sexually active girls report that their first sex was against their will (Jewkes et al., 2001), suggesting that sexual coercion may be far more common than the rape estimates described above.

Although most research focuses on sexual violence among girls and women, Sikweyiya and Jewkes (2009) found forced sex to be a common experience among male adolescents and young adults in the Eastern Cape. Andersson and colleagues (2004) found forced sex to be more

common among young boys than young girls, but more common among older girls (15-19) than older boys. Among boys, perpetrators are most often female adults, but male perpetrators are not uncommon, particularly among young boys (Andersson & Ho-Foster, 2008). Actual rates of forced sex are unclear with conflicting reports from two nationally representative studies. In a large national study, 8.6% of adolescents reported forced sex over the past year (Andersson et al., 2004), with lifetime forced sex reported by 44% of 18 year old male, South African students (Andersson & Ho-Foster, 2008). However, the 2008 South African Youth Risk Behavior Survey reports substantially lower lifetime rates of forced sex (Reddy et al., 2010). Among 18 year olds, 14.2% of males and 11.3% of females reported ever experiencing forced sex. However, at each grade level (8th to 11th grade), between 7.0% and 16.7% of students reported ever experiencing forced sex. Additionally, Njue, Askew, and Chege (2005) found that 23% of Kenyan boys reported that their first sexual encounter was unwanted, but had sex because they were either ‘sweet talked’, persuaded or forced into having sex. This suggests that reports of coerced sex may be underestimated because youth may not report unwanted sex as forced sex if they ultimately consent after they are ‘sweet talked’. Despite conflicting reports, at least one out of every ten students experience forced sex. Furthermore, over two-thirds of male and female perpetrators of forced sex were also victims of forced sex themselves (Anderson et al., 2004); suggesting that understanding forced sex experiences is important for both male and female youth.

Sexual Agency as a Potential Protective Factor

A potential protective factor which may reduce the likelihood of forced sex is sexual agency. Agency is the ability to exert influence on decisions and actions in one’s life. Sexual agency is the ability to make willful decisions regarding one’s sexual life (Crown & Roberts,

2007), which becomes possible through the understanding of sexual behaviors; knowledge of safe sex practices; and the belief that it is socially and personally acceptable to refuse or engage in sexual acts according to one's values. According to Bandura (1989), people employ agency through self-efficacy beliefs. Believing in one's own ability to exercise control in sexual encounters can help reduce risky sexual behaviors (Cooper, Shapiro, & Powers, 1998) and enable youth to successfully refuse unwanted, possibly coercive sex. Maharaj and Munthre (2007) reported that young, South African women whose first sexual experience was forced were less likely to feel confident in their ability to convince their partner to use a condom. The author's suggested that experiences of forced sex may increase fears and reduce women's ability to negotiate safer sex; however, due to the cross-sectional nature of this study the direction of this relationship between agency and forced sex is unclear. The ability for agency to reduce forced sex among youth is supported by Walsh and Foshee (1998), who found high self-efficacy in avoiding forced sex to reduce the likelihood of early adolescents experiencing forced sex by a date or peer in the United States.

Individuals develop an understanding of appropriate behaviors through cognitive processing of feedback on their own experiences and vicarious experiences (Bandura, 1977). Consequently, sexual agency may be less common because of the cultural norms promoting submissiveness among South African girls and women. Peers and media, in particular, have been shown repeatedly to serve as socialization agents on adolescents' development (Henry, Schoweney, Deptula, & Slavick, 2007; L'Engle & Jackson, 2008; Marin et al., 2000; Miller, Norton, Curtis, Schualeveldt, & Young, 1997; Ward & Rivadeneyra, 1999). Although these influences are part of normal development, their influence is not always positive. Exposure to discussions, attitudes, and knowledge of sexuality (through family, peers, or media) shape

adolescents' understanding of sexual norms and perceived consequences of sex. These factors subsequently influence adolescents' sexual behaviors. Unfortunately, South African adolescents are often exposed to messages from family and friends that may inhibit their development of sexual agency. For youth who are agentic in their sexual lives, agency may be a powerful tool in negotiating sexual contexts and reducing forced sex.

Although the South African media has the potential to shape discourse pertaining to HIV/AIDs and sexual risk, it has traditionally focused primarily on HIV/AIDS policies (Jacobs & Johnson, 2007). HIV/AIDS stigma creates a climate in which attempts to exert agency, through requesting condoms or other safe sex practices, may be seen as an accusation of HIV/AIDS infection or infidelity (Selikow, Ahmed, Flisher, Mathews, & Mukoma, 2009). However, media may increase stigma and promote inaccurate knowledge by airing negative messages and misguided information (Jacobs & Johnson, 2007). No studies have examined the impact of mass media (that was not intended as an intervention) on adolescent sexual behavior and agency in South Africa. Nonetheless, media-based interventions have emerged throughout Africa in an attempt to actively promote sexual agency and gender equality (particular interventions will be discussed later). Such interventions have shown some promise, suggesting that media does effect sexual agency, attitudes, and behavior among South African youth (Pettifor et al., 2005b; Scott & Harrison, 2009; Soul City, 2007).

Social norms regarding masculinity and femininity may inhibit adolescents' development and ability to express sexual agency, which may increase their risk for forced sex. In a review of literature from developing countries, Jejeebhoy and Bott (2003) found that gender norms that encourage male toughness and dominance may perpetuate sexual violence and diminish communication about sexual matters. South African norms on masculinity prescribe a strong

libido and numerous sexual conquests, creating pressure for boys to engage in sex regardless of their own will (Peterson et al., 2005; Selikow, Ahmed, Flisher, Mathews, & Mukoma, 2009). Boys, who are not sexually active, are often rejected by peers. Likewise, having few sexual partners or using condoms may also be cause for teasing and ostracizing. Pressure for boys to engage in sex is not limited to male peers. Girls may also force boys into a sexual relationship by threatening to tell others that the boy did not desire to have sex (Selikow et al., 2009). Both girls and boys in South Africa lack communication skills to negotiate sexual experiences, leaving violence and coercion as the primary mechanism for exerting one's will (Wood & Jewkes, 1997). Greater sexual agency may help adolescents communicate their desired sexual behaviors and reduce coercive sex, particularly in the context of a relationship.

Sexuality can also be a symbol of status for girls, resulting in tremendous pressure to engage in sex (Selikow et al., 2009; Wood, Maforah, & Jewkes, 1998). Although girls are pushed by peers to have sex, girls who express a desire for sex or engage in 'too much sex' are viewed as promiscuous (Wood et al., 2007). Rather, girls receive messages that promote passivity and discourage agency in sexual relationships. Within a sexual relationship, the male partner's pleasure is of foremost importance, with little discussion of girl's satisfaction (Mantell et al., 2009; Selikow et al., 2009). South African, female college students report that girls often submit to their partners will even when they know the behaviors are unsafe or painful (such as using vaginal drying agents). In the United States, adolescent girls are less likely to have sexual agency when they have traditional feminine views of dating, which support ideas that girls should be passive in flirtation and dating and use their bodies to attract men (Kiefer & Sanchez, 2007; Tolman, Kim, Schooler, & Sorsoli, 2007). Traditional gender roles may perpetuate power discrepancies that are already frequent in heterosexual relationships.

Young adult women who feel less powerful in a relationship have less agency in sexual decisions (Soet, Dudley, & Dilorio, 1999). When women perceive their male partner to have more power, they have less self-efficacy with condom use, sexual refusal and discussion skills (all components of sexual agency). Furthermore, they are more likely to believe their partner will react negatively to discussions of sex or requests to use condoms. These women are also less likely to influence actual sexual encounters with their partner including when to have sex, where, and what type of sex they will have (Bowleg, Lucas, & Tschann, 2004; Soet et al., 1999).

Among South African youth, the male partner typically holds the power and is the source of sexual knowledge for the female partners (Wood et al., 1998). Information about the mechanics of sex and contraception are transmitted from a male partner to their female partner. Boyfriends as a source of information is problematic as they often provide inaccurate information. However, most research on relationship power dynamics and agency in South Africa focuses on girls, who often date much older men (Jewkes et al., 2001; Luke & Kruz, 2002; Manzini, 2001). Although older men often have the power to negotiate the terms of a sexual relationship with their younger partner, this may not be the case for adolescent boys.

In the United States, only 44% of girls report wanting their first sexual encounter, the remainder are either ambivalent or report not wanting the encounter (27% and 29% respectively), despite reporting that the encounter was consensual. Although unwanted sex does not constitute forced sex if it is consensual, it does suggest a lack of sexual agency among adolescent girls. The ability to refuse undesired sex is an important component of sexual agency. Adolescents who have sex to appease a partner are more likely to engage in risky sexual behaviors including using less effective birth control practices resulting in more unintended pregnancies (Cooper et al., 1998).

Research has found that rejection sensitivity and sexual assertiveness to be related to experiences of forced sex (Testa, VanZile-Tamsen, & Livingston, 2007; Young, & Furman, 2008). Adolescents who are particularly sensitive to rejection may have difficulty exerting agency in sexual situations, which increases their risk for forced sex. Women low on assertiveness skills likely lack sexual agency making it difficult to refuse sexual requests. Additionally, women who lack agency may be unable to get out of a coercive relationship, which opens up the opportunity for repeated victimization. Petersen and colleagues (2005) also found a lack of sexual agency to contribute to forced sex among South African youth. Girl's lack of assertiveness and refusal skills is seen as contributing to forced sex. Boy's inability to obtain a girlfriend because of fears of talking with girls is also seen as a contributing factor to forced sex. Rather than developing communication skills to talk to girls, they force them to have sex.

In cultures where sexuality is looked at with secrecy and shame, adolescents may be hampered from exploring their sexuality and developing sexual agency. In South Africa, strong disapproval of sex and cultural taboos on talking about sex, diminishes sexual agency and reduces adolescents likelihood to engage in safe sex out of fear that safe sex practices will leave evidence of their sexual activity (such as condoms or birth control prescriptions, Lesch & Kruger, 2005). For South African girls, sexual agency within a romantic relationship is rare. About three-quarters of girls fear beatings if they refused to have sex with their boyfriends and about two-thirds fear their boyfriends would leave them if they refused (Jewkes et al., 2001). Nevertheless, fostering sexual agency can promote healthy sexual lives, reducing risky sexual behaviors and increasing satisfaction (Kiefer & Sanchez, 2007; Soet et al., 1999). Although communication with peer role models and family (Mueller et al., 2010) can reduce risky sexual

behaviors, sexual communication is uncommon in South Africa (Lesch & Kruger, 2005; Wood et al., 2007)

Cultural Norms Supporting Obedience

Respect for elders and obedience is highly valued in traditional South African culture. In ethnographies, South African youth frequently report difficulties in refusing and disobeying those older than them (Jewkes et al., 2005; Sikweyiya & Jewkes, 2009). Both young men and young women report experiencing forced sex after being led by someone older than themselves into situations which they could not get out of, such as watching over someone's house or agreeing to help find something that has been lost and being led to a secluded area. These youth report great discomfort in disagreeing with older men or women. Young men and women who believe it is a girl's duty to have sex with an older man, are likely those youth who would have the most difficulty refusing advances from older individuals and avoiding situations with the elders from which they cannot escape. Consequently, these youth may be more likely to experience forced sex than their peers who do not share this belief. Furthermore, the World Health Organization (World Health Organization, 2010) advocates that changing gender norms are effective strategies in reducing partner and sexual violence.

Alcohol and Drug Use in the Context of Sex

Sexual victimization is often related to alcohol and/or drug use of both perpetrator and victim (Foshee, Benefield, et al., 2004; Messman-Moore et al., 2008). Substance use may pose a risk through two mechanisms. Intoxication may increase one's vulnerability by impairing a victim's ability to physically resist forced sex. Sober women are more likely to successfully resist forced sex attempts than intoxicated women (Abbey, Ross, McDuffie, & McAuslan, 1996;

Harrington & Leitenberg, 1994). Secondly, it may increase one's exposure to risk by increasing their likeliness to associate with other people who use alcohol and drugs. A fifth of college men believe it is okay to pressure a girl into having sex if they had been drinking (McAuslan, Abbey, & Zawacki, 1998, as cited in Abbey, 2002). Men also believe that alcohol increases men and women's sexual arousal, which may increase their likeliness to misread women's behaviors as flirtation (Abbey et al., 1996; George & Norris, 1991). Among South African boys alcohol is used to build courage and power to discipline their girlfriends (Wood, 2008), that may make them more prone to perpetrating forced sex.

Research on American women has consistently found alcohol and drugs to be associated with sexual victimization, including use by the perpetrator and the victim (Messman-Moore et al., 2008; Testa, Livingston, Vanzile-Tamsen, & Frone, 2003). Although most of this research has been done with college students and adults, similar findings have been found among high school students (Foshee, Benefield, et al., 2004; Siegel & Williams, 2003). In a longitudinal study, Testa, Hoffman, and Livingston (2010) found female, college freshman who engage in binge drinking are more likely to experience sexual victimization. For students who were previously victimized, alcohol use also mediates the association between previous victimization and revictimization. Women who experienced victimization in high school were more likely to engage in risky behaviors in college, including alcohol use, which further increased their risk for revictimization. However, the impact of alcohol may be dependent on the relationship of the perpetrator to the victim. Some research indicates alcohol use is only associated with increased risk for forced sex when the perpetrator is not a romantic partner (Testa et al., 2010; Testa et al., 2007). Romantic partners already have opportunities to be alone with their partners, so the use of alcohol may be less necessary for force sex to occur.

Women who drink alcohol are perceived as promiscuous by college men (Abbey, 2002; Martin & Hummer, 1989; George, Cue, Lopez, Crowe, & Norris, 1995). Consequently, men may believe that women who are at bars and parties want sex even if they show resistance to sexual advances (Norris & Cubbins, 1992; Norris & Kerr, 1993). Similar views are expressed in South Africa, where local culture dictates that girls who drink alcohol and attend parties and taverns are less pure (Wood, 2005). Girls who accept a drink from a man may be thought of as providing implied consent for sex. In a cross-sectional study of South African youth, King and colleagues (2004) found that youth who ever used cigarettes, drugs or alcohol were more likely to have had experienced forced sex. Due to the cross-sectional nature of this study, it is unclear if the substance use was a cause of forced sex or if use was a result of the forced sex, as substances may be used to cope with the experience of forced sex.

American youth who perceive more positive consequences from alcohol use are more likely to experience forced sex (Messman-Moore et al., 2008), suggesting adolescents may not always be aware of the risk created by alcohol. In a study of American, female, college students, Gidycz and colleagues (2007) did find students who drank more alcohol to be more likely to perceive their risk for forced sex to be moderate or high. However, the majority of students believed they were at low risk for victimization. Contrarily, Norris, Nurius, and Dimeff (1996) found that although women in a sorority were aware that alcohol used increased women's risk for forced sex, women perceived their own risk for forced sex at parties to be low.

Intervention and Prevention Programs in South Africa

Although forced sex is not a volitional act, organizations such as the United Nations and the World Health Organization have established worldwide initiatives to reduce sexual

victimization, recognizing the need for prevention of forced sex. The establishment of prevention programs assumes there are some factors that may increase a person's susceptibility to sexual assault and that these factors are malleable.

South African interventions pertaining to adolescent sexuality are typically framed as HIV/AIDS prevention. Nonetheless, these programs often address sexual violence and include messages geared towards respecting an individual right to decide when they wish to have sex, promote positive attitudes towards condom use and abstinence, and promoting discussion of HIV/AIDS and sexuality (Coulson, 2002). Because of the scope of the HIV/AIDS epidemic, an attempt to address HIV/AIDS at a national level has led to the large scale implementation of prevention programs. In some cases, systematic evaluation of these interventions was overlooked in order to implement interventions rapidly and extensively. Unfortunately, this sacrifice limits researchers' understanding of the true impact of these interventions. However, the large scale implementation of these programs has made HIV prevention programs available to nearly all of South Africa.

In a review of national HIV prevention initiatives, Scott and Harrison (2009) reported that 90.2% of youth age 15-24 years old had been exposed to at least one HIV prevention media campaign in 2008. However, the reach of interpersonal interventions is far less promising. Less than 30% of youth age 12-24 report involvement in prevention activities at either community or educational settings. The disparity in potential reach of interpersonal interventions compared to media or social marketing campaigns may be one reason why social marketing campaigns have largely dominated HIV/AIDS prevention in South Africa and have been widely used in other sub-Saharan countries.

Although actual reach of social marketing campaigns varies substantially based on the diversity of methods used, length of program, and quality of supervision in outreach initiatives (including peer educators), some programs have managed to reach between 82% and 92% of their targeted populations (Agha, 2002; Pettifor, MacPhail, Bertozzi, & Rees, 2007; Scott & Harrison, 2009; Usdin, 2005). In South Africa, Soul City and loveLife are the most expansive HIV prevention initiatives.

Soul City. The Soul City campaign incorporates a television program (13 episodes per series), a radio show (30 to 60 episodes) and print materials to promote accurate knowledge of HIV/AIDS, reduce HIV/AIDS stigma, and shape positive social norms, attitudes, and behaviors pertaining to numerous other health behaviors (Soul City, 2005). The program targets adults and older adolescents age 16-65 and aired its tenth series in 2009. For youth age 8 to 15 years old, the Soul City Institute developed Soul Buddyz, which incorporates clubs, television programming, radio and print materials (Soul City, 2008). Although each series addresses HIV/AIDS, other social issues are also addressed such as personal finances, hypertension, violence against women (series 4); small business development, rape, and disability (series 5); and alcohol abuse and violence (series 10; Soul City, n.d.).

Evaluations were conducted for each series independent of the effects of prior series. Soul City 4 was found to have a positive impact on individual attitudes and perceptions of social norms towards violence against women (Usdin, 2005). Additionally, those exposed to Soul City were more likely to contact a violence against women organization/service; talk about domestic violence during the period when Soul City 4 aired; and do something to stop domestic violence. In a 2007 evaluation, exposure to Soul City (series 7) was found to reduce HIV stigma, voluntarily obtain HIV testing, and increased reports of condom use at last sex, with non-regular

partner, and with regular partner. However, condom use outcomes were most affected by exposure to print materials, which has more limited reach (57% of those age 16-24) when compared to Soul City and Soul Buddyz television (79% and 81% of those age 16-24, respectively). Print materials also increased self-efficacy to prevent HIV infection. Exposure to all forms of Soul Buddyz reduced HIV stigma (Soul City, 2008). Youth who were exposed to Buddyz Club, radio program, and print materials reported more positive views towards condom use and fewer sexual partners as a means to prevent HIV infection, but like with Soul City 7, impact was strongest for print materials.

loveLife. Funded by the South African Government and the Henry J. Kaiser Foundation, loveLife aims to reduce HIV/AIDS infection by addressing social norms and structural factors that are both rooted in and contribute to sexual coercion, gender inequality, lack of sexual discourse within families, and high risk sexual behaviors. At the core of the loveLife approach is the idea that risk behavior is not due to lack of knowledge or misperceptions of risk, but rather high tolerance of risk (loveLife, 2009). loveLife address HIV/AIDS risk factors at both the individual and societal level through (1) media (ie. public service announcements on television and radio, radio programs, print media, billboards); (2) programs to strengthen community institutions (ie. promoting youth friendly services and providing support to clinics, training educators, sport and recreational activities); (3) interpersonal contact (ie. lifestyle programs, helplines, youth festivals); and (4) support services for community and parents. Through these initiatives, loveLife had reached 79.1% of South African's age 15-24 in 2008.

In 2003, Pettifor and colleagues (2005b) conducted a cross-sectional study to evaluate the impact of loveLife. To adjust for the cross-sectional nature of the study, the authors used propensity modeling to adjust for selection effects. The study found an association between

loveLife exposure and various risk behaviors including, increased condom use, HIV testing, and discussing HIV with friends and families. Additionally, results suggest a dose effect such that those exposed to more components had a greater increase in likeliness to use condoms consistently. Furthermore, exposure to interpersonal (face-to-face) components of loveLife was associated with lower odds of HIV infection. Media programs did not impact HIV infection rates, but did increase reports of safer sex (Scott & Harrison, 2009). Despite statistical significance, the effects of media on reported behavior was low (OR = 1.03 - 1.12). Nonetheless, the large reach of media programs may allow these small effects to have fairly substantial impacts on the population as a whole. Lastly, an evaluation of two loveLife community interventions, Y-Centres (youth centers) or National Adolescent Friendly Clinics, found no impact of living in communities with these resources on the prevalence for HIV or other STI compared to those living in communities without these services (Pettifor et al., 2005a).

Because no baseline evaluation was conducted prior to implementation of loveLife and the majority of South African youth have been exposed to its message (Pettifor et al., 2007), the results of these studies must be interpreted with caution. Furthermore, loveLife has been criticized for incorporating a theoretical model only after the program was already implemented and producing some media messages that are at times confusing (Coulson, 2002).

Implementation of comprehensive and large scale programs require extensive resources in the form of money, time and manpower. The evaluation of individual components of loveLife would allow researchers to understand, which components (if any) are producing positive changes in South African youth. Such understanding may ensure that limited resources are not being used for programs that are either ineffective or iatrogenic.

Life Orientation. The South African Department of Health and Department of Education instituted the Life Orientation Program in an attempt to address the HIV/AIDS epidemic through teaching life skills to youth. Life Orientation is not a single established intervention, but rather guidelines for educators to select and utilize various programs (Visser, 2005). Consequently, there is little consistency in quality, quantity, or content of Life Orientation curricula and minimal implementation of Life Orientation is not uncommon (Bhana et al., 1995; Visser, 2005). However, schools that offer theory driven programs that are well implemented may see positive impacts of the curriculum. The “Dare to be Different” program (D2BD) was developed to address the Life Orientation curriculum for grades 6 and 7 through teaching life skills such as communicating, resisting peer pressure, and problem solving (Sapiano, Nelson, Sohaba, & Esu-Williams, 2008). The program was implemented and evaluated in Mpumalanga Province. Students in D2BD are encouraged to discuss issues related to sexuality with their parents/guardians using take-home activities. Additionally, students may become a student supporter, who assists with small group activities, awareness projects and drawing the teacher’s attention to students who may need additional help. Although the program was well received by students and teachers, a complete evaluation of the program is not yet available.

Interpersonal Interventions, Small Scale. Interventions that work directly with youth may be able to have a greater impact on those involved than indirect interventions such as media campaigns. One such program, Stepping Stones, attempts to reduce risky sex and HIV/AIDS infections through empowering youth and improving gender equality within relationships (Jewkes et al., 2006). The intervention used a school-linked, interactive group format led by a same-gendered facilitator to promote sexual knowledge, dialogue and reflection on behaviors and attitudes. Young men who participated in Stepping Stones reported less physical and sexual

violence two years after program when compared to the control group (Jewkes et al., 2008). Although the study used a quasi-experimental design with potential for selection bias, these findings suggest that interventions in South Africa may be able to reduce sexual victimization among youth, particularly if men are included. Unfortunately, young women did not report a similar reduction in their experiences of physical and sexual victimization. The patriarchal norms in South Africa may allow men to make changes in their sexual lives more easily than women. However, reduced incidences of Herpes Simplex Virus Two (HSV-2) among women, suggests that women were able to gain some control over their sexual encounters (Jewkes et al. 2008).

Qualitative research from Stepping Stones suggest that lessons on assertiveness and communication skills can improve communication and openness on sensitive topics such as HIV and sexuality with both parents and school staff (Jewkes, Wood, & Duvvury, 2010). Youth who participated in the program were empowered, allowing them to share information, such as proper condom use, and discourage partner abuse and drug use among friends. The spillover effect of Stepping Stones from participants into the community provides hope for interventions' ability to impact social norms. Unfortunately, girls were less likely to share information learned because it was less permissible by social standards of femininity. Attempts to discuss relationship with parents were sometimes met with resistance from parents (Jewkes et al., 2010). Changing behaviors that are heavily influenced by social norms may be more difficult among women.

Dependence on men for entertainment, feelings of self-worth and future dreams may prevent girls from taking control in their intimate relationships. Young women report that maintaining their intimate relationships are their primary goal (Jewkes et al., 2010). Exerting agency within their relationships may not be worth risking demotion (no longer being a primary girlfriend) or abandonment. Interventions and programs that help young women develop goals

and resources independent of men may be more effective than programs targeting knowledge and social norms. The Intervention with Microfinance for AIDS and Gender Equity (IMAGE) included 1) a curriculum-based program targeting gender norms, intimate partner violence, HIV/AIDS, relationship, and communication skills; 2) community awareness and collaboration; 3) microfinancing for women's entrepreneurial endeavors (Pronyk et al., 2006). Women participating in IMAGE were more likely to talk to others in their household about sex; have more progressive views towards gender roles and intimate partner violence; and were less likely to experience intimate partner violence. Although this program targets adult women ($M = 41$ year old), programs that help youth identify resources and develop goals for an independent future may help reduce victimization.

Both men and women are affected by the connection between gender norms and violence. Empowering women to be more independent and assertive may be only half the battle (Chege, 2005). If men's attitudes towards women and expectations for men do not change, then progress for women may be limited in the society at large. Men as Partners (MAP) was developed by EngenderHealth and the Planned Parenthood Association of South Africa to address both gender-based violence and HIV/AIDS in South Africa through the use of outreach, 4-day workshops, community mobilization activities, and improved HIV services. An evaluation by the Population Council suggests that the issues targeted by MAP workshops are consistent with community needs (Ditlopo et al., 2007), but getting men to participate in the workshops may be challenging to do beliefs that HIV/AIDS and reproductive health are women's issues and minimalization of gender based violence as an issue in their community.

An evaluation of MAP twelve months post-intervention suggests some positive intervention effects. At follow-up, men were less likely to believe women who carried condoms

were easy and that men should make the final decision regarding domestic matters (Ditlopo et al., 2007). Men who showed signs of an STI were also more likely to seek treatment, tell their partners, and abstain from sex during treatment than were men prior to MAP. Men also reported providing more support to their partners during pregnancy. These findings suggest that such programs can promote more respect and concern for female partners. Although not statistically significant, men at follow-up were less likely to agree that women should tolerate violence from a husband for the sake of her family (Ditlopo et al., 2007).

Researchers attempted to assess the impact of MAP on female partners of men who participated in the program, but were unable to due to attrition (Ditlopo et al., 2007). However, understanding the impact of such programs on men's actual interactions with women would help in assessing the value of such programs. Although less than half of participants complete the entire workshop, interventions that occur over a short period of time may be more likely to retain participants than those that are spread out over many weeks or months. Although MAP is open to older adolescents and adults, the participants in this study were limited to those ages 15 to 34. It is unclear if the programs impact differs depending on age.

Many problem behaviors, such as perpetrating sexual violence, delinquency, risky sexual behaviors, and substance use, share common risk factors and often co-occur. Consequently, 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). More specifically, some researchers have suggested that programs that target the risk factors of sexual victimization, such as substance use and alcohol abuse prevention programs, may be more effective in reducing sexual victimization than programs targeted at sexual victimization itself (Daigle, 2009; Testa et al., 2010). Programs

targeting alcohol use are recommended as effective strategies to reduce intimate partner violence, yet the impact of these strategies on sexual violence is unknown (WHO, 2010).

Although substance use and risky sexual behavior are consistently found to co-occur (Donovan, Jessor, & Costa, 1988; Farrell, Danish, & Howard, 1992; Jessor & Jessor, 1977), no studies have evaluated the impact of substance use prevention programs impact on sexual victimization.

Chapter 2

Methods

Intervention

The HealthWise program is a comprehensive prevention program specifically adapted for use in South Africa based on developmental systems theory, positive youth development, and prevention science theories (Smith et al, 2008). The program aimed to prevent substance abuse, the transmission of HIV/AIDS and STIs, and promote positive use of free and leisure time through a series of classroom-based structured lessons.

Twelve lessons were implemented during the eighth grade, with an additional six booster lessons in ninth grade. School enrollment in South Africa is high for urban youth, with 90.3% of male and 93.8% of female youth ages 11 to 15 enrolled in school (DHS, 2003). Enrollment rates are lower for youth age 16 to 20 (65.3% of males and 64.0% of females), however, 88.5% of females and 82.9% of males between the ages of 15-19 have at least some secondary school education or higher. Consequently targeting youth in grades 8 and 9 ensures that HealthWise reaches the majority of youth. Lessons were presented in either English or Afrikaans. The lessons underwent extensive evaluation and pilot testing and incorporate components of Botvin's Life Skill Training (Botvin, Schinke, & Orlandi, 1995), Caldwell's (2004) Timewise: Taking Charge of Leisure Time, and sexual risk prevention curricula (see Caldwell, Smith, et al., 2004 for more on the curriculum development and evaluation). Three lessons were of particular interest to this study. Two were offered towards the end of eighth grade including Avoiding Risky Sexual Behaviors (Lesson 10) and Avoiding and Reducing Risk (Lesson 12). At the end of ninth grade, the curriculum included a lesson on Relationships and Sexual Behavior (Lesson 5).

Classrooms and Schools

Participating schools were located in Mitchell's Plain Township near Cape Town, South Africa. Mitchell's Plain is an urban region established during the Apartheid era with mostly low-income and Coloured residents. Of the twenty-five area schools, six schools were disqualified due operational instability which limited the schools ability to fully participate. Of the remaining schools, four were randomly selected for participation in the pilot study and to serve as the treatment condition for the efficacy trial. Four control schools were selected by subjectively matching the characteristics of the remaining area schools to treatment schools. An additional school was selected as a back-up control school. Control schools continued to offer the Life Orientation curricula to meet the South Africa Department of Education health promotion requirements (Smith et al., 2008). All schools agreed to participate.

Participants

Participants in the original sample consisted of three consecutive cohorts of students (N=6341) beginning grade eight in March of 2004, 2005, and 2006. There were slightly more participants in cohort 1 (39.3%) than cohort 2 (33.8%) and cohort 3 (27.9%). Sixty-three percent of participants were in the control group. At baseline (Wave 1), participants were 12 to 19 years old, with a mean age of 14. Half of the participants were female (50.3%). The majority identified as Coloured (85%, of mixed Asia, African, White ethnicity), the remaining participants were Black (8.7%), White (4.7%), Indian (< 1%) and Other (< 1%).

This research consists of two studies, to be described below. For Study 1, the sample is restricted to participants in the control group to ensure that results are not skewed by the treatment condition. Predictor variables were not measured prior to wave 1, so the sample is

restricted to those who were virgins at Wave 1 to ensure no prior experiences of forced sex. This restriction increases our confidence in the direction of the results, because experiences of forced sex may also impact our predictors. Similarly, participants who reported forced sex at any wave prior to Wave 5 will be excluded to insure the predictor variables measured at Wave 4 preceded the forced sex event (measured at Wave 5). The study focuses on youth at Wave 5 in order to capture developmental issues predicting youth's experiences at the beginning of tenth grade to provide support for Study 2 (discussed below). Participants were only asked about forced sex if they had reported ever having sex therefore students in this analysis reported having sex by Wave 5. Participants who were non-virgins at wave 5 and never reported forced sex will be compared to those who first reported forced sex at Wave 5. At Wave 1, the majority of participants were male (59.9%) and Coloured (88.9%). The remaining participants were Black (7.3%), White (2.9%), or other ethnicity (<1). On average, participants were 14 years old (range 14 - 19). Almost all participants provided assent at Wave 4 to continue participation (98.9%).

Study 2 includes all assenting participants in the larger study described above. Students who did not receive the HealthWise program serve as the control group. Participants in the control group ($m= 13.9$) were slightly younger than those in the treatment group ($m= 14.1$), and slightly more likely to identify as Coloured (88.3% v 80.5%).

Data Collection Procedures

Letters explaining the study were sent home with students to obtain passive parental consent. Parents were provided information on how to opt out of the study if they did not wish for their child to participate. Research staff explained the study to students and provided them with written information to obtain participant assent. All students had the opportunity to

withdraw from the study at each wave. No parents refused participation, and 1.8% of participants refused assent at Wave 1. For Study 1, almost all participants provided assent at Wave 4 to continue participation (98.9%).

Assenting students completed questionnaires every six months between 8th and 10th grade using personal digital assistants (PDAs). To facilitate participants in answering the appropriate questions, the PDAs were programmed to automatically follow skip patterns. Questionnaires were available in both English and Afrikaans. The study protocol was approved by the Institutional Review Boards (IRBs) of the Pennsylvania State University and Stellenbosch University.

Measures

Sexual agency. Sexual Agency was measured with four questions that address participants' ability to make decisions regarding their sexual life, including confidence in their ability to refuse sex, use a condom, and express their love without sex (see *Table 2-1*). Participants responded on a 5-point likert scale from *Strongly Disagree* to *Strongly Agree*. Participants' score on each item were converted to standardized scores. Items were combined to create a sexual agency scale. Scale reliability was good for both the study 1 subsample ($\alpha = 0.81$) and the full sample ($\alpha = 0.81$, study 2).

Duty to have sex. Duty to have sex was measured with a single item asking participants to what extent they agreed or disagreed with the statement "If an older man wants to have sex with a younger girl, it is her duty to have sex with him." The item was measured on a 5-point likert scale from *Strongly Disagree* to *Strongly Agree*.

Self-efficacy to avoid risk. Self-efficacy to avoid risk was measured using three items that assessed participants' belief in their ability to recognize and avoid risky situations (see *Table 2-1*). Participants responded on a 5-point likert scale from *Strongly Disagree* to *Strongly Agree*. Participants' score on self-efficacy to avoid risk items will be converted to standardized scores and combined to create a single self-efficacy to avoid risk scale. Scale reliability was good for both the study 1 subsample ($\alpha = 0.79$) and the full sample ($\alpha = 0.83$, Study 2).

Sexual history. Sexual history questions were asked of participants only if they provided an affirmative response to ever having sex. *Timing of Sexual Initiation* was measured by calculating the number of waves since the participant first reported ever having sex. *Number of Partners* was calculated with a single question asking participants "How many sexual partners have you had in the last 6 months?" Response options were "0", "1", and "2 or more". Participants' relationship with their partner was assessed with the question: "Thinking about the last time you had sex, how would you describe your relationship with that person?" Participants rated the extent to which they knew their partner on a 3-point scale from "0 = just met them that day" to "2 = Serious dating partner". All sexual history items will be used as single item predictors; composite scales will not be created.

Recent alcohol use. Participants who reported ever having had an alcoholic beverage were asked if they had any alcoholic beverages in the last four weeks (Yes/No), and if so how many beverages they had (0, 1, 2 or more). Responses were combined to create a recent alcohol use scale.

Condom use self-efficacy. Participants who reported ever having sex were asked three questions assessing participants' belief in their ability to use condoms (see *Table 2-1*). Items

were measured on a 5-point likert scale from *Strongly Disagree* to *Strongly Agree*. These items were standardized and combined to form the condom use self-efficacy scale. Scale reliability was good for both the study 1 subsample ($\alpha = 0.82$) and the full sample ($\alpha = 0.75$, Study 2).

Substance use with sex norms. All participants responded to two questions assessing their perception of norms regarding using substances during sexual encounters (see Table 2-1). Participants indicated to what extent they agreed with the statements on a 5-point likert scale from *Strongly Disagree* to *Strongly Agree*. Both items were standardized and combined to form the substance use with sex norms scale. Scale reliability was good for both the study 1 subsample ($\alpha = 0.73$) and the full sample ($\alpha = 0.76$, Study 2).

Substance use at last sex. Participants who reported ever having sex were asked if they had used marijuana or alcohol at the time of their last sexual encounter. Participants who responded affirmatively to either question received a score of 1. Participants who did not use any substances at last sex received a score of 0.

Analytic Strategy

The HealthWise program has been found to have consistent effects across cohorts for most substance use outcomes (Tibbits, Smith, Caldwell, & Flisher, 2011). A treatment and cohort interaction was found for delayed onset of polydrug use. No other cohort differences were found. Although, Tibbits and colleagues did not find treatment effects for sexual behaviors; this finding did not vary by cohort. The stability of treatment effects across cohorts suggests combining cohorts for analyses is reasonable.

Study 1. Independent sample t-tests will be used to examine group differences between youth who experience forced sex between Wave 4 and Wave 5 and adolescents who are sexually

active at Wave 5 but who never reported forced sex. Although we recognize that forced sex may have different predictors for male and female youth, our primary analyses will be conducted with male and female youth combined. Gender differences will be examined on an exploratory basis as this study does not have adequate power to detect group differences when groups are restricted to either male or female youth.

Hypothesis 1 (Sexual Agency). Youth who struggle to assert themselves in sexual situations may have more difficulty negotiating coercive sexual encounters. Therefore, adolescents who report forced sex at Wave 5 will have lower levels of sexual agency at Wave 4 than their non-virgin peers who had not experienced forced sex (*H1*).

Hypothesis 2 (duty to have sex). Using a position of power (whether as a adult relative, teacher, or respected elder) to obtain sex constitutes forced sex. Youth who believe it is the duty of a girl to have sex with an older man who requests it, will be more likely to experience forced sex (*H2*).

Hypothesis 3 & 4 (alcohol use). Engaging in sex while intoxicated is risky for a multitude of reasons: it impairs a person's ability to control a situation, may lead them to engage in unwanted behaviors, and reduce their likeliness to practice safe sex practices. Because of their increased exposure to risky situations and potential perpetrators (at bars and parties), adolescents who use alcohol at Wave 4 will be more likely to experienced forced sex at Wave 5 (*H3*). Use of alcohol or marijuana will be more common at the forced sexual encounter than at the last sexual encounter for youth who were not forced (*H4*).

Hypothesis 5 (avoiding risk). Adolescents' who believe they can avoid forced sex are less likely to experience forced sex than their peers (Walsh & Foshee, 1998). Being able to avoid

situations which hold a greater risk of victimization, such as situations that involve alcohol or being alone with a potential perpetrator may be a key factor in reducing sexual victimization. Therefore, adolescents who have greater self-efficacy to avoid risky situations at Wave 4 will be less likely to experience forced sex at Wave 5 (*H5*).

Hypothesis 6 (SU with Sex norms). The belief that substances can be used to improve one's chances of having sex with a partner (by increasing their partner's level of intoxication) or to become comfortable with a partner suggests the acceptance of norms promoting the use of any tactics to 'persuade' a partner to engage in sex. Consequently, youth who endorse these beliefs at Wave 4 will be more likely to experience forced sex at Wave 5 (*H6*).

Hypothesis 7 (Condom use self-efficacy). Although it is not clear how condom use self-efficacy will relate to forced sex, it is being included in these analyses for exploratory purposes. Condom use self-efficacy may be an additional proxy for sexual agency, thus condom use self-efficacy at Wave 4 is expected to be associated with less forced sex at Wave 5 (*H7*).

Hypothesis 8 (Sexual History). Female, American college students who have more 'hook-up' experiences and sexual partners are at an increased risk for forced sex (Testa et al., 2010; Young & Furman, 2008), however, this was only true when the perpetrator was a non-intimate partner (Testa et al., 2007). This is likely because hooking-up and having more sexual partners increases an individual's exposure to potential, non-intimate perpetrators. However, most forced sex among South African girls occurs within the context of a romantic relationship and by non-peer perpetrators for boys. Therefore, forced sex experiences at Wave 5 will be unrelated to individual's sexual history including number of partners, timing of sexual initiation, and relationship to partner Wave 4 (*H8*).

Study 2. Ordinary least squares regression will be used to examine the impact of HealthWise on sexual agency, risk avoidance, duty to have sex norms, condom use self-efficacy, and norms regarding substance use with sex. Logistic regression will be used to examine the impact of HealthWise on substance use at last sex. Because norms and expectations regarding sexual behavior are different for males and females, HealthWise may impact predictors of forced sex differently for the two groups. To assess possible differences, we will examine the interaction between treatment condition and gender to determine if HealthWise had a differential impact depending on gender and predictor.

Missing data will be imputed using the PROC MI feature in SAS. Multiple imputation has been found to produce unbiased estimates by maintaining dataset characteristics when data is missing at random (Graham, Cumsille, & Elek-Fisk, 2003).

Hypothesis 9 & 10 (HealthWise impact on skills & norms). HealthWise curriculum includes lessons addressing decision making; managing, avoiding and reducing risk; avoiding risky sexual behaviors; sexuality within relationships; and conflict resolution. Given these lessons, students in the HealthWise condition are expected to have greater sexual agency, self-efficacy to avoid risk, and condom use self-efficacy at Wave 5 (*H9*). HealthWise youth will be less likely to endorse duty to have sex or substance use with sex norms at Wave 5, after controlling for norms at Wave 1 (*H10*).

Hypothesis 11 (HealthWise impact on sexual encounters). Smith and colleagues (2008) found HealthWise reduced recent alcohol use and rates of heavy drinking among adolescents who participated in HW. Increased awareness of the risk associated with substance use and increased substance use refusal skills will lead to a decrease in reports of using substances at last

sex among HealthWise students compared to the control group (*H11*) for students who abstained from alcohol and substance use at Wave 1..

Hypothesis 12 (gender differences). Because there is no prior research on how substance use and HIV/AIDS prevention programs impact forced sex, and most sexual victimization programs focus mainly on women, it is unclear how HealthWise may impact girls and boys differently. Exploratory analyses will assess potential gender differences.

Table 2-1. Items Used for Composite Scores on Sexual Agency, Self-Efficacy to Avoid Risk, Recent Alcohol Use, Condom Use Self-Efficacy, Substance Use Norms, and Substance Use at Last Sex.

Questionnaire	Items
Sexual Agency $\alpha = 0.81$	<p>I would be able to refuse to have sex if I did not feel like having sex.</p> <p>If I had sex, I would be able to make sure that I use a condom even if my partner does not want to use one.</p> <p>I would be able to make sure that I use a condom even if I had been drinking alcohol.</p> <p>If I did not have sex, I would know of other ways of expressing love to my partner.</p>
Self-Efficacy to Avoid Risk $\alpha = 0.79 - 0.83$	<p>I am confident I make good decisions.</p> <p>I am confident I can avoid risky situations.</p> <p>I am confident I can identify when situations might turn risky.</p>
Alcohol Use	<p>During the past four weeks did you use alcohol (including wine and beer)?</p> <p>During the past four weeks how many alcoholic drinks did you have?</p>
Condom Use Self-Efficacy $\alpha = 0.75 - 0.82$	<p>I feel confident that I could put a condom on myself or my partner.</p> <p>I am able to use a condom correctly.</p> <p>I can convince my partner to use a condom.</p>
Substance Use with Sex Norms $\alpha = 0.73 - 0.76$	<p>I believe it's okay for people my age to get a person drunk or high in order to have sex with them.</p> <p>I believe it's okay for people my age to use alcohol or drugs to help them feel more comfortable with a sexual partner.</p>
Substance Use at Last Sex	<p>The last time you had sex, did you drink alcohol?</p> <p>The last time you had sex, did you smoke dagga?</p>

Chapter 3

Results

Descriptive Statistics

Socioeconomic and racial characteristics for youth in Study 1 (control students only) and Study 2 (control and treatment students: see Methods section for other selection criteria) can be found in *Table 3-1*. Except for gender distribution, both samples display similar characteristics. The majority of students live with both their mother and father, nearly all students live in homes with electricity and tap water, and a majority of students' families live in a brick home, flat or maisonette and have a car.

Study 1

Study 1, consists of students who are sexually active by Wave 5, but never reported forced sex prior to Wave 5. Of the 1,889 students who were virgins at baseline and completed the Wave 5 survey, 21.6% reported ever having sex at Wave 5 ($n = 364$). An additional 37 students were excluded from the study due to reports of forced sex prior to Wave 5. The final sample for Study 1 consisted of 327 students. At Wave 4, the majority of youth had only one sexual partner during the past 6 months (68.6%); over a quarter of youth had two or more partners (27.1%). Rarely was a student's most recent partner someone whom they had just met that day (10.0%). More commonly, youth reported that their most recent sexual partner was either a serious dating partner (51.4%) or someone whom they knew a while (38.6%). By Wave 4, the majority of participants had drunk alcohol in their lifetime (70.1%). Over half of the participants reported drinking alcohol during the past four weeks (57.1%). Of those who drank alcohol during the past four weeks, 9.6% drank one alcoholic beverage or less, 29.8% drank two

to three beverages, and 60.6% drank four or more alcoholic beverages. Associations between predictor and outcome variables are provided in Appendix A.

About one out of every eleven (8.6%) youth in this sample, first reported a forced sex incident during the six months prior to Wave 5. *Table 3-2* presents the non-standardized means for the predictor variables. Overall participants reported that they agreed with statements regarding sexual agency ($M = 3.0, SD = 0.9$), risk avoidance self-efficacy ($M = 2.9, SD = 0.9$), and condom use self-efficacy ($M = 2.9, SD = 0.9$). On average, students did not approve of the use of substances to obtain sex or make oneself more comfortable with sex ($M = 1.2, SD = 1.1$). However, boys were slightly more likely to agree to negative substance use with sex norms than girls (see *Table 3-2*). Although the majority of participants did not report using substances at last sex (67.8%), substance use at last sex was more common for boys than girls (37.2% v 24.6%). Neither sexual agency nor risk avoidance self-efficacy differed significantly between girls and boys. However, boys were more likely to report greater condom use self-efficacy and have stronger negative attitudes towards the idea that it is a girl's duty to have sex with an older man.

Table 3-3 presents standardized means and results from the independent sample t-test analyses. Youth who reported experiencing forced sex were more likely than their non-forced, sexually active peers to have poor sexual agency ($t(256) = 2.56, p < .01$) and lower condom use self-efficacy ($t(256) = 5.07, p < .0001$). Self-efficacy to avoid risk did not differ between groups ($t(255) = 1.12, n.s.$). Youth who experienced forced sex were also more likely to believe it is a girl's duty to have sex with an older man ($t(256) = -2.37, p < .05$) and endorse norms supporting the use of alcohol or drugs during sex ($t(256) = -2.14, p < .05$). At Wave 5, the use of alcohol or marijuana at last sex was more likely for sexual encounters that were forced than volitional sexual encounters ($t(322) = -4.81, p < .0001$).

As hypothesized, factors related to youth's sexual history were not significantly related to experiencing forced sex. Participants who experience forced sex at Wave 5, do not differ at Wave 4 from their sexually active peers on length of sexual history ($t(323) = 1.10, n.s.$), number of partners ($t(138) = -0.08, n.s.$), and relationship to partner ($t(132) = 0.17, n.s.$).

Study 2

Ordinary least squares regression was used to evaluate the impact of HealthWise on sexual agency, condom use self-efficacy, substance use with sex norms, and duty to have sex norms.

Sexual Agency. Sexual agency at Wave 1, gender, and age significantly predicted sexual agency at Wave 5 (see *Table 3-4*), after controlling for all other variables in the model. Youth who were high on sexual agency at Wave 1 were more likely to report high levels of sexual agency at Wave 5 ($b=0.32, t(264.0) = 19.63, p<.0001$). Female students scored higher on the sexual agency scale than male students ($b=0.86, t(330.0) = 7.24, p<.0001$). An increase in student's age predicted a decrease in sexual agency ($b = -0.51, t(166.4) = -7.39, p<.0001$). HealthWise did not have a significant impact on Wave 5 sexual agency after controlling for Wave 1 sexual agency, age, and gender. Because Wave 1 sexual agency may have accounted for a large portion of variance, a simplified model that included only the treatment condition was also analyzed (analysis not shown). The impact of HealthWise remained insignificant. There was no significant interaction between treatment and gender.

Condom Use Self-Efficacy. Condom use self-efficacy at Wave 1 significantly predicted condom use self-efficacy at Wave 5, such that those students who were confident in their ability to use condoms at Wave 1 were more confident at Wave 5 ($b = 0.32, t(277.6) = 19.26, p<.0001$),

net the effects of all other predictors. Male students scored significantly higher on condom use self-efficacy than female students ($b = -0.65$, $t(291.3) = -6.86$, $p < .0001$), after controlling for Wave 1 Condom-use self-efficacy, age and treatment condition. After controlling for covariates, there was a unique contribution of age that was negative. An increase in age predicted a significant decrease in condom use self-efficacy ($b = -0.25$, $t(169.8) = -4.72$, $p < .0001$). Controlling for Wave 1 condom-use self efficacy may influence the impact of age on condom-use self efficacy, since older students likely reported higher condom-use self-efficacy at Wave 1. When condom-use self-efficacy at Wave 1 was excluded from the model, the effect of age reversed such that older age positively predicted condom use self-efficacy at Wave 5 (*analysis not shown*). HealthWise did not have a significant impact on Wave 5 condom use self-efficacy. A simplified model that included only the treatment condition was also analyzed (*analysis not shown*). The impact of HealthWise remained insignificant. There was no significant interaction between treatment and gender.

Substance use with sex norms. Those who report more accepting views towards using substances during sexual encounters at Wave 1 are more likely to report these views at Wave 5 ($b = 0.22$, $t(219.6) = 12.47$, $p < .0001$). Male students were significantly more accepting of substance use with sex norms than female students ($b = -0.55$, $t(367.0) = 8.19$, $p < .0001$). Being older also significantly predicted greater acceptance of substance use with sex norms ($b = 0.17$, $t(156.8) = 4.18$, $p < .0001$). HealthWise did not have a significant impact on Wave 5 substance use with sex norms. A simplified model that included only the treatment condition was also analyzed (*analysis not shown*). The impact of HealthWise remained insignificant. There was no significant interaction between treatment and gender.

Duty to have sex. Belief that it is a girls duty to have sex with an older man at Wave 1 significantly predicted endorsement of duty to have sex at Wave 5 ($b = 0.20, t(135.6) = 10.16, p < .0001$). After controlling for covariates, female students ($b = -0.27, t(344.7) = -7.11, p < .0001$) and those who were older ($b = 0.15, t(143.6) = 6.25, p < .0001$) were more likely to agree that it is a girls duty to have sex with an older man. HealthWise did not have a significant impact on duty to have sex views at Wave 5. A simplified model that included only the treatment condition was also analyzed (*analysis not shown*). The impact of HealthWise remained insignificant. There was no significant interaction between treatment and gender.

Substance use at last sex. The impact of HealthWise on the use of substances at last sex was examined using logistic regression. Model 1 (see *Table 3-5*) examines the impact of HealthWise on use of substances at last sex, without controlling for covariates. Youth who participated in HealthWise had significantly lower odds of using substances at last sex when compared to the control group ($OR = 0.69, p < 0.01$). After controlling for age and gender (Model 2), the impact of HealthWise remains significant ($OR = 0.69, p < 0.01$). Gender also significantly predicts substance use at last sex, with female students having lower odds of engaging in substance use at last sex than males ($OR = 0.50, p < .0001$). In Model 3, an interaction between gender and treatment is tested. The interaction is not significant.

Table 3-1. Descriptive statistics of Study 1 subsample and Study 2 full sample.

Variable	Study 1 Subsample (Wave1, n=327) Percent or Mean	Study 2 Full Sample (Wave1, n=6341) Percent or Mean
Age (in years)	13.9	14.0
Gender		
Male	59.9%	49.7%
Female	40.0%	50.3%
Race		
Black	7.3%	8.7%
White	2.9%	4.7%
Coloured	88.9%	85.4%
Indian	0.0%	0.6%
Other	0.9%	0.7%
Family Structure		
Two biological parents	66.7%	64.6%
Mother only	21.4%	23.9%
Father only	3.7%	3.5%
Neither Parent	8.3%	8.1%
Socioeconomic Factors		
Homes with electricity	97.9%	97.0%
Tap water	94.8%	93.5%
motor car	58.8%	59.4%
Type of home		
Shack	2.8%	2.4%
Wendy house or backyard dwelling	6.4%	8.0%
tent or traditional dwelling	1.2%	2.2%
brick house or flat or maisonette	79.2%	78.9%
other	10.4%	8.6%
Cohort		
Cohort 1	34.3%	39.3%
Cohort 2	39.6%	33.8%
Cohort 3	26.2%	27.9%
Treatment Condition		
Control	100.0%	62.9%
HealthWise	0.0%	37.1%

note: Percentages may not sum to 100% due to rounding.

Table 3-2. Means and standard deviations for Study 2 predictors, by gender.

	Male			Female			Total Sample		
	Total (n = 196)	Forced Sex (n = 20)	Never Forced (n = 176)	Total (n = 131)	Forced Sex (n = 8)	Never Forced (n = 123)	Total (n = 327)	Forced Sex (n = 28)	Never Forced (n = 299)
Sexual Agency *	2.9 (1.0)	2.4 (1.1)	2.9 (1.0)	3.1 (0.8)	2.5 (1.2)	3.1 (0.8)	3.0 (0.9)	2.5 (1.1)	3.0 (0.9)
Self-efficacy to avoid Risk *	2.9 (0.9)	2.8 (1.1)	2.9 (0.9)	2.8 (0.8)	2.4 (1.0)	2.8 (0.8)	2.9 (0.9)	2.7 (1.1)	2.9 (0.9)
Condom Use Self- Efficacy *	3.1 (0.9)	2.1 (1.1)	3.2 (0.9)	2.7 (0.9)	1.6 (0.7)	2.7 (0.9)	2.9 (0.9)	1.9 (1.0)	3.0 (0.9)
Substance Use Norms *	1.4 (1.2)	1.9 (1.3)	1.4 (1.2)	0.9 (0.9)	1.3 (0.8)	0.9 (1.0)	1.2 (1.1)	1.7 (1.2)	1.2 (1.1)
Duty to have Sex *	0.8 (1.2)	1.3 (1.5)	0.7 (1.2)	0.5 (0.9)	1 (0.9)	0.4 (0.9)	0.64 (1.1)	1.2 (1.3)	0.6 (1.1)
Recent Alcohol Use	1.1 (1.3)	0.8 (1.3)	1.1 (1.3)	0.9 (1.3)	0.8 (1.3)	0.9 (1.3)	1 (0.7)	0.8 (1.3)	1.0 (1.3)
Substance use at Sex Timing of Sexual Initiation	0.4 (0.5)	0.9 (0.4)	0.32 (0.5)	0.2 (0.4)	0.4 (0.5)	0.2 (0.4)	0.3 (0.5)	0.71 (0.5)	0.3 (0.5)
# of Partners last 6 months	1.3 (0.5)	1.4 (0.8)	1.3 (0.5)	1.1 (0.4)	NA+	1.1 (0.4)	1.2 (0.5)	1.4 (0.7)	1.2 (0.5)
Relationship to partner	1.3 (0.7)	1.4 (0.8)	1.2 (0.7)	1.7 (0.5)	NA+	1.7 (0.5)	1.4 (0.7)	1.4 (0.7)	1.4 (0.7)

*5-point likert scale: 0 = Strongly Disagree, 1 = Disagree, 2 = Neither Agree nor Disagree, 3 = Agree, 4 = Strongly Agree

" + data only available for 1 ppt. "

Table 3-3: Means and Standard Deviations for Predictors by Forced Sex Experience in last 6 months

	Never Forced Sex (n =299)¹	Forced Sex (n=28)¹	<i>t</i>	<i>df</i>
Sexual Agency (W4)	0.22 (3.03)	-1.63 (3.79)	2.56*	256
Duty to have sex (W4)	0.60 (1.07)	1.20 (1.32)	-2.37 ⁺	256
Self-Efficacy to Avoid Risk (W4)	0.08 (2.45)	-0.57 (2.99)	1.12	255
Timing of Sexual Initiation (W5)	1.89 (0.99)	1.68 (0.95)	1.10	323
# of Partners last 6 months (w4)	-0.03 (0.97)	0.27 (1.44)	-.083	138
Relationship to partner (W4)	0.02(0.99)	-0.04 (1.10)	0.17	132
Recent Alcohol Use (W4)	1.03 (1.30)	0.80 (1.28)	0.76	257
Condom Use Self-Efficacy (W4)	0.25 (2.40)	-2.62 (2.84)	5.07***	256
Substance Use with Sex Norms (w4)	-0.08 (1.75)	0.80 (1.87)	-2.14 ⁺	256
Substance Use at last sex (W5)	0.28 (0.45)	0.71 (0.46)	-4.81***	322

1. Sample sizes given are for total sample for that category, but some data are missing for some participants.

*** $p < .0001$ ** $p < .001$ * $p < .01$ ⁺ $p < .05$

Table 3-4. Regression coefficients and standard errors (in parentheses) for the impact of treatment and control variables on Wave 5 predictor variables.

	Dependent Variable			
	Sexual Agency (Wave 5)	Condom Use Self-Efficacy (Wave 5)	Substance Use Norms (Wave 5)	Duty to have Sex (Wave 5)
Intercept	7.46*** (1.1)	4.22*** (0.85)	-2.30** (0.65)	-2.14*** (0.38)
treatment	-0.07 (0.15)	-0.03 (0.10)	-0.04 (0.10)	0.04 (0.06)
Sexual Agency (Wave 1)	0.32*** (0.02)	--	--	--
Condom Use Self-Efficacy (Wave 1)	--	0.32*** (0.02)	--	--
Substance Use Norms (Wave 1)	--	--	0.22*** (0.02)	--
Duty to have Sex (Wave 1)	--	--	--	0.20*** (0.02)
Gender (Male = 0)	0.86*** (0.12)	-0.65*** (0.09)	-0.55*** (0.07)	-0.27*** (0.04)
age	-0.51*** (0.07)	-0.25*** (0.05)	0.17*** (0.04)	0.14 *** (0.02)
Treat*Gender Interaction	0.10 (0.18)	0.07 (0.14)	-0.03 (0.10)	-0.03 (0.06)

***p<.0001, **p<.001, *p<.01, +p<.05

Table 3-5. Odds Ratios (and 95% Confidence Intervals) from logistic regression analyzes predicting substance use at Wave 5 among Students who were virgins at Wave 1.

	Model 1	Model 2	Model 3
Treatment (HealthWise = 1)	0.69* (0.54, 0.88)	0.69* (0.54, 0.88)	0.70 ⁺ (0.53, 0.94)
Gender (Female = 1)		0.50*** (0.36, 0.67) p <.0001	0.51*** (0.37, 0.71)
Age		1.17 (0.98, 1.38)	1.19 ⁺ (1.01, 1.42)
Treat*Gender Interaction			0.93 (0.57, 1.54)

***p<.0001, **p<.001, *p<.01, ⁺p<.05

Chapter 4

Discussion

Despite the exclusion of early sexual initiators (i.e. prior to Wave 1) and youth who had prior forced sexual encounters, reports of forced sex remain high. During the six month period between Waves 1 and 4, 8.6% of youth experienced their first reported forced sexual encounter. Experiences of forced sex in this sample appear lower than reports in other studies, although they are not directly comparable. In a representative sample of Western Cape high school students, 8.8% reported ever experiencing forced sex. In a nationally representative sample, 8.6% of youth reported experiencing forced sex in the last year. Although each of these studies refers to a different length of time, both studies reported rates of forced sex among all youth rather than sexually active youth, who represent a minority of the youth in the HealthWise sample. Given the exclusion of youth with previous forced sex experiences from our sample, the actual rates of forced sex are likely substantially higher.

Given the high rates of reported forced sex, some researchers have questioned the accuracy of forced sex prevalence estimates. Among pregnant South African girls, Jewkes and colleagues (2001) found that some girls reported both engaging in sex because of curiosity and that sex was forced. The authors speculated that these youth may report higher rates for forced sex because of social desirability or that these youth may have been willing to have sex under different circumstances. However, girls who were sexually active, but not pregnant did not report seemingly contradictory explanations for sex, suggesting that regret due to the resulting pregnancy or the circumstances around the sexual event may be the most likely explanation. In

the current study, over-reporting of forced sex among girls does not appear to be a problem, as most girls do not report that sexual intercourse was forced.

More often researchers express concern of under-representing experiences of forced sex citing youth's fear of others finding out and cultural beliefs that forced sex is a private matter. In cases of child rape, reporting of rape by a family member may result in poverty, family shame, and family disruption (Jewkes Penn-Kekana, Rose-Junius (2005). These consequences are often seen as worse than rape itself, thus preventing the report of rape. Jejeebhoy and Bott (2003) report that in interview-based research, non-consensual sex is likely under reported due to the sensitivity and traumatic nature of the event (Jejeebhoy & Bott, 2003). However, the use of PDAs in the current study, likely increased the accuracy of forced sex reports. Rates of reporting tend to be substantially higher in computer assisted interviews, where greater degrees of confidentiality are insured (Rumakom et al., 2005). However, most studies focus on reporting of forced sex among women and girls. The factors influencing accurate reports of forced sex among boys are unknown.

Sexually active youth in this sample were generally confident in their sexual agency and ability to use a condom. This is promising given cultural norms that discourage discussions about sex and promote gender inequalities. Greater sexual agency in this sample compared to previous reports (Lesch & Kruger, 2004; Jewkes, Wood, & Duvvury, 2010) may be related to the increased prevalence of media campaigns targeting sexual agency and social norms pertaining to condom use, sexual violence, gender inequality and sexual risk behaviors (Harrison, 2009; Soul City, 2005; 2007; 2008; Usdin, 2005).

Nonetheless, poor sexual agency and condom use self-efficacy increased youth's risk of experiencing forced sex. The lack of agency may prevent assertiveness in coercive sexual encounters, while poor condom use self-efficacy may further limit youth's ability to negotiate the situation since they are not confident in safe sex practices. These results are supported by previous qualitative and quantitative research that suggests that the ability to negotiate terms of sexual encounter (Ajuwon, 2005; Petersen, Bhana, & McKay, 2005; Maharaj & Munthre, 2007), refuse unwanted sex (Kim, Kols, Nyakauru, Marangwanda & Chibatamoto, 2001; Petersen, Bhana, & McKay, 2005), and convince a partner to use a condom (Maharaj & Munthre, 2007; Sionean et al, 2002) can be protective against forced sex. However, research on sexual agency and promotion of agency is typically targeted towards women. This is likely due to literature that reinforces the role of gender inequalities in propagating sexual victimization through promoting sexual passivity for women and sexual prowess for boys (Kim et al., 2001; Njue, Askew, & Chege, 2005; Petersen, Bhana, & Mckay, 2005; Wood, 2008).

An often unstated and potentially false assumption of gender inequality research is that encouraging sexual prowess in boys equates to sexual agency in boys. Although social messages of sexuality differ for both male and female youth, the impact on sexual agency may be the same. A man that does not have sex when he desires it is seen as weak (Jewkes, Penn-Kekana, Rose-Junius (2005), while responding to sexual propositions in a hesitant and ambiguous manner is considered feminine (Wood, Lambert, & Jewkes, 2007). These messages may limit boys' ability or willingness to refuse sex because of fear of stigmatization, thus they may be more likely to report any unwanted sexual proposition as forced sex, even if no refusal attempt was made. Conversely, girls are discouraged from negotiating the terms of sex (Ajuwon, 2005; Kim et al., 2001; Petersen, Bhana, & McKay, 2005) and are taught that they do not have the right to

refuse sex with their boyfriends (Andersson et al., 2004). Both male and female South African youth report difficulty in negotiating safe sex (Buthelezi, Mitchell, Molestane, De Lange, Taylor, & Stuart, 2007). Given the larger proportion of male youth in our sample, our results suggest that programs should aim to increase agency among boys and girls. Additionally, further exploration of agency in preventing forced sex is warranted, particularly in respect to potential gender differences.

Overall, youth in this sample did not agree that it is a girl's duty to have sex with an older man. Youth who disagreed with this statement rather than strongly disagreeing were more likely to experience forced sex. These youth may be more influenced by traditional norms of obedience and respect (Jewkes et al., 2005; Sikweyiya & Jewkes, 2009), which produce constraints in exerting agency. Andersson and colleagues (2004) found that youth who endorse multiple beliefs promoting sexual violence (e.g. that girls do not have the right to refuse sex with their boyfriend or that forced sex with someone they know does constitute sexual violence) were also more likely to report a history of forced sex. These views were more common in rural regions, suggesting that they may reflect more traditional views. Likewise traditional values are linked towards accepting sexual violence norms in research in Nigeria where both girls and boys condone forced sex when the man has paid a bride price or spent money on a girl (Ajuwon, 2005). Alternatively, youth who agree with views that it is a girls duty to have sex with an older man may come from homes where violence and disrespect for women are model by their fathers. Similar to the findings in the current study, research in Kenya has found that boys who witness their parents' arguments and justifications for violence are at an increased risk for experiencing forced sex (Njue, Askew, & Chege, 2005).

However, self-efficacy to avoid risk did not predict experiences of forced sex. This is in contrast to research in the United States, which found self-efficacy to avoid forced sex reduced likeliness to experience forced sex (Walsh & Foshee, 1998). One potential explanation for these differences is that youth in the United States may have more opportunities to control their environments compared to youth in South Africa. Additionally, self-efficacy to avoid risk in the current study was not specific to avoidance of forced sex. It may be that youth's ability to make good decisions and identify situations that may become risky is less relevant to forced sex than other risk behaviors.

Although past studies have indicated that youth who are sexually active are more likely to drink alcohol (Babalola, Tambashe, & Vondrasek, 2005; Palin, Smith, Flisher, Caldwell, & Mpfu, 2006), recent alcohol use at Wave 4 did not predict forced sex at Wave 5. This may be due to the exclusion of youth who previously reported forced sex. Furthermore general patterns of alcohol use may be less relevant to forced sex than alcohol use on a given occasion. Consequently, those youth who drink often may be at increased risk for forced sex at each drinking occasion, but were excluded from the study due to previous experiences of forced sex. This is supported by the finding that alcohol and other drugs do increase youth's likeliness of experiencing forced sex on the same occasion. Youth who are intoxicated may struggle to physically resist forced sex attempts and are less adept at negotiating the encounter while intoxicated (Abbey et al., 1996; Harrington & Leintenberg, 1994). Furthermore, norms supporting substance use with sex also increase youth's risk for experiencing forced sex. It may be that these youth are less likely to resist substances, which subsequently limits their ability to negotiate and resist forced sex attempts.

The length of sexual history, number of partners and relationship to last partner (at Wave 4) did not predict forced sex. These findings are important because they challenge the social perspective that youth who experience forced sex are more promiscuous and therefore are to be blamed. Fear of being blamed for forced sex or rape is a common barrier for reporting such incidences (Moore, Awusabo-Asare, Madise, John-Langba, & Kumi-Kyereme, 2007; Jewkes, Penn-Kekana, & Rose-Junius, 2005; Wood, 2005) and may also prevent youth from seeking other forms of assistance, such as medical or counseling services. Consequently, initiatives to reduce the stigma associated with sexual violence would likely promote reporting of forced sex and subsequently increase consequences for perpetrators.

The recognition of sexual agency, condom use self-efficacy, duty norms, substance use with sex norms and alcohol use as predictors of forced sex is hopeful, given that all of these factors have the potential to change. In the second study, HealthWise was evaluated for its impact on these factors. Youth who participated in HealthWise were significantly less likely to report the use of alcohol or drugs at last sex compared to youth in the control group. This supports previous studies that found a positive impact of HealthWise on recent alcohol use (Smith et al., 2008). The positive impact of HealthWise on substance use at last sex, a strong predictor of forced sex, suggests that HealthWise may help youth reduce their risk for forced sex.

Analyses did not show an effect of HealthWise on the other risk factors. It is possible that alternative methods for analyzing the data would be more sensitive to treatment effects that occur at different times for girls and boys. Coffman, Smith, Flisher, and Caldwell, (2011) found that HealthWise had a positive impact on condom use self-efficacy for both girls and boys, but that the effect occurred after grade 8 for girls and in grade 9 for boys. Furthermore, Coffman and colleagues utilized propensity score modeling which may provide more accurate comparisons

across groups. Lastly, HealthWise effects may diminish overtime resulting in non-significant effects at six months post-intervention, even if a treatment effect exists during the intervention.

Need for more targeted intervention

Although HealthWise may impact risk factors associated with forced sex, interventions targeting respectful relationships and reducing dating violence in early adolescents are needed in South Africa. Youth who experience forced sex are more likely to also perpetrate forced sex (Andersson & Ho-Foster, 2008; Njue, Askew & Chege, 2005). Consequently, it is important to reduce forced sex among both boys and girls and to improve relationship dynamics in order to stop the cycle. One program to prevent dating violence in the United States, Safe Dates, has been promoted by the World Health Organization (2010) as an effective strategy to prevent partner violence in adolescents. However, no similar program exists in the South Africa. Safe Dates, aims to prevent and reduce all types of dating violence among male and female (Foshee et al. 1998) and had a positive impact among youth who had previously experienced dating violence on dating violence norms, gender stereotyping, nondestructive anger coping skills, more perceived negative consequences for dating violence, and knowledge of available services for victims and perpetrators. The program also had effects on actual physical and sexual violence at the four-year follow up (Foshee, Bauman et al., 2004). The factors addressed by Safe Dates are very relevant to South African youth and may help to reduce forced sex among both boys and girls.

Limitations

Although the current study provides important insight for prevention of forced sex in South Africa, several limitations should be noted. Forced sex was measured with a single item

that asked students if their last sexual encounter was forced. Although measures were taken to control for experiences of forced sex prior to Wave 5, it is possible that some participants experienced forced sex that was not captured. A participant who had more than one sexual encounter during a given wave may not report forced sex if it did not occur at their most recent sexual encounter. Additionally, we are unable to capture repeated experiences of forced sex. Asking about youth's last sexual encounter should capture an average sexual experience on a population level. This measure may not be as accurate in drawing within person conclusions.

As discussed in the introduction, forced sex may not have the same meaning for all students. In South Africa, many youth feel it is acceptable to 'persuade' someone into sex, often times using methods of verbal coercion or physical force (Wood et al., 2007). Therefore, students who report being forced to have sex may not perceive the experience to be problematic. Limitations of the data do not permit exploration of the severity of the forced sex experience (use of violence, blackmail, relationship to partner, etc.). Predictors of forced sex may vary depending on the context of the forced sex event. For example, sexual agency may protect youth from verbally coercive forced sex, but have little impact on violent sexual assaults. It is possible that those students who experienced the most severe forms of forced sex were more likely to drop out of school due to psychological and physical impact of the experience. This study only contained students attending school; those students who dropped out of school would not be captured by this study. Future research should examine characteristics of the forced sex experience and how those characteristics relate to predictors of forced sex.

Additionally, the small sample size for Study 1 prevents a more nuanced look at forced sex. This study was unable to determine if gender or relationship to sexual partner moderates predictors of forced sex. Testa and colleagues (2007) suggest that experiences of forced sex may

require different prevention approaches when the perpetrator is an intimate partner compared to a non-intimate partner. The potential moderating role of gender and relationship to perpetrator should be explored further in future research. Understanding gender differences is particularly important in South Africa, where incidence of forced sex is high for both boys and girls.

Adolescents who are sexually active are more likely to be older or to engage in other risky behaviors. It is possible that these students would be more likely to drop out of school because they need to work or due to a pregnancy. Furthermore, the sensitive nature of the topics discussed in these studies may amplify their susceptibility to social desirability bias. Participants were assured confidentiality and questionnaires were not administered by teachers, which may help to reduce potential bias.

Schools' assignment was not completely random. This may, in part, contribute to the larger percentage of HealthWise students who identified as Black compared to the control group. Racial disparities in South Africa are prevalent, with Black youth typically faring the worst. This may lead to bias in our sample.

A limitation of study 2 is its focus on mediating factors rather than reduction of forced sex incidences. However, MacKinnon, Taborga, & Morgan-Lopez (2002) suggest a program must be able to change mediating factors in order to be successful. Mediating factors must change prior to the desired behavioral changes. The evaluation of Safe Dates found a significant impact on mediators of partner violence, but not actual partner violence at a one year follow-up. However, a four year follow-up of the same program revealed significant reductions in partner violence. These findings suggest a more immediate prevention impact on mediators, with possible delays in behavioral outcomes. Because of the short follow-up window for this study, changes in forced sex mediators were an appropriate targeted outcome.

Participants in this study were primarily Coloured (of mixed ethnicity) youth in one township in South Africa, limiting our ability to generalize our findings to other youth both within and beyond South Africa. Study results and implications will be interpreted in light of these limitations.

Conclusions

The current study has identifies factors that increase youth's vulnerability to forced sex and provides insight on potential targets of future interventions. Additionally, the positive impact of HealthWise on one mediator of forced sex suggests that interventions that are not geared towards sexual violence may still contribute to the overall reduction of forced sex through the reduction of other risk behaviors. Nonetheless, further research should be conducted to evaluate the impact of substance use prevention programs on actual sexual victimization.

Furthermore, extensive research is needed on the experiences of forced sex in South Africa, particularly among boys. Some researchers have suggested that forced sex among boys may be qualitatively different and less severe than forced sex among girls (Sikweyiya & Jewkes, 2009). Conversely, the WHO reported that sexual violence among boys and men is a serious problem (Krug, Dahlberg, Mercy, Zwi, & Lozano, 2002). The exclusion of boys from many studies has prevented a clear understanding of these youth's experience and may inadvertently preserve beliefs that sexual violence is a women's issue. Researchers should be aware of their own assumptions and be cautious that their research is guided by theory and evidence so that stereotypes and misconceptions are not perpetuated.

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Appendix

Appendix. Pearson Correlations between predictor and outcome variables using listwise deletion.

	1	2	3	4	5	6	7	8	9	10	11
1. Sexual Agency (W4)	1.0										
2. Self-Efficacy to Avoid Risk (W4)	0.30**	1.0									
3. Duty to have sex (W4)	-.22*	-.04	1.0								
4. Condom Use Self-Efficacy (W4)	0.61***	0.28**	-0.17 ⁺⁺	1.0							
5. Recent Alcohol Use (W4)	0.01	-0.14 ⁺	-0.06	0.04	1.0						
6. Timing of Sexual Initiation (W5)	0.19 ⁺⁺	0.11	-0.02	0.19 ⁺⁺	0.02	1.0					
7. # of Partners last 6 months (w4)	-0.00	-0.01	0.14 ⁺	0.19 ⁺⁺	0.03	0.12	1.0				
8. Relationship to partner (W4)	0.24**	0.16 ⁺	-0.31**	0.10	-0.08	0.04	-0.18 ⁺⁺	1.0			
9. Substance Use with Sex Norms (w4)	-.22*	-0.08	0.43***	-0.13	0.05	0.01	0.14 ⁺	-0.33***	1.0		
10. Substance Use at last sex (W5)	-0.12	0.02	0.12	-0.04	0.26*	0.10	0.18 ⁺⁺	-0.23**	0.28**	1.0	
11. Forced Sex (W5)	-0.16 ⁺	-0.08	0.19*	-0.27**	-.04	0.01	0.07	-0.01	0.15 ⁺	0.15 ⁺	1.0

*** $p < .0001$ ** $p < .001$ * $p < .01$ ⁺⁺ $p < .05$ ⁺ $p < .1$

Note: Correlations are based on complete data only $n = 258$.