Engaging Boys and Young Men in the Prevention of Sexual Violence

A systematic and global review of evaluated interventions | 2011

Acknowledgements

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Executive Summary

Violence against women is a widespread issue, one that exists in all cultural and socio-economic contexts. Among the various forms of violence that girls and women suffer, rape is often the least visible and least reported. In many cases, such as in dating or married relationships, rape or other forms of sexual violence may not even be recognized by social or legal norms. While the underlying causes of sexual violence, are multiple and complex, among the core causes are unequal gender norms and power dynamics between men and women. Throughout the world, boys and men are largely the perpetrators of sexual violence, and girls and women are the victims. It is increasingly understood that men's use of violence is generally a learned behavior, rooted in the ways that boys and men are socialized.

There is evidence that this is often at an earlier age than many of the current violence prevention and sexuality education programs target. Adolescence is a time when many boys and young men first explore and experiment with their beliefs about roles in intimate relationships, about dating dynamics and male-female interactions. Research has shown that this is also the time when intimate partner violence first starts to manifest itself, and the earlier and more often it occurs, the more it reinforces the idea that violence is a "normal" part of dating relationships (Laner 1990). A key challenge, therefore, in primary rape prevention is to intervene before the first perpetration of rape or sexual violence, and to reach boys and young men when their attitudes and beliefs about gender stereotypes and sexuality are developing.

In this context, it is necessary to reach boys and young men (and girls and young women) with programs that address sexual violence before expectations, attitudes and behaviors about dating are well developed (Fay and Medway 2006). It is also necessary to challenge gender norms and sexual scripts that often underlie coercion and violence in relationships, including "those cultural norms that normalize intimate sexual violence as a 'natural' or 'exaggerated' expression of innate male sexuality" (Carmody and Carrington 2000). In addition, it is necessary to teach adolescents effective communication and problem-solving skills and to promote a culture of responsibility for preventing sexual violence (Berkowitz 2004).

In recent years, there has been a significant increase in attention to programming with boys and men and the evidence base regarding what works and what does not work. Violence prevention is still an area in which there are many questions, and there is a need for consolidating evidence for advocacy and practice purposes. While there are already many existing reviews of rape prevention programs with male university students and dating violence prevention programs with adolescents, these reviews have largely been limited to North American or Australian contexts and most often focused only on those programs published in the academic literature – not grey literature. This review is more extensive, in terms of age range (adolescents) and settings (global), and in terms of program goals and scope because it includes those programs that do not have rape prevention as primary focus, but which address underlying risk factors.

Review Objectives

The objective of this systematic review is to investigate the effectiveness of interventions for preventing boys' and young men's use of sexual violence, including: increasing gender-equitable attitudes, bystander intentions, and other attitudes and behaviors. It aims to explore the potential for intervening directly with boys and young men in community and school settings to address risk factors for sexual violence within diverse socio-cultural settings. The interventions in this review are those aimed at changing general attitudes and behaviors. The focus is on high-quality studies, defined as having a randomized controlled or quasi-experimental design.

In addition to assessing relevant studies, this review will also examine the extent to which the identified interventions have been adapted from one setting, culture or context to another, as well as from one age group to another.

Types of Studies Included

Randomized or quasi-randomized controlled trials were prioritized as they provide the highest level of evidence and the least risk of bias which could influence effect size or direction. However, due to the limited number of available randomized studies, we also included non-randomized studies with a treatment and a control group.

Participants

Participants included adolescent boys and young men aged 12-19 years. The primary focus of the review is on early teenage boys but we have also included examples of interventions for older teenagers as these may serve as models for adaptations.

Interventions

The interventions included in this review are primarily focused on directly targeting individual and group attitudes and behaviors, although we know it is necessary to also have interventions that target communities, systems and structures. Our review is limited to individual and group level interventions, with the exception of a few interventions that also targeted the broader community level. These included interventions like social norm initiatives and educational campaigns. Some of the interventions were conducted with mixed-sex groups, while others were with single-sex groups.

Interventions included in this review are those designed to prevent boys and young men's use of rape and other forms of sexual violence, or to change those attitudes about gender, violence, and/or intimate relationships with women that are correlated with boys' and young men's use of rape and other forms of sexual violence. Interventions designed to increase boys' and young men's positive bystander attitudes and behaviors are also included.

Types of outcome measures

This review focuses on interventions with the following outcome measures:

Behaviors

- perpetration of rape or other forms of sexual violence against a girl or woman
- perpetration of non-sexual forms of violence against a girl or woman
- bystander behaviors

Attitudes and Efficacy

- intention/likelihood to perpetrate rape or other forms of sexual violence
- intention/likelihood to perpetrate non-sexual forms of violence against an intimate partner
- rape-supportive attitudes, including rape myth acceptance[1]
- attitudes towards gender-based violence
- attitudes towards intimate partner violence
- attitudes towards interpersonal violence
- empathy for rape or sexual assault survivors
- attitudes towards gender roles

1 Rape myths are those ideas or beliefs that "deny or minimize victim injury or blame the victims for their own victimization" (Carmody & Washington, 2001, p. 424). Most researchers agree that rape myths are "generally false but are widely and persistently held, and...serve to justify male sexual aggression against women" (Lonsway & Fitzgerald, 1994, p. 217).

- attitudes towards women's rights and roles
- attitudes towards intimate relationships with women
- bystander attitudes
- bystander efficacy
- bystander intention

Although the focus of the review is on rape and other forms of sexual violence, we have also included behavioral outcomes related to non-sexual forms of violence against women due to the high correlation between the perpetration of sexual and non-sexual forms of violence.

Quality assessment

Critical appraisal of the studies was based on the Cochrane Collaboration's Tool for Assessing Risk of Bias. This involved assessing whether there was an adequate method of sequence generation and allocation concealment; whether there was blinding of assessors; if attrition or drop-outs were dealt with satisfactorily; and whether there was an assessment of other potential confounders. Additionally, studies were assessed for their strength and quality based on the sample size and length of time between intervention and follow-up.

Results

A total of 65 studies were suitable for inclusion in this review. Additional studies may or may not fit the criteria but attempts to obtain these studies (through electronic searching and contacting authors and associated organizations) were unsuccessful.

Four of the 65 included studies were randomized by individual, and 13 of the studies were cluster- randomized by classroom, school, village, or other pre-formed grouping. Sample sizes of the studies ranged from n=29 to n=4,800, with most of the samples sizes between 100 and 600 participants. It is important to note that most of the included studies (68%) had both boys and girls or both young men and young women in their samples. Of the 21 studies that includes samples of only boys and/or young men, the majority (86%) were carried out with older teens.

Setting

The studies took place in 11 different countries, four of which are classified as high-income (Australia, Canada, The Netherlands, and the USA), four of which were classified as middle-income (Brazil, India, Korea, and South Africa) and three of which were classified as low-income (Ethiopia, Nicaragua, and Thailand). The majority of the studies (n=50 or 85%) took place in a high-income country, predominantly the USA. In the other 10 countries in which studies took place, between one and four studies were done, including: Four in Canada; three in Australia, India, and South Africa respectively; and one study in each of the following - Brazil, Ethiopia, Korea, The Netherlands, and Thailand.

The vast majority (90%) of the studies took place in school settings. A total of 9 studies were conducted in low/moderate income countries, while 56 were conducted in high income countries. Fifty-one of these were conducted in the USA or Canada. Three of the included studies targeted high-risk populations.

Interventions

Nearly one-third (n=20) of interventions were one session, with another 14 interventions conducted in 2-9 sessions, and another 12 being conducted in 10-15 sessions. Session lengths ranged from about 1 hour to 4.5 hours, with the majority lasting about one hour. Some interventions were not session based, but were conducted as media or education campaigns that lasted from a few weeks to several years.

A majority of the interventions used teachers (n=17, with four of these using health education teachers specifically) or facilitators (n=18) to deliver the interventions. The vast majority (n=55) used group education methods to deliver the intervention, often using existing curricula, including the following: Bringing in the Bystander; Building Relationships in Greater Harmony B.R.I.G.H.T.; Connections Curriculum; Ending Violence; Expect Respect; FYCARE; Love U2; Program H; Reaching and Teaching Teens to Stop Violence; Relationship Smarts; Respect, Protect, Connect; SAFE-T; Skills for Violence-Free Relationships; Stepping Stones; The Men's Program; The Wise Guys School-based Male Responsibility Curriculum; The Youth Relationships Project; UDAAN Curriculum; White Ribbon Campaign Education and Action Kit; Working Together; and Yaari-Dosti (an Indian adaptation of Program H).

Outcomes

All of the outcomes were measured in more than one study. Nine studies looked at perpetration of sexual violence, while 16 examined perpetration of nonsexual violence. A total of 47 studies examined the outcome measure of attitudes toward violence, while 25 examined attitudes toward gender and relationships with women. A total of 14 examined bystander attitudes, while five examined bystander behaviors. All outcomes were based on self-reporting by study participants.

Overall Strength of a Study

In order to examine the evidence provided by the studies that were strongest methodologically, studies were placed into one of three categories: strongest, moderate, or other, using guidance from the Cochrane Collaboration's Tool. Studies that fell into the "strongest" category had the following characteristics. First, these studies utilized randomized assignment at the individual level, or cluster randomized sampling with a sufficient number of clusters and/or sufficient statistical analyses to accommodate a smaller number of clusters. Second, these studies had sufficient sample sizes (at least 30 boys/men) at follow-up. Third, they had follow-up of at least one month. Fourth, these studies had no major methodological flaws or risks of bias (discussed above) that reduced their methodological strength. Studies fell into the "moderate" category if they were strong methodologically in many ways, and met many of the criteria above, but fell short of the "strong" category because of at least one significant risk of bias or methodological challenge, such as having a very small sample size, having sampling challenges, or problems with attrition that make results questionable. Studies in the "moderate" category had follow-up measurement of at least one month. Studies that fell into the "other" category had multiple methodological weaknesses that limited the utility of their findings, and/or had follow-up of less than one month.

A total of eight studies met criteria that placed them in the category of "strongest" studies. A total of 21 studies fell into the "moderate" category. A total of 36 studies fell into the "other" category. Of the strongest studies, six of these studies took place in the USA, with one in Canada and one in South Africa. All of the studies were implemented in school settings, with two of them being implemented at the university level. Both the heavy representation from the USA and from studies that were implemented within educational settings is reflective of the overall body of studies reviewed in this review, as the majority were conducted in the USA in educational settings. Ages of participants in these eight studies ranged from 11 to 26, which is also typical of the body of studies. These studies varied widely in their interventions, measures used, and findings.

Summary of Main Results

Overall, the studies in the review provide substantial evidence of effectiveness of interventions to improve boys' and young men's attitudes towards rape and other forms of violence against women, as well as attitudes towards rigid gender stereotypes that condone or allow this violence to occur. Evidence of effectiveness related to behaviors is less straightforward.

Behavior Change

Decreased Perpetration of Violence

While changes in attitudes have been linked to improvements in non-violent behavior outcomes in the research literature, there is little evidence of the effectiveness of interventions to actually decrease boys' and young men's perpetration of violent behaviors in the long-term. Only eight of the strong or moderate studies in the review attempted to measure perpetration of sexual violence, and only three of these were focused on younger teens. Out of these eight studies, only one [Foshee et al. 2004] demonstrated a significant impact on behavior: four years after participating in Safe Dates, a school-based, multi-component, mixed-sex intervention, adolescents reported perpetrating significantly less sexual and physical dating violence than those in a control group.

Decreased Perpetration of Non-Sexual Violence

Compared to studies that measured the use of sexual violence, a larger number (16) of studies measured outcomes related to non-sexual forms of violence, or both sexual and non-sexual violence. However, only nine of these studies were classified as strong or moderate[2]. Of these nine studies, only seven were significant. Of these, four were focused on early teens, five entailed mixed-sex interventions and most (seven) involved more prolonged interventions of at least 12 sessions that addressed violence within the broader context of respectful intimate relationships. The majority of the studies that demonstrated a positive impact also had a substantial follow-up period of at least one year.

Attitude Change

Attitudes Toward Violence

Of the 16 strong or moderate studies that measured attitudes toward violence, only 10 had significant findings. Of these, only one was focused on early teens [Foshee et al. 2000]. The Foshee study was a mixed-gender intervention, and had large samples sizes ($n > 1500$), approximately half male respondents, and measured attitude change at 1-year follow-up.

Acceptance of Rape Myths

One of the most commonly used attitude measures in this area of study is the acceptance of rape myths (Brecklin and Forde 2001). A total of 19 of the 47 studies that measured attitudes towards violence included a specific outcome measure related to the acceptance of rape myths. Of these 19, only nine were in the strong or moderate category. Of these, five studies demonstrated a significant impact on reducing adherence to common rape myths [Davis and Liddell 2002; Fay and Medway 2006; Foubert and Marriott 1997; Hillenbrand-Gunn 2010; Stephens and George 2009]. All five studies involved relatively short-term interventions of one to six sessions, three worked with boys and/or young men in single-sex groups, and two worked with boys and/or young men in mixed-sex groups. All five studies showed significant reductions in rape myth acceptance, with follow-ups of at least four weeks post-intervention, with one following up five months after the intervention.

Bystander Attitudes

Interventions with a focus on bystander attitudes represent a promising and growing area in rape prevention. Of 14 included studies that sought to measure bystander attitudes, efficacy or intentions, the majority were from the last five years, reflecting a shift in methodology in working with men in violence prevention. Since many interventions target general populations of boys and men, among whom there are generally only a minority who are perpetrators

2 At least one [e.g. Verma et al. 2008] of these studies actually reported physical and sexual violence as one outcome.

or likely perpetrators, the logic is that it is more effective to approach men as allies, and to cultivate their commitment to and capacity for preventing and intervening. Four of the 14 studies that focused on bystander attitudes, efficacy and/or intentions fell into the strong or moderate category, and three of these reported significant findings [Gidycz et al. 2011, Moynihan et al. 2010; Banyard et al. 2007].

Implications for Practice

The findings from this review have a number of implications for the practice, including findings related to the relative effectiveness of the following: Single-sex or mixed-sex interventions; active learning or more didactic strategies; a focus on perpetrator behaviors versus consequences of abuse versus gender socialization, empathy, and bystander behaviors; implementation by facilitators versus peers; and system-wide versus targeted interventions. Findings from this review also have implications related to the dosage/length of interventions and the cultural reach of interventions. Each of these is discussed below.

Mixed-Sex versus Single-Sex Settings

First, the relative effectiveness of mixed-sex versus single-sex groups is one of the most discussed aspects of working with men and boys. This review suggests that there are both positive and negative aspects of implementing intervention in mixed-sex settings.

Facilitation

In about half of the studies reviewed, the study explicitly stated that the people implementing the intervention were trained professionals. Most utilized teachers, but in some cases the implementers were attorneys, psychologists, or staff from a rape crisis center, for example. In about ¼ of the studies, implementation was conducted by "facilitators" who had received at least some training in the intervention. In about 15% of the studies reviewed, the intervention was delivered by peers. Significant findings across the studies did not seem to vary with any consistency depending on whether the intervention was implemented by people who were professionals with experience in the content that went beyond that provided by the intervention.

System-Wide Versus Targeted

Very few of the studies reviewed were system-wide. Rather, most were focused on specific, limited target populations. Four studies could be characterized as system-wide, and each of these was implemented outside of the USA. Three of these [CEDPA 2011, Solórzano 2008, Verma 2008] showed significant changes in the outcomes of interest, including attitudes toward violence, attitudes toward gender and relationships with women, use of violence against women.

Dosage or Intervention Length

Since time and resources are almost always limited for interventions, it is often necessary to negotiate for time to implement an intervention (especially in school settings in which the curriculum is already crowded), a critical question that must be addressed is that of dosage. Practitioners need to know how much of an intervention is necessary in order to achieve the desired outcomes, while not wasting resources by providing more services than are necessary. The findings from this review do not provide a definitive answer to this question, in part because most interventions were not tested at multiple dosages.

Cultural Reach

Another finding of this review is that there is a critical need to increase the reach of these interventions to additional populations. The majority of the research conducted in this area was conducted in the United States and Canada, and it often focused on White males who were not at high risk of perpetration. More research needs to be conducted on the effectiveness of interventions with broader groups, especially those who are at higher risk of perpetration, and among target populations outside of the Global North.

Implications for Research

Findings from this review also have implications for research. These include findings that suggest there is a need for more rigorous evaluation designs, more standardized measures, additional measures of behavioral outcomes, additional differential effectiveness analyses, and longer follow-up periods. Additionally, findings suggest the need for studies to more effectively pretest participants and a need for evaluation tools with higher reliability (particularly related to self-reporting). Last, more research is needed on links between bullying and sexual aggression, on which components of programming are responsible for effects, and on appropriate dosage.

Next Steps

There are still many unanswered questions in this field, and a tremendous need exists for additional research that has sufficient sample sizes, solid research design, reliable and valid measures, and sufficient follow-up to allow us to determine the most effective interventions across a variety of settings and target populations. What we do know is that some interventions seem to show promise. The work of program developers, researchers, and funders moving forward will be utilizing the promising work that has been done and building upon it. The findings from this review provide some guidance for those next steps and a springboard for further discussion.

1. Background

Violence against women is a widespread issue, one that exists in all cultural and socio-economic contexts. Among the various forms of violence that girls and women suffer, rape is often the least visible and least reported. In many cases, such as in dating or married relationships, rape or other forms of sexual violence may not be recognized by social or legal norms.

While the underlying causes of sexual violence are multiple and complex, among the core causes are unequal gender norms and power dynamics between men and women. Throughout the world, boys and men are largely the perpetrators of sexual violence, and girls and women are the victims. It is increasingly understood that men's use of violence is generally a learned behavior, rooted in the ways that boys and men are socialized. Indeed, research has found that incidents of rape are often more common in settings where social norms condone or ignore men's sexually coercive or aggressive behaviors (Katz 2006; Schwartz and DeKeseredy 2008). At the individual level, research has found that the extent to which men internalize and adhere to rigid or negative norms about gender and sexuality may influence their own behaviors (Murnen et al. 2002, Sugarman and Frankel 1996, Schumacher et al. 2001, Stith et al. 2004). In a survey carried out in Rio de Janeiro, Brazil, men who were more equitable in their gender attitudes also reported lower rates of violence against women than men who were inequitable (Barker et al. 2011, Barker 2005). Another key cause seems to be experiences of violence in childhood. Multiple studies have suggested that boys who experience sexual violence in childhood are themselves more likely to perpetrate sexual violence later in life, as are boys who experience other forms of violence as children (Barker et al. 2011, Jewkes et al. 2006).

While prevailing norms about manhood are among the central factors underlying sexual violence, it is important to recognize that other factors, including broader gender inequalities, national and international policies and economics, globalization, poverty, organized crime, war and conflict, media, and racial and ethnic stereotypes, also contribute to the risks for rape and sexual violence (Jõe-Canon 2006). Moreover, there are some situations and forms of rape and sexual violence that have more pathological roots and go beyond the sphere of social influences and discussions of masculinities while also interacting with these social influences.

Although there are often many difficulties in ascertaining the prevalence of rape (see page 11), it is generally true that in most settings, rape most often occurs in the context of intimate relationships or between acquaintances. In many settings, gender norms maintain that men must be sexually experienced, and that men must take the initiative or be aggressive in terms of sexual or romantic relationships while women must be relatively sexually inexperienced or passive and at the same time available. Men (and, at times, women) may believe that when a woman says no or refuses an advance (sexual or romantic) she is really saying maybe or yes, and therefore the male in this case should press the issue. This frequently blurs the lines of consent, making it easier for sexual violence to occur. Also, men may feel that depending on where things are in the relationship they are "entitled" to sex, for example, if they have paid for several dates, if they feel that physical contact is leading to penetrative sex or if they are married. There is also a common belief that men's sexuality is less "controllable" than women's, thus putting the onus on women to "protect" themselves. Additionally, social expectations for men and women tend to make excuses for perpetration of sexual violence and blame victims. For example, men (and women) may pardon sexual violence if a woman steps outside of the lines of expected behavior, by either dressing or behaving in ways that are judged as promiscuous.

Even with sexual violence that occurs outside the context of relationships or acquaintances, these prevailing gender norms are still very influential. That is, rape and sexual violence are most often perpetrated as a demonstration of power and rigid ideas about gender roles and "only secondarily problems of sexual behavior" (Martin 2005). As a result of the conflicts in Bosnia, Rwanda and the Democratic Republic of Congo (DRC), rape in the context of war has received widespread attention. While acts of sexual violence by soldiers are most often attributed to "military" masculinities, it is not necessary to separate these men from their broader social settings to understand their violent behaviors. Indeed, it is possible to identify similarities between these men's behaviors across different settings as well as between military and nonmilitary men (Higate 2007). Since soldiers continually have to wrestle with feelings of fear and powerlessness, for example, rape can be understood as a means to help them regain their feelings of power and control (Wesemann ND).

Moreover, while rape may be used as a strategy of war to subjugate and inflict shame upon the "conquered" – not just individuals, but also families and communities (Thomas and Ralph 1994) – at the same time, it is also important to not reduce sexual violence in the context of war and conflict to another weapon of war (Baaz & Stern 2010). As Baaz and Stern explain "the DRC case shows that while sexual and other violence is often used to humiliate and intimidate, this humiliation and intimidation is also much less strategic and much more complex than a combat strategy … the weapon of war discourse is problematic since it masks the ways in which this violence is a manifestation of failed military integration processes and other forms of institutional dysfunction" (Baaz & Stern 2010; Smits and Cruz, 2011).

In countries where rape perpetration has been most studied, the majority of men who will rape will do so for the first time in their teenage years. Available data from the United States indicate that a significant proportion of male sex offenses are committed by persons under age 18 and that a majority of adult male sex offenders report that their first sexual offense occurred during adolescence (White and Smith 2009). A 2010 study of rape prevalence in South Africa suggested that "most men who rape do so for the first time as teenagers and almost all men who ever rape do so by their mid 20s" (Jewkes et al. 2010). Additionally, many men who rape will do so more than once in their lives. A study with university male students in the USA found that the "strongest predictor of sexual coercion was past sexual coercion, and men who had been sexually coercive at the first assessment were nearly eight times as likely as those who had not been sexually coercive to show recidivist behavior during the 1-year interval until the second assessment" (Hall et al. 2006).

The key challenge in primary rape prevention, therefore, is to intervene before the first perpetration of rape or sexual violence, and to reach boys and young men when their attitudes and beliefs about gender stereotypes and sexuality are developing. There is evidence that this is often at an earlier age than many of the current violence prevention and sexuality education programs target. For example, research with middle school students in the USA found that young adolescents may already hold victim-blaming beliefs (Anderson et al. 2004). A study with Australian youth found that young people aged 13-16 were more likely to hold attitudes which reflected beliefs or norms that condone gender-based violence (The Body Shop and Unicef 2006). "The recognition of 'pressure for sex' as a form of relationship abuse was low in that age group. In the under-18 age group, young men were three times more likely than young women to state that 'pressure for sex' is not abusive. Younger people were in general more likely to attribute responsibility for relationship abuse to both men *and* women, suggesting a limited understanding of unequal power relationships between genders" (The Body Shop and Unicef 2006). While the "nature of the link between violence-supportive attitudes and direct or indirect involvement in violent behavior is still being debated and researched" (Flood & Pease 2006), evidence demonstrates that sexually aggressive behaviors do start early. A study in the USA found that girls reported suffering sexual harassment as early as middle school (McMaster et al., 2002; Pelligrini, 2001).

Adolescence is a time when many boys and young men first explore and experiment with their beliefs about roles in intimate relationships, about dating dynamics and male-female interactions. Research has shown that this is also the time when intimate partner violence first starts to manifest itself, and the earlier and more often it occurs, the more it reinforces the idea that violence is a "normal" part of dating relationships (Laner 1990).

Research has found that one of the most common forms of violence in adolescent dating relationships is sexual coercion, or the pressure to engage in unwanted sex (Jackson et al. 2000). The use of coercion is particularly concerning because adolescents "are just beginning to develop social scripts for dating, and at the same time they are subjected to peer pressure for sex and to sensationalized depictions of sexual relations in the popular media that normalize coercive attitudes and behavior" (Levine & Kanin 1987; Lonsway 1996). For boys and young men, the pressure to prove their masculinity through sexual relations can be particularly salient. In a study in Kenya, adolescent boys said that they resorted to pressuring girls to have sex because they feared that they would be defined as 'not man enough' or impotent if they did not have sex (Njue et al. 2005 in Jejeebhoy 2005). Likewise, research in Cambodia about youth and *bauk*, or gang rape, found that young men associated participation in *bauk* as an affirmation of their masculinity, or as one young men explained, "He wouldn't be a man if he was unable to rape her" (Wilkinson et al. 2005). Research in these different settings also found that much of the discourse which associates men's sexual experiences with the affirmation of their masculinity is reinforced by norms which present men's sexual needs and desires as uncontrollable, and that once aroused, require immediate satisfaction (Cáceres 2005; Jejeebhoy 2005; Wilkinson et al. 2005).

In this context, it is necessary to reach boys and young men (and girls and young women) with programs that address sexual violence before expectations, attitudes and behaviors about dating are well developed (Fay and Medway 2006). It is also necessary to challenge gender norms and sexual scripts that often underlie coercion and violence in relationships, including "those cultural norms that normalize intimate sexual violence as a 'natural' or 'exaggerated' expression of innate male sexuality" (Carmody and Carrington 2000). In addition, it is necessary to teach adolescents effective communication and problem-solving skills and to promote a culture of responsibility for preventing sexual violence (Berkowitz 2004).

Definitions

According to the World Health Organization (WHO 2002), sexual violence is "any sexual act, attempt to obtain a sexual act, unwanted sexual comments or advances, or acts to traffic, or otherwise directed against a person's sexuality using coercion, by any person regardless of their relationship to the victim, in any setting including but not limited to home and work." This definition includes rape, "defined as the physically forced or otherwise coerced penetration of the vulva or anus with a penis, other body part or object" (WHO 2010). Rape is also commonly further classified according to the perpetrator and/or context. Acquaintance rape or date rape refers to sexual penetration, vaginal, anal or oral that is forced upon a victim by someone he or she knows, as opposed to stranger rape which refers to a sexual act that is forced upon a victim by someone he or she does not know. These categories/classifications, however, are not without controversy. For example, the category of marital rape, a sexual act that is forced upon someone by his or her spouse is not socially nor legally recognized in many contexts.

Prevalence of Sexual Violence

The prevalence of rape is often difficult to ascertain from routine data because rape is the least reported of all violent crimes (Rand 2009). When it is reported, varying classification methods make it difficult to compare statistics across settings. Very few population-based surveys have attempted to record perpetration of sexual violence. Most of these have been among college men in North America, using very small sample sizes, hence limiting the reliability and generalizability of the findings (WHO 2010).

The WHO multi-country study on violence against women was carried out with large samples of women and therefore provides one of the most robust sources of information on the extent of men's use of sexual coercion and rape as reported by women. The study found that the percentage of women who reported sexual violence by a partner ranged widely from 6 percent to 59 percent, with the majority of settings falling between 10 percent and 50 percent. In most settings, about half of sexual violence was a result of actual physical force rather than fear of violence that might result from denying sexual advances of perpetrators (WHO 2005). The same study found that up to 12 percent of women reported having suffered sexual violence (after the age of 15) at the hands of a non-partner, including strangers, male family members (not including fathers) or male friends of the family.

For some girls and women, coerced sex and sexual violence may be a common childhood experience. In 10 of the 15 settings included in the WHO multi-country study, more than 5 percent of women who had ever had sex reported their first sexual experience as forced (WHO 2005). The study also found that, in all settings except Ethiopia, the younger a woman was at the time of her first experience of sexual intercourse, the greater the likelihood that she had been forced. Over 30 percent of women in more than half the settings who reported first sex before the age of 15 years described that sexual experience as forced.

The international nonprofit organization "Together for Girls" reports that an estimated 73 million boys have experienced sexual abuse, and a recent report on sexual violence in Tanzania estimated that three in 10 girls and three in 20 boys had experienced sexual violence (Together for Girls 2011; Reza, 2009; United Nations Children's Fund, U.S. Centers for Disease Control and Prevention & Muhimbili University of Health and Allied Sciences, 2011). Sexual violence against men and boys is no less a gendered issue than sexual violence against women and girls (Alison 2007). There is a consensus in the UK and US male rape literature that the sexual victimization of men is a serious, yet largely "invisible" problem and there is some evidence that men report sexual victimization even less than women do (Isely 1997; Pino and Meier, 1999). Indeed, although women are the victims of sexual violence far more often than men, most experts believe that official statistics vastly under-represent the number of male rape victims and that men are less likely than women to report rape (by a male perpetrator) (Doherty and Anderson 2004; Pino and Meier 1999; WHO 2002).

There are a variety of reasons why male rape is underreported, including shame, guilt, fear of not being believed or of being denounced for what has occurred, and strong prejudices surrounding male sexuality which discourage men from coming forward (Doherty and Anderson 2004; Pino & Meier, 1999; WHO 2002). Some male victims may remain silent rather than risk being labeled as a 'closet homosexual', bi-sexual, or for fear of being ridiculed as weak or inadequate (Scarce 1997; Ussher 1997; West 2000 in Doherty and Anderson 2004). The social stigmatization that male victims of rape may experience has been described as a form of 'secondary victimization" and has been associated with the under-reporting of rape (Doherty and Anderson 2004).

Prevalence of Perpetration of Sexual Violence

Prevalence rates for perpetration of sexual violence are also challenging to capture accurately, and vary by study and setting. A number of major studies are working to help us gain a better understanding of perpetration of sexual violence globally. For example, a multi-country study using the International Men and Gender Equality Survey (IMAGES) interviewed more than 8,000 men aged between 18-59 in Brazil, Chile, Croatia, India, Mexico and Rwanda. Reported acts of perpetration of sexual violence by men against women and girls in this study ranged from 6 % to 29 %; in India and Mexico (Barker et. al. 2011). A similar piece of work is being done in seven countries across Asia and the Pacific, including Bangladesh, Cambodia, China, Indonesia, Papua New Guinea, Sri Lanka, and Viet Nam, in which over 15,000 men and women are being surveyed (The Change Project, 2011). Preliminary findings from Bangladesh

found between 10% (urban) and 15% (rural) of men report having ever forced their partners into sex, with almost all sexual violence occurring within marriage (The Change Project, 2011). Several studies indicate that the prevalence rates for perpetration by adolescents are high. A study with college students in Ethiopia found that 16.9% reported having perpetrated acts of sexual violence (Philpart et al. 2009). In Australia, the Bureau of Statistics has reported that 20-30% of rapes and 30-50% of child sexual assaults are perpetrated by adolescents (Chung et al. 2006 in Imbesi 2008). In South Africa, 27.6% of men in a random sample of 1,686 men aged 18-49 years reported having forced a woman (either an intimate partner, acquaintance or stranger) to have sex with them against their will (Jewkes et al. 2010), with 75% of men reporting having perpetrated their first act of rape as a teenager (Jewkes et al 2011).

Risk and Protective Factors Related to Perpetration of Sexual Violence

Men's perpetration of sexual violence is influenced by various factors, operating at peer, community societal and individual levels. As discussed earlier, one of the most commonly cited societal factors is the existence of gender inequalities, as expressed through patriarchy or male dominance (Russo and Pirlott, 2006; Taft 2009). These inequalities are maintained by gender norms which espouse men's superiority over women and women's submissiveness, as well as those which associate the affirmation of a man's identity with the extent and frequency of his (hetero) sexual experiences. The WHO 2010 review states that "Sexual violence committed by men is to a large extent rooted in ideologies of male sexual entitlement. These belief systems grant women extremely few legitimate options to refuse sexual advances". Many men thus simply exclude the possibility that their sexual advances towards a woman might be rejected or that a woman has the right to make an autonomous decision about participating in sex. In many cultures, women as well as men regard marriage as entailing an obligation on women to be sexually available virtually without limit, though sex may be culturally proscribed at certain times, such as after childbirth or during menstruation. Men who report having multiple sexual partners are also more likely to perpetrate intimate partner violence or sexual violence. It is thought that these men may seek out multiple sexual partners as a source of peer status and self-esteem, relating to their female partners impersonally and without the appropriate emotional bonding (Jewkes et al. 2006).

In societies where the ideology of male superiority is strong – emphasizing dominance, physical strength and male honor – rape is more common. Countries with a culture of violence, or where violent conflict is taking place, experience an increase in other forms of violence, including sexual violence (Jewkes et al. 2002). Another community-level risk factor is a lack of strong, or any, sanctions against perpetrators of sexual violence. As noted in Ahrens' 2006 study, "by maintaining power structures and practices that have the effect of blaming victims, rather than holding perpetrators accountable, …cultures tacitly support perpetrators and their crimes" (Ahrens 2006). See Table 1 for more details about risk factors, and the referenced studies for more detailed discussion about these factors.

Table 1: Risk Factors for Sexual Violence

Perpetration by men	Victimization of women
Individual level	
Demographics	
Low socio-economic status/income	Young age
	Lower education
	Separated/divorced and single women
Gang membership	Early exposure to sexual activity
Exposure to child maltreatment	
Sexual abuse	Intra-parental violence
Physical abuse	Sexual abuse
Intra-parental violence	
Mental disorder	
Antisocial personality	Depression
Substance use	
Harmful use of alcohol	Harmful use of alcohol
Illicit drug use	Illicit drug use
	Prior victimization
Relationship level	
Multiple partners/infidelity	Multiple partners
Low resistance to peer pressure	
Family honour and sexual purity	
Community level	
Weak community sanctions	Weak community sanctions
Poverty	Poverty
Societal level	
Traditional gender norms and social norms supportive of violence	Traditional gender norms and social norms supportive of violence
Ideologies of male sexual entitlement	Ideologies of male sexual entitlement
Weak legal sanctions	Weak legal sanctions

(Source: WHO, 2010)
**Some of these factors are also risk factors for intimate partner violence*

Protective factors

Much less research has been conducted on protective factors. "Most of the research on the perpetration and experiencing of intimate partner violence and sexual violence has focused on factors associated with an increased likelihood of intimate partner violence and/or sexual violence (risk factors) rather than factors that decrease or buffer against risk (protective factors) (WHO 2010)". However, one protective factor that is often cited is level of education. One study found that men who were more highly educated were approximately 40% less likely to perpetrate intimate partner violence compared to less-educated men (Johnson and Das 2009). Another protective factor that has been studied is based on social norms research that knowledge about other's attitudes can increase a bystander's willingness to intervene. "Men's perception of other men's willingness to intervene to prevent a sexual assault was the strongest predictor of men's own willingness to intervene to prevent a sexual assault, accounting for 42% of the variance in men's willingness to intervene" (WHO 2010).

Theoretical Basis for the Interventions

Multiple theoretical approaches have been used by those developing and implementing interventions to reduce physical and sexual violence against women, including theories about gender, and gender and power, as well as behavior change theories, and others. Rather than discuss the dozens of theories that underlie efforts to reduce rates of violence, several theories that are common among the studies examined by this review are briefly discussed below. The scope of this review is on primary prevention, entailing efforts that seek to lessen the likelihood of boys and men using violence in the first place, and efforts that seek to address underlying causes of violence before it occurs. The interventions included in this review draw from several different theories, including social learning theory; social norms theory; belief system theory; and theories around bystanders, which are discussed briefly below.

Several interventions draw upon social learning theory, which incorporates Bandura's (1973; 1986) principles of learning via modeling, and emphasizes the importance of perpetrators learning abusive behavior in their families of origin. "Social learning theory specifies that individuals will be more likely to replicate behaviour modeled to them, when the behaviour modeled has positive consequences and does not have negative consequences. Further research is required to investigate the complex trajectories that lead to the perpetration of [violence]" (Grant 2007). Interventions based in social learning theory typically involve skill building activities, observational learning, modeling of the desired behaviors, activities designed to enhance self-efficacy, and activities that reinforce the desired behaviors (Lanier 1998).

Other interventions draw upon social norms theory. According to social norms theory, people are often negatively influenced by inaccurate perceptions of how other members of their social group act or think (Berkowitz 2003; Haines 1997). When making decisions about their behavior, people consciously or unconsciously take into account what "most people" in their same social position appear to be doing. When people misperceive peers' attitudes toward risky health behaviors (e.g., drug use, disordered eating, sexual assault), they may be more likely to engage in these behaviors than they would be if their perceptions were accurate. Therefore, correcting misperceptions of peers' attitudes should decrease the likelihood of engaging in problematic behavior (Haines 1997, Kilmartin 2010). Interventions that utilize social norms theory are grounded in normative feedback, and work to reveal the behaviors and attitudes of peers, including the actual discomfort levels of peers for rape supportive attitudes and behaviors.

Another important theoretical influence utilized by some of the interventions is belief system theory, which posits that interventions must be designed to maintain people's existing self-conceptions. Nearly all rape prevention interventions assume male program participants to be potential rapists. However, research has shown that men, regardless of whether they have committed sexual assault, do not perceive themselves to be potential rapists; thus, programs assuming men to be potential rapists are unlikely to achieve desired outcomes. "Treating male participants in rape-prevention programs as potential perpetrators is also likely to increase men's defensiveness and reduce the likelihood of college men wanting to attend and heed such programming" (Scheel, Johnson, Schneider and Smith 2001).

Increasingly, programs are applying another approach that attempts to influence men by appealing to beliefs they are shown to have about being potential helpers: the bystander approach. As noted in Banyard et al (2007), this method still entails working with groups of individuals, but takes "next steps toward a broader community approach to prevention…[by giving] all members a specific role in preventing sexual violence…This role includes interrupting situations that could lead to assault before it happens or during an incident, speaking out against social norms that support sexual violence, and having skills to be an effective and supportive ally to survivors" (Banyard et al. 2007). As Moynihan (2011) notes, "The framework

also fits with research showing that an important causal factor in sexual and intimate partner violence, particularly violence against women on campus, is peer/social norms that implicitly and explicitly support coercion in relationships. Active, helpful bystanders can instead be trained to counter such social norms with strategies such as challenging rape myths when they are expressed, refusing to help create the context for using alcohol as a weapon to facilitate assault, or to remain silent about predatory behaviors."

Why is This Review Important?

In recent years, there has been a significant increase in attention to programming with boys and men and the evidence base regarding what works and what does not work. Violence prevention is still an area in which there are many questions and there is a need for consolidating evidence for advocacy and practice purposes. While there are already many existing reviews of rape prevention programs with male university students and dating violence prevention programs with adolescents, these reviews have largely been limited to North American or Australian contexts and most often focused only on those programs published in the academic literature – not grey literature. This review is more extensive, in terms of age range (adolescents) and settings (global), and in terms of program goals and scope because it includes those programs that do not have rape prevention as primary focus, but which address underlying risk factors.

Objectives

The objectives of this systematic review are to investigate the effectiveness of interventions for preventing boys' and young men's use of sexual violence, including: increasing gender-equitable attitudes, bystander intentions, and other attitudes and behaviors. It aims to explore the potential for intervening directly with boys and young men in community and school settings to address risk factors for sexual violence within diverse socio-cultural settings. The interventions in this review are those aimed at changing general attitudes and behaviors. The focus is on high-quality studies, defined as having a randomized controlled or quasi-experimental design.

In addition to assessing relevant studies, this review will also examine the extent to which the identified interventions have been adapted from one setting, culture or context to another, as well as from one age group to another.

2. Methodology

Criteria for Considering Studies for This Review

The following sections provide detailed information about inclusion and exclusion criteria. (Table 2 summarizes the research question in PICO format).

Table 2. Research Question in PICO format

Population	Adolescent boys and young men ages 12-19
Intervention	Preventing boys and young men's use of rape and other forms of sexual violence; improving attitudes toward gender, violence and/or intimate relationships with women that are correlated with boys' and young men's use of rape and other forms of sexual violence; increasing boys' and young men's positive bystander attitudes and behaviors.
Comparator	No intervention, services as usual or alternative services
Outcomes	Perpetration of sexual violence against a girl or woman; Perpetration of other forms of violence against a girl or woman; Bystander behaviors; Attitudes towards violence against women (sexual and other forms); Attitudes towards gender roles and/or intimate relationships with girls and women and; Bystander attitudes, efficacy or intentions.
Context	Global
Study Designs	Controlled studies, with or without randomization.

Types of studies

Randomized or quasi-randomized controlled trials were prioritized as they provide the highest level of evidence and the least risk of bias which could influence effect size or direction. However, due to the limited number of available randomized studies, we also included non-randomized studies with a treatment and a control group.

Types of participants

Participants included adolescent boys and young men aged 12-19 years. The primary focus of the review is on younger teenage boys but we have also included examples of interventions for older teenagers as these may serve as models for adaptations. For those studies with older teens, generally university students, the criteria for inclusion was a mean age below 20 years.

The interventions included in this review are primarily focused on directly targeting individual and group attitudes and behaviors, although we know it is necessary to also have interventions that target communities, systems and structures. Clearly, "macro-level interventions that increase structural supports and resources that decrease gender inequality – as well as interventions to reduce gender inequality at the community and individual levels – may serve to decrease intimate partner violence and sexual violence" (WHO 2010). Our review is limited to individual and group level interventions, with the exception of a few interventions that also targeted the broader community level. These included interventions like social norm initiatives and educational campaigns. Some of the interventions were conducted with mixed-sex groups, while others were with single-sex groups.

Types of interventions

Interventions included in this review are those designed to prevent boys and young men's use of rape and other forms of sexual violence, or to change those attitudes about gender, violence, and/or intimate relationships with women that are correlated with boys' and young men's use of rape and other forms of sexual violence. Interventions designed to increase boys' and young men's positive bystander attitudes and behaviors are also included.

One type of intervention targeting the individual or groups are those in which the primary focus is rape prevention, utilizing one or more of a number of strategies including 1) the development of empathy for victims; 2) learning the meaning of consent; 3) addressing bystander behavior; and 4) and re-imagining what it means to be male. Another type of intervention focuses on preventing dating violence, and addressing various forms of violence in the context of intimate relationships more broadly. A third type of intervention are those implemented with boys and young men that address gender norms and stereotypes that are linked to violence, and in which prevention of rape and sexual violence are not necessarily the primary goal of the intervention. Among the interventions we reviewed, the most common methodologies are workshops. Some are based on active learning, and are interactive, while others are didactic, and more passive, with more lecture. Some are a combination of both styles.

All identified studies which met the criteria and could be accessed were included. They were critically appraised for quality, and results have been synthesized to the degree possible. Comparative interventions included 'no treatment', 'treatment-as-usual' or an alternative treatment.

Types of outcome measures

This review focuses on interventions with the following outcome measures:

Behaviors

- perpetration of rape or other forms of sexual violence against a girl or woman
- perpetration of non-sexual forms of violence against a girl or woman
- bystander behaviors

Attitudes and Efficacy

- intention/likelihood to perpetrate rape or other forms of sexual violence
- intention/likelihood to perpetrate non-sexual forms of violence against an intimate partner
- rape-supportive attitudes, including rape myth acceptance[3]
- attitudes towards gender-based violence
- attitudes towards intimate partner violence
- attitudes towards interpersonal violence
- empathy for rape or sexual assault survivors
- attitudes towards gender roles
- attitudes towards women's rights and roles
- attitudes towards intimate relationships with women
- bystander attitudes
- bystander efficacy
- bystander intention

Although the focus of the review is on rape and other forms of sexual violence, we have also included behavioral outcomes related to non-sexual forms of violence against women due to the high correlation between the perpetration of sexual and non-sexual forms of violence.

3 Rape myths are those ideas or beliefs that "deny or minimize victim injury or blame the victims for their own victimization" (Carmody & Washington, 2001, p. 424). Most researchers agree that rape myths are "generally false but are widely and persistently held, and...serve to justify male sexual aggression against women" (Lonsway & Fitzgerald, 1994, p. 217).

Search Methods

Electronic searches for published literature

Computerized literature searches were conducted using The Cochrane Library, DARE, ERIC, and PubMED, and with the terms “adolescents,” “boys,” “students,” “young men,” AND “rape,” “sexual violence,” “dating violence,” “sexual assault.”

Grey literature

Unpublished or non-indexed reports were sought through searches with Google, using the same terms listed above.

Reference lists

The references of all included articles and book chapters were examined for additional studies to include. Reference lists of articles identified through database searches and bibliographies of relevant papers were also examined to identify further studies.

Data Collection and Analysis

Selection of studies

Titles and abstracts of studies identified through searches of electronic databases were reviewed to determine whether they met the inclusion criteria. Full copies of those which appeared to meet the criteria were assessed by the reviewers.

Quality assessment

Critical appraisal of the studies was based on the Cochrane Collaboration’s Tool for Assessing Risk of Bias. This involved assessing whether there was an adequate method of sequence generation and allocation concealment, whether there was blinding of assessors, if attrition or drop-outs were dealt with satisfactorily, and whether there was an assessment of other potential confounders. Additionally, studies were assessed for their strength and quality based on the sample size and length of time between intervention and follow-up.

Measures of treatment effect

In studies for which effect sizes (Cohen’s *d*) were not reported by study authors, they were calculated for reports which provided means and standard deviations, scores for T-tests, or F-tests with one degree of freedom, and size of intervention and control groups. This was done using equations published by Thalheimer and Cook (2002). Discussion of the magnitude of effects was based on Cohen’s suggestions that effect sizes of .20 are small, .50 medium, and .80 large.

Assessment of heterogeneity and data synthesis

Due to significant differences in the populations, settings, outcomes, data analyses and reporting of included studies, no attempts were made to combine the data in a meta-analysis. Characteristics of included studies are presented and discussed, as are outcome data and trends of effect (significance and direction of effect) where possible. The effects of the studies were grouped by outcome type, producing the six groups for narrative synthesis: effects on perpetration of rape or other forms of sexual violence against girls or women; effects on perpetration of non-sexual form of violence against girls or women; effects on attitudes toward violence, effects on attitudes toward gender roles and/or intimate relationships with women; effects on bystander attitudes; and effects on bystander behaviors. Details about these outcomes are provided in the next section.

3. Results

A total of 65 studies were suitable for inclusion in this review. Additional studies may or may not fit the criteria but attempts to obtain these studies (through electronic searching and contacting authors and associated organizations) were unsuccessful.

Included Studies

Tables summarizing the individual characteristics of each of the included studies can be found in the appendix.

Design and Sample Size

Four of the 65 included studies were randomized by individual, and 13 of the studies were cluster- randomized by classroom, school, village, or other pre-formed grouping. Sample sizes of the studies ranged from n=29 [Weisz and Black 2001] to n=4,800 [Solórzano et al. 2008], with most of the samples sizes between 100 and 600 participants. Three of the studies had what could be considered very small sample sizes (n<50), and five of the studies had samples sizes over 2,000. It is important to note that most of the included studies (68%) had both boys and girls or both young men and young women in their samples. (Information about whether the intervention was provided to men/boys only was not available for 7 studies). The percentage and number of boys and young men within these samples are provided in Table 10. Of the 21 studies that includes samples of only boys and/or young men, the majority (86%) were carried out with older teens. Two of the included studies [Jewkes et al. 2008; Solórzano et al. 2008] reported a power calculation to determine sample size.

The post-test and follow-up data collection for the included studies ranged from immediately after the completion of the intervention to four years after the intervention. The majority of the studies (34 of the 65; or 52%) collected post-test data either immediately or less than one month after the intervention. Ten studies collected follow-up data at least one year afterwards, and two of these studies collected follow-up data four years after the intervention [Foshee et al 2004, Gardner and Boellaard 2007].

Setting

The studies took place in 11 different countries, four of which are classified as high-income (Australia, Canada, The Netherlands, and the USA), four of which were classified as middle-income (Brazil, India, Korea, and South Africa) and three of which were classified as low-income (Ethiopia, Nicaragua, and Thailand). The majority of the studies (n=50 or 85%) took place in a high-income country, predominantly the USA. In the other 10 countries in which studies took place, between one and four studies were done, including: four in Canada; three in Australia, India, and South Africa respectively; and one study in each of the following Brazil, Ethiopia, Korea, the Netherlands, and Thailand.

The vast majority (90%) of the studies took place in school settings. Eight studies took place outside or not exclusively in school settings [ICRW, 2011; Pulerwitz et al. 2006; Pulerwitz et al. 2010; Salazar and Cook 2006; Solórzano et al. 2008; Soul City 2006; Verma et al. 2008 and; Wolfe et al. 2003].

Participants

Table 10 lists the characteristics of participants of each study in this review. The age range of participants in the included studies ranged from 8 to 29 years. The majority (69%) of the included studies included older teens, from 15 to 19 years old. It is worth noting that several of these studies also included participants in their early 20s, however, only those studies for which the average age was 19 or below were included in the review.

For the majority of the studies (55%), it was not possible to identify whether the participants were from urban or rural settings, or both. In large part, this was due to the fact that 23 of the studies were carried out at university settings in the USA, which traditionally draw students from diverse geographical backgrounds. Moreover, thirteen of the studies with middle or high school students did not provide specific information on the settings from which the participants came. Of the 29 studies for which there is information on the setting, 15 were carried out with participants from urban settings, six with participants from rural settings, and seven with participants from both urban and rural settings. A total of 9 studies were conducted in low/moderate income countries, while 56 were conducted in high income countries. Fifty-one of these were conducted in the USA or Canada.

Three of the included studies [Salazar and Cook 2006, Schewe and O Donohue 1996, Wolfe et al. 2003] targeted high-risk populations. Another seven studies used differential effectiveness analysis to determine the specific effects of the intervention on high-risk subgroups within the population they reached [Davis and Liddell 2002, Foshee et al. 2004, Foubert and Newberry 2006, Gidycz et al. 2011, Lanier et al. 1998, Pacifici et al. 2001, Stephens and George 2009].

Interventions

Of the 65 interventions, 37 were conducted in mixed-sex environments, and 27 in single sex (boys and men) environments. (It was not possible to determine this for one study). Nearly one-third (n=20) of interventions were one session, with another 14 interventions conducted in 2-9 sessions, and another 12 being conducted in 10-15 sessions. Session lengths ranged from about 1 hour to 4.5 hours, with the majority lasting about one hour. Some interventions were not session based, but were conducted as media or education campaigns that lasted from a few weeks to several years.

Most of the interventions used teachers (n=17, with four of these using health education teachers specifically) or facilitators (n=18) to deliver the interventions. Many of the interventions noted that they provided training to their facilitators (n=10). Several (n=7) used peer educators to deliver the interventions. A couple used coaches, attorneys, the research team, or student performers/presenters to deliver the intervention.

The vast majority (n=55) used group education methods to deliver the intervention, often using existing curricula, including the following: Bringing in the Bystander; Building Relationships in Greater Harmony B.R.I.G.H.T.; Connections Curriculum; Ending Violence; Expect Respect; FYCARE; Love U2; Program H; Reaching and Teaching Teens to Stop Violence; Relationship Smarts; Respect, Protect, Connect; SAFE-T; Skills for Violence-Free Relationships; Stepping Stones; The Men's Program; The Wise Guys School-based Male Responsibility Curriculum; The Youth Relationships Project; UDAAN Curriculum; White Ribbon Campaign Education and Action Kit; Working Together; and Yaari-Dosti (an Indian adaptation of Program H).

Outcomes

The included studies measured a total of 18 different outcomes which were relevant to this review. These can be classified under six broad headings:

1. Effects on perpetration of rape or other forms of sexual violence against girls or women
2. Effects on perpetration of non-sexual form of violence against girls or women
   - physical violence against an intimate partner
   - psychological violence against an intimate partner
   - violence against an intimate partner (includes both physical and psychological)
3. Effects on bystander behaviors
4. Effects on attitudes towards violence
   - rape-supportive attitudes, including rape myth acceptance and perceptions about consent

- empathy for rape or sexual assault survivors
- intention/likelihood to perpetrate rape or other forms of sexual violence
- intention/likelihood to perpetrate non-sexual form of violence
- attitudes towards gender-based violence
- attitudes towards intimate partner violence
- attitudes towards interpersonal violence

5. Effects on attitudes towards gender roles and/or intimate relationships with women (other than or not exclusively related to violence)
   - attitudes towards gender roles
   - attitudes towards women's rights and roles
   - attitudes towards intimate relationships
6. Effects on bystander attitudes, intentions and efficacy

All of the outcomes were measured in more than one study. Nine studies looked at perpetration of sexual violence, while 16 examined perpetration of nonsexual violence. A total of 47 studies examined the outcome area of attitudes toward violence, while 25 examined attitudes toward gender and relationships with women. A total of 14 examined bystander attitudes, while five examined bystander behaviors. All outcomes were based on self-reporting by study participants.

These outcomes were conceptualized differently in each study and measured using different instruments which had varying or unclear levels of reliability and validity. Overall, 96 different scales or instruments were used to measure outcomes, the majority of which were based on instruments that have been documented in published literature and used in other studies. A total of 17 measures were used in more than one study. Only six were used in five or more studies, including:

- Illinois Rape Myth Acceptance Scale (12 studies);
- Burt Rape Myth Acceptance Scale (9 studies);
- Attitudes Toward Women Scale (5 studies);
- Conflict Tactics Scale (5 studies);
- Gender Equitable Men Scale (5 studies); and
- Rape Empathy Scale (5 studies).

Risk of Bias

Multiple risks of bias exist for the included studies. Traditionally examined risks of bias include those associated with a lack of proper sequence generation, a lack of allocation concealment, a lack of blinding, incomplete outcome data, selective reporting, and other sources of bias such as self-selection bias, attrition bias, measurement bias and others. Additional biases that may be introduced when cluster randomized trials were reviewed include: the possibility of selection bias that may have occurred if recruiting happened after clusters were assigned to treatment or control groups; whether baseline differences existed in the groups; whether there was any attrition of clusters; and whether statistical analyses were conducted that are appropriate for cluster randomized trials.

While these are all important biases to consider, it is also critical to remember that a lack of allocation concealment, or a lack of blinding, for example, may not necessarily introduce a risk of bias that would have affected the outcomes. It is important, in each case, to determine whether the possibility of the introduction of bias due to any of these factors is likely to have had an impact on the outcomes of the research. For example, while blinding is critical in many fields of study, it may not represent as serious a threat to the type of real-world evaluation being conducted in these studies. Therefore, the likelihood that bias could have been introduced that would have had a significant impact on the results of a study was considered when these studies were reviewed.

Four of the included studies were randomized controlled studies and 13 were cluster-randomized. Most studies had methodological or reporting weaknesses. Potential sources of bias are discussed below and summarized in Table 11. For each of the potential sources of bias discussed below, most of the studies (between 41 and 57 for the different sources of bias) suffered from a lack of information that would have allowed for a more thorough assessment of potential bias that could have been introduced due to any of these threats. Therefore, it is important to note that in many cases, a lack of information may be the real issue, and it may be possible that there were no threats of bias, or that these threats were not realized.

Sequence generation

In 41 of the 65 studies, it was unclear whether adequate methods of sequence generation were utilized. A total of seven of the 65 studies could be judged as having adequate methods of sequence generation. Of the randomized or cluster-randomized studies, two provided sufficient information on the sequence generation process used [Roberts 2009; Wolfe et al. 2009].

Allocation concealment

In 43 of the 65 studies, it was unclear whether adequate methods of allocation concealment were utilized. A total of six of the 65 studies could be judged as having adequate allocation concealment. Of the randomized or cluster-randomized studies, three provided sufficient information on the allocation concealment methods used [Pacifici et al. 2001; Roberts 2009; Wolfe et al. 2009].

Blinding

In 57 of the 65 studies, it was unclear whether adequate blinding was utilized. Only one of the 65 studies could be judged as having adequate blinding. Of the randomized or cluster-randomized studies, only one provided sufficient information on the blinding methods used [Wolfe et al. 2009].

Other potential biases

Other potential biases that were assessed as part of this review included incomplete outcome data and selective reporting. In 44 of the 65 studies, it was unclear whether other threats of potential bias were present. Only five of the 65 studies could be judged as having complete outcome data and no potential problems related to selective reporting.

Overall strength of a study

In order to examine the evidence provided by the studies that were strongest methodologically, studies were placed into one of three categories: strongest, moderate, or other, using guidance from the Cochrane Collaboration's Tool. Studies that fell into the "strongest" category had the following characteristics,

- utilized randomized assignment at the individual level, or cluster randomized sampling with a sufficient number of clusters and/or sufficient statistical analyses to accommodate a smaller number of clusters;

- had sufficient sample sizes (at least 30 boys/men) at follow-up;
- had follow-up of at least one month; and
- had no major methodological flaws or risks of bias (discussed above) that reduced their methodological strength.

Studies fell into the "moderate" category if they were strong methodologically in many ways, and met many of the criteria above, but fell short of the "strong" category because of at least one significant risk of bias or methodological challenge, such as having a very small sample size, having sampling challenges, or problems with attrition that make results questionable. Studies in the "moderate" category had follow-up measurement of at least one month.

Studies that fell into the "other" category had multiple methodological weaknesses that limited the utility of their findings, and/or had follow-up of less than one month.

A total of eight studies met criteria that placed them in the category of "strongest" studies. A total of 21 studies fell into the "moderate" category. A total of 36 studies fell into the "other" category. See table 3 for details about the categorization of studies by outcome.

Of the strongest studies, six of these studies took place in the USA, with one in Canada and one in South Africa. Most of these studies were implemented in school settings, with two of them being implemented at the university level. Both the heavy representation from the USA and from studies that were implemented within educational settings is reflective of the overall body of studies reviewed in this review, as the majority were conducted in the USA in educational settings. Ages of participants in these eight studies ranged from 11 to 26, which is also typical of the body of studies. These studies varied widely in their interventions, measures used, and findings.

Table 3: Number of Studies by Classification and Outcome

Outcome	Strongest	Moderate	Other	Total Studies
Use of Sexual Violence	4	4	1	9
Use of Non-Sexual Violence	5	4	7	16
Attitudes toward Violence	4	14	29	47
Attitudes Toward Women	2	10	13	25
Bystander Behaviors	1	2	2	5
Bystander Attitudes, Efficacy, and Intentions	2	2	10	14
Total Unique Studies	8	21	36	65

The tables provided in the next sections provide additional detail about the strongest studies and the outcomes of interest measured by these studies.

Intervention Effects

The studies included in this review varied greatly in intervention design, outcome measures, time points and methodological quality, thus statistical synthesis (i.e. meta-analysis) was not feasible or possible. Effect sizes (Cohen's *d*) were provided by study authors or could be calculated for 35 of the outcome measures reported in the included studies - confidence intervals were reported in fewer than 10 cases.

Due to the inherent limitations of comparing effect sizes across a heterogeneous group of studies, this section will provide a narrative overview of the effects, grouped by outcome category and comparator. Detailed information about effects, including effect sizes where available or calculable, are listed in the appendix.

While every study in this review of the research provides some insight into interventions and evaluation of these interventions, the discussion that follows includes only the 29 studies that were classified as "strongest" or "moderate".

Outcome Category: Reduction in perpetration of sexual violence against women

Nine of the studies evaluated the effects of intervention on perpetration of sexual violence against women.

Table 4: Reduction in perpetration of sexual violence against women (strongest and moderate studies)

Study	Location	Sample Size	Assessed at	Significant	Strength of Study
Foshee et al. 1998; 2000; 2004	USA	n=460 (41.5% male)	4 years	Y (p=.04)	Strongest
Gidycz et al. 2011	USA	n=494 (100% male)	7 months	N	Strongest
Jewkes et al. 2008	South Africa	n=2776 (49% male)	2 years	N	Strongest
Taylor et al. 2010	USA	n=1,592 (48% male)	6 months	N	Strongest
Gidycz et al. 2001	USA	n=1,108 (27% male)	9 weeks	N	Moderate
Lobo 2004	USA	n=237 (100% male)	6 months	N	Moderate
Kantor ND	USA	n=157 (42% male)	1 year	N	Moderate
Stephens & George 2009	USA	n=65 (100% male)	5 weeks	N	Moderate

Four of these studies were in the "strong" category: Foshee et al. (1998, 2000, 2004); Gidycz et al. 2011, Jewkes et al. 2008, and Taylor et al. 2010. Of these four studies, only one reported statistically significant ($p<.05$) positive effects on boys' and/or young men's self-reported use of sexual violence. The follow-up for this study was four years after the intervention [Foshee et al. 2004], but there were some problems with the statistical analyses, particularly at follow-up that may make the results somewhat less reliable. The effect size could not be provided or calculated for this study. Another study [Jewkes et. al. 2008] generated some evidence that a lower proportion of men who participated in their "Stepping Stones" program reported raping or attempting rape at 12 months. Another four studies were in the "moderate" category, including Gidycz et al. 2001; Kantor ND; Lobo 2004; and Stephens and George 2009. Although these studies followed participants for between five weeks and one year, none of these studies showed significant change at follow-up.

Outcome Category: Reduction in perpetration of other forms of violence against women

Sixteen of the studies evaluated the effects of intervention on perpetration of non-sexual forms of violence, or both sexual and non-sexual violence, against girls and/or women. Nine of these studies fell into the strongest or moderate categories. Table 5 refers.

Table 5: Reduction in perpetration of other forms of violence against women (strongest and moderate studies)

Study	Location	Sample Size	Assessed at	Significant	Strength of Study
Foshee et al. 1998; 2000; 2004	USA	n=460 (41.5% male)	4 years	Y (p=.02 and p=.01)	Strongest
Jaycox et al. 2006	USA	n=2540 (48% male)	6 months	N	Strongest
Jewkes et al. 2008	South Africa	n=2776 (49% male)	2 years	Y (p=.054)	Strongest
Kerpelman et al. 2009	USA	n=249 (--% male)	2 years	N	Strongest
Wolfe et al. 2009	Canada	n=1722 (47.2% male)	2.5 years	Y (p=.002)	Strongest
Gardner and Boellaard 2007	USA	n=150 (19.4% male)	4 years	Y (p<.05)	Moderate
Pulerwitz et al. 2010	Ethiopia	n=645 (100% male)	6 months	Y (p<0.05)	Moderate
Verma et al. 2008	India	n=1,137 (100% male)	6 months	Y (p<0.05)	Moderate
Wolfe et al. 2003	Canada	n=158 (50% male)	1 year	Y (p<.01 and p<.05)	Moderate

Five of these 16 studies fell into the "strongest" category: Foshee et al. 1998, 2000, 2004; Jaycox et al. 2006; Jewkes et al. 2008; Kerpelman et al. 2009; and Wolfe et al. 2009. Of these, only the Foshee et al., Jewkes et al. and Wolfe et al. studies had significant findings. The Foshee et al. research, which was conducted in the USA with mixed sex groups of 11-17 year olds, provided 10 sessions of interactive school-based educational and art activities, along with a theater production. The Jewkes et al. (2008) study, conducted in South Africa, is particularly significant, in that it captured significant change in perpetration of physical violence and sexual intimate partner violence at a 24-month follow-up. The 13-session "Stepping Stones" curriculum, with approximately 50 hours of the intervention over a 6-8 week period, was implemented in same-sex groups and was facilitated by people close in age to the participants. The Wolfe et al. (2009) study, conducted in Canada, showed significant differences between the boys in the control and treatment groups, with the treatment group reporting significantly less physical dating violence. The 21 sessions on dating violence and healthy relationships were 75 minutes each and were delivered in the classroom in single-sex groups by teachers.

Another four studies fell into the moderate category, including: Gardner and Boellaard 2007; Pulerwitz et al. 2010; Verma et al. 2008; and Wolfe et al. 2003. These studies followed participants for between six months and four years, and each study showed significant findings. The Gardner and Boellaard (2007) study, conducted in the USA, showed that for use of violence in resolving conflicts, the program and control groups were significantly different from the posttest at the 1 year follow-up. This intervention utilized 15 1-hour mixed-sex sessions of the "Connections Curriculum" to provide information and skills-building for healthy relationships. The Pulerwitz et al. (2010) study, conducted in Ethiopia, showed positive, significant impact among treatment group participants, with significantly more support of equitable norms and less support of inequitable norms. A total of 19 two-hour sessions of an adapted version of Program M were provided in single-sex settings by trained facilitators. The Verma et al.

(2008) study, conducted in India, showed that young men exposed to the intervention in urban and rural settings were about five times and two times less likely, respectively, to report partner violence ($p < .001$). The group education was provided in 23 single-sex sessions, over six months, by peer educators. The Wolfe et al. (2003) study, conducted in Canada found significant changes in physical and emotional violence perpetration, but with girls showed greater reduction in their threatening behaviors over time than boys. The intervention provided 18 2-hour mixed-sex sessions of group education, using the "Youth Relationships Project" to prevent dating violence.

Outcome Category: Improvement in attitudes towards violence

As noted above, 47 studies evaluated the effects of intervention on attitudes towards violence, including: rape-supportive attitudes such as rape myth acceptance and misconceptions about consent; empathy for rape or sexual assault survivors; intention/likelihood to perpetrate rape or other forms of sexual violence; intention/likelihood to perpetrate non-sexual forms of violence; attitudes towards gender-based violence; attitudes towards intimate partner violence and; attitudes towards interpersonal violence. Of these 47 studies, only four [Foshee et al. 1998, 2000, 2004; Gidycz et al. 2011; Jaycox et al. 2006; Taylor et al. 2010] fell into the "strongest" category. Only the Foshee et al. and Gidycz et al. studies reported significant findings. In the Foshee et al. research, respondents in the treatment group, compared with those in the control group, were significantly less accepting of dating violence ($p=.05$) at follow up. In the Gidycz et al. (2001) study, after seven months, men in the treatment group were significantly more likely to label rape scenarios as rape, and sexually aggressive treatment group participants reported lower levels of reinforcement for sexual aggression at the four month follow up. (See Table 6).

Table 6: Improvement in attitudes towards violence (strongest and moderate studies)

Study	Location	Sample Size	Assessed at	Significant	Strength of Study
Foshee et al. 1998; 2000; 2004	USA	n= 1603 (48.8% male)	1 year	Y (p<.05)	Strongest
Gidycz et al. 2011	USA	n=494 (100% male)	7 months	Y (p<.05)	Strongest
Jaycox et al. 2006	USA	n=2540 (48% male)	6 months	N	Strongest
Taylor et al. 2010	USA	n=1,592 (48% male)	6 months	N	Strongest
Banyard et al. 2007	USA	n=389 (44% male)	4 months	Y (p<.05)	Moderate
Davis and Liddell 2002	USA	n=87 (100% male)	6 weeks	Y (p<.05)	Moderate
Fay and Medway 2006	USA	n=154 (44% male)	5-7 months	Y (p<.01)	Moderate
Foubert and Marriott 1997	USA	n=77 (100% male)	immediate, and 2 mo	Y (p<.001)	Moderate
Gidycz et al. 2001	USA	n=1,108 (27% male)	9 weeks	N	Moderate
Hillenbrand-Gunn et al. 2010	USA	n=212 (60% male)	4 weeks	Y (p<.05)	Moderate
Lobo 2004	USA	n=237 (100% male)	6 months	N	Moderate
Macgowan 1997	USA	n=440 (43.9% male)	Immediate	N	Moderate
Roberts 2009	USA	n=332 (49% male)	3 weeks	Y (p<.05)	Moderate
Soul City 2006	South Africa	n=1,877 (49% male)	3 years	N	Moderate
Stephens and George 2009	USA	n=65 (100% male)	5 weeks	Y (p<.01)	Moderate
Weisz and Black 2001	USA	n=66 (42% male)	immediate and 6 mo	Y (p<.05)	Moderate

Another 12 fell into the "moderate" category. Of these 12, a total of 8 had significant findings. Banyard et al. (2007) detected significant changes in attitudes in one session at four month follow-up using a one-session, or three-session single-sex group education approach, with role-playing and skill building. Davis and Liddell (2002) found that men who participated in one of the two rape prevention programs indicated lower rape myth acceptance than the control group immediately following treatment, but differences disappeared at six-week follow-up. Their intervention included one single-sex 90-minute session that incorporated TV and movie clips and utilized social norms theory. Fay and Medway (2006) found that participants' rape myth acceptance decreased significantly from pretest to 5-7 month follow-up, using two hours of mixed-sex, interactive group education, plus homework assignments, carried out over two days. Foubert and Marriott (1997) had similar findings at immediate post test, but not at two month follow-up, using a one-hour single-sex interactive session that involved the use of video, plus discussion and communication skill building. Hillenbrand-Gunn et al. (2010) found significant changes using a three-session, mixed-sex intervention based on the "Working Together" manual which uses a "men-as-allies" approach. Roberts (2009) found that attitudes toward teen dating violence were significantly different between treatment and control groups over time, using four mixed-sex sessions of the "Expect Respect: Preventing Teen Dating Violence" curriculum. Stephens and George (2009) found that high-risk men had significantly increased empathy for victims of violence at a five-week follow-up, using a one-session, single-sex approach which incorporated an intervention video. Weisz and Black (2001) found that significant changes in knowledge and attitude were sustained at six months, using 12 single-sex sessions of the "Reaching and Teaching Teens to Stop Violence" curriculum.

Outcome Category: Improvement in attitudes towards gender roles and/or intimate relationships with women

A total of 25 studies evaluated the effects of intervention on attitudes towards gender roles and/or intimate relationships with women, including: attitudes towards gender roles; attitudes towards women's rights and roles and; attitudes towards intimate relationships. Only two of these studies fell into the "strongest" category, including: Foshee et al. (1998, 2000, 2004) and Gidycz et al (2011). Neither of these had significant findings related to attitudes towards gender roles and/or intimate relationships with women. (See Table 7).

Table 7: Improvement in attitudes towards gender roles and/or intimate relationships with women (strongest and moderate studies)

Study	Location	Sample Size	Assessed at	Significant	Strength of Study
Foshee et al. 1998; 2000; 2004	USA	n= 1603 (48.8% male)	1 year	N	Strongest
Gidycz et al. 2011	USA	n=494 (100% male)	7 months	N	Strongest
Davis and Liddell 2002	USA	n=87 (100% male)	6 weeks	N	Moderate
Gidycz et al. 2001	USA	n=1,108 (27%male)	9 weeks	N	Moderate
Gruchow and Brown 2011	USA	n=230 (100% male)	6 months	Y (p<.013)	Moderate
Lobo 2004	USA	n=237 (100% male)	6 months	N	Moderate
Pulerwitz et al. 2006	Brazil	n=609 (100% male)	1 year	Y (p<.05)	Moderate
Pulerwitz et al. 2010	Ethiopia	n=645 (100% male)	6 months	Y (p<.05)	Moderate
Solórzano et al. 2008	Nicaragua	n=4800 (46% male)	2 years	Y (p<.001)	Moderate
Soul City 2006	South Africa	n=1,877 (49% male)	3 years	N	Moderate
Verma et al. 2008	India	n=1,137 (100% male)	6 months	Y (p<.05)	Moderate
Winkel and DeKleuver 1997	Netherlands	n=198 (31% male)	immediate	N	Moderate

Another ten fell into the "moderate" category. Of these, five had significant findings. The Gruchow and Brown (2011) study, conducted in the US, showed significantly higher scores at six month follow-up for participants, 8-10 weekly single-sex sessions based on the "Wise Guys School-Based Male Responsibility Curriculum". The Pulerwitz et al. (2006) study, conducted in Brazil, showed significantly lower levels of support for gender inequitable attitudes at six month follow-up, and at one year, with 18 two-hour single-sex sessions over six months, using an adaptation of Program H. Pulerwitz et al. (2010), conducted in Ethiopia, also had significant findings, with more support of gender equitable norms at six months among participants who received both the adapted Program H curriculum, and the community education campaign. The Solórzano et al. (2008) study, conducted in Nicaragua, resulted in significantly more support of gender equitable attitudes among participants who were exposed to a multimedia campaign, including a weekly soap opera, radio show, and youth leadership activities throughout a two-year period. The Verma et al. (2008) study, conducted in India, found that young men in the intervention arms in both the urban and rural settings were significantly more likely to have positive changes in gender equitable attitudes (using the Gender Equitable Men Scale) compared to young men in the comparison sites. This intervention was 23 sessions long, conducted over six months, with the group education occurring in single-sex groups.

Outcome Category: Increase in bystander behaviors

Five of the studies evaluated the effects of intervention on bystander behaviors. Of these five studies, only one [Moynihan et al. 2010] was in the "strongest" category. This study, conducted in the US, reported no significant findings, but did report a trend in the predicted direction in terms of effect on bystander behaviors. Table 8 refers.

Table 8: Increase in bystander behaviors (strongest and moderate studies)

Study	Location	Sample Size	Assessed at	Significant	Strength of Study
Moynihan et al. 2011	USA	n=98 (56.8% male)	2 months	N	Strongest
Banyard et al. 2007	USA	n=389 (44% male)	4 months	Y (p<0.01)	Moderate
Kantor ND	USA	n=157 (42% male)	1 year	N	Moderate

Two of the studies were in the "moderate" category (Banyard et al. 2007 and Kantor ND). Banyard et al., conducted in the US, reported statistically significant positive effects on young men's self-reported bystander behaviors at four months, using one or three 90 minute single-sex group education sessions. Kantor (ND) reported no significant changes.

Outcome Category: Improvement in bystander attitudes, efficacy and/or intentions

Fourteen of the studies evaluated the effects of intervention on bystander attitudes, efficacy and/or intentions, four of which fell into the "strong" or "moderate" categories – see Table 9.

Table 9: Improvement in bystander attitudes, efficacy and/or intentions (strongest and moderate studies)

Study	Location	Sample Size	Assessed at	Significant	Strength of Study
Gidycz et al. 2011	USA	n=494 (100% male)	7 months	Y (P<.05)	Strongest
Moynihan et al. 2010	USA	n=98 (56.8% male)	2 months	Y (p<.001)	Strongest
Banyard et al. 2007	USA	n=389 (44% male)	4 months	Y (p<.001)	Moderate
Lobo 2004	USA	n=237 (100% male)	6 months	N	Moderate

The two studies that fell into the "strongest" category, were: Gidycz et al. (2011) and Moynihan et al. (2010). The Gidycz et al. study, conducted in the US, reported significant findings at seven months on a bystander intervention measure, using one 1-hour mixed-sex group education session. The Moynihan et al. (2010) study, conducted in the US, reported a significant difference in bystander efficacy at two month follow-up, using one 4.5 hour long session called "Bringing in the Bystander".

Another two fell into the "moderate" category: Banyard et al. (2007) and Lobo (2004). The Banyard et al. (2007) study reported a significant difference in bystander attitudes at four month follow-up. Findings were significant for both the group that received one session of the intervention, and the group that received three sessions. The Lobo (2004) study reported no significant findings.

4. Discussion

Summary of Main Results

Overall, the studies in the review provide substantial evidence of effectiveness of interventions to improve boys' and young men's attitudes towards rape and other forms of violence against women, as well as attitudes towards rigid gender stereotypes that condone or allow this violence to occur. Evidence of effectiveness related to behaviors is less straightforward.

Behavior Change

Decreased Perpetration of Violence

While changes in attitudes have been linked to improvements in non-violent behavior outcomes in the research literature, there is little evidence of the effectiveness of interventions to actually decrease boys' and young men's perpetration of violent behaviors in the long-term.

Only eight of the strong or moderate studies in the review attempted to measure perpetration of sexual violence, and only three of these were focused on younger teens. Out of these eight studies, only one [Foshee et al. 2004] demonstrated a significant impact on behavior: Four years after participating in Safe Dates, a school-based, multi-component, mixed-sex intervention, adolescents reported perpetrating significantly less sexual and physical dating violence than those in a control group. The results showed that the program was equally effective for males and females. In addition to being the only study in the review to demonstrate a reduction in the use of sexual violence, the study also has one of the most rigorous and sound evaluation methodologies, including randomization and a substantial follow-up period, despite some inconsistencies in the follow-up methodology over time. One of the presumed keys to the success of Safe Dates was that it was offered at the beginning of the adolescents' dating careers, thereby reinforcing the importance of starting prevention work early. It is also worth highlighting that while there were positive changes in mediating variables at the one-year follow-up (e.g. less acceptance of dating violence), positive change in the actual perpetration of sexual violence was not observed until the four-year follow-up.

Clearly, one of the limitations in the research is that too few studies have actually been able to directly measure behavior change related to sexual violence. While 23 of the strong or moderate studies included in this review sought to measure attitude change, only eight sought to also measure changes in the actual perpetration of sexual violence. Even taking into consideration the numerous methodological and ethical challenges involved in the measurement of violence perpetration, the evaluation literature is still sparse in this area. Indeed, one of the most salient findings from this review is that there is an over-reliance on the use of attitude measures as proxies for behaviors. While behavior change theories suggest the possibility of a strong link between increased education and changes in attitudes and a subsequent change in behavior, this link is still, to a large degree, an empirical question. While attitudes have an important role to play in promoting individual and broader social change, it is necessary for researchers and practitioners to move beyond the assumption that attitude change in and of itself is a sufficient outcome for rape prevention efforts. The fact that there are many interventions that have demonstrated impact on attitudes correlated to violence is a promising indication that programs are moving in a positive direction. However, it is not sufficient, and there is a need to measure behaviors and actual rates of sexual violence.

Furthermore, another limitation of the interventions and the research is that if exposure to violence (and experiencing sexual violence) is a key factor in young men's use of sexual violence, primary prevention efforts may need enhanced screening to help identify young men who have experienced violence. Indeed, it may be these boys and young men who most need both psycho-social support as well as prevention efforts. Given the challenges already noted of screening or identifying for sexual violence – not to mention ethical questions involved – reaching those boys and young men most at-risk of carrying out sexual violence remains challenging.

Another limitation in the current research is a lack of follow-up over time to determine whether effects of an intervention are lasting, and to identify effects that may not be evidence in the short run, such as the four-year follow-up findings in the Safe Dates evaluation. This type of finding is more evidence of the necessity for longer-term follow-up, particularly when working with boys and young men who are in a formative and dynamic period of their lives in terms of interactions and relationships with girls and young women.

Decreased Perpetration of Non-Sexual Violence

Compared to studies that measured the use of sexual violence, a larger number (16) of studies measured outcomes related to non-sexual forms of violence, or both sexual and non-sexual violence. However, only nine of these studies were classified as strong or moderate[4]. Of these nine studies, only seven were significant. Of these, four were focused on early teens, most (five) entailed mixed-sex interventions and most (seven) involved more prolonged interventions of at least 12 sessions that addressed violence within the broader context of respectful intimate relationships. The majority of the studies that demonstrated a positive impact also had a substantial follow-up period of at least one year.

Attitude Change

Attitudes Toward Violence

Of the 16 strong or moderate studies that measured attitudes toward violence, only 10 had significant findings. Of these, only one was focused on early teens [Foshee et al. 2000]. The Foshee study was a mixed-gender intervention, and had large samples sizes (n > 1500), approximately half male respondents, and measured attitude change at 1-year follow-up. A challenge with studies that focus on changing attitudes with younger teens is that while other studies included in this review [CEDPA 2001] and elsewhere (Schewe 2006 in Lonsway et al 2009) have found that younger teens are more amenable to changing their attitudes than older teens or adults, there is also evidence that youth generally have more rigid attitudes. Thus, working with younger teens presents a particular challenge for interventions.

Acceptance of Rape Myths

One of the most commonly used attitude measures in this area of study is the acceptance of rape myths (Brecklin and Forde 2001). A total of 19 of the 47 studies that measured attitudes towards violence included a specific outcome measure related to the acceptance of rape myths. Of these 19, only nine were in the strong or moderate category. Of these, five studies demonstrated a significant impact on reducing adherence to common rape myths [Davis and Liddell 2002; Fay and Medway 2006; Foubert and Marriott 1997; Hillenbrand-Gunn 2010; Stephens and George 2009]. All five studies involved relatively short-term interventions of one to six sessions, three worked with boys and/or young men in single-sex groups, and two worked with boys and/or young men in mixed-sex groups. All five studies showed significant reductions in rape myth acceptance, with follow-ups of at least four weeks post-intervention,

4 At least one [e.g. Verma et al. 2008] of these studies actually reported physical and sexual violence as one outcome.

with one following up five months after the intervention. Despite this, a remaining limitation of all of these studies is whether these attitude changes influenced behaviors. Another limitation is that all studies that include rape myth acceptance as an outcome measure were undertaken in the USA, generally with homogeneous populations, thereby limiting the extent to which these positive findings can be generalized to more diverse populations and settings.

Bystander Attitudes

Interventions with a focus on bystander attitudes represent a promising and growing area in rape prevention. Of the 14 included studies that sought to measure bystander attitudes, efficacy or intentions, the majority were from the last five years, reflecting a shift in methodology in working with men in violence prevention. Since many interventions target general populations of boys and men, among whom there are generally only a minority who are perpetrators or likely perpetrators, the logic is that it is more effective to approach men as allies, and to cultivate their commitment to and capacity for preventing and intervening. Four of the 14 studies that focused on bystander attitudes, efficacy and/or intentions fell into the strong or moderate category, and three of these reported significant findings [Gidycz et al. 2011, Moynihan et al. 2010; Banyard et al. 2007]. As with the relationship between personal attitudes towards violence and perpetration of violence, however, there are a limited number of studies that have measured actual bystander behaviors. There were only five in this review, three of which fell into the strongest or moderate classifications, and only one of which was shown to have significant impact [Banyard et al. 2007]. In this study, significant results were seen after one session of the intervention, which is promising.

Findings Related to Targets

Another finding from the review is that most studies have been carried out with general populations, not necessarily those boys and men who are at most risk of perpetrating sexual violence. Furthermore, for many of the programs, the participants were self-selected. Those who self-select to participate may be those most motivated to change (Stephens and George 2009), and as a result, positive outcomes with general groups may overestimate prevention effectiveness.

Only three studies deliberately targeted high-risk boys and men [Salazar and Cook 2006, Schewe and O'Donohue 1996, Wolfe et al. 2003]. Of these, two [Salazar and Cook 2006, Schewe and O'Donohue 1996] demonstrated positive impact on attitudes, but were not among the strongest/moderate studies. Additionally, each assessed "high-risk" differently, with Salazar and Cook working with adjudicated males and Schewe and O'Donohue with participants who were prescreened and scored 15 or greater on the Attraction to Sexual Aggression scale. An additional six studies targeted fraternity members at universities, also often considered to be a high-risk group for perpetration of sexual assault. Among those studies that targeted general populations, four strong/moderate studies employed a differential effectiveness evaluation [Davis and Liddell 2002, Foshee et al. 2004, Gidycz et al. 2011, Stephens and George 2009] to assess differences in impact between high and low risk participants. In Stephens and George (2009) and Davis and Liddell (2002), lower-risk men responded more positively than higher-risk men. No other studies screened participants for previous exposure to, or victimization related to, sexual violence. Because of the potentially high correlation between experience of violence as a child and later perpetration of violence (noted previously), it may be important for future interventions to include screening for experience of violence, for programs to target populations who have experienced violence, and to study the impact of both the previously experienced violence and the intervention on attitudes, intentions and eventual behaviors related to intimate partner and sexual violence.

Mixed-Sex versus Single-Sex Groups

Of the 65 studies reviewed, a total of 21 targeted men and/or boys only. The remaining 44 were mixed-sex interventions. Of the 21 studies that targeted men/boys only, nine were in the strongest or moderate categories. Of these nine, seven (78%) reported significant findings. Of the 44 studies conducted with both men/boys and women/girls, 18 were in the strong/moderate category. Of these 18, 12 (67%) reported significant findings. Therefore, a slightly higher percentage of studies that targeted men and/or boys only was significant. However, evidence in this area is not entirely clear.

Several of the studies that had significant findings and that were conducted with mixed-sex groups conducted differential analyses to determine whether effects were different for men/boys versus women/girls. For example, Wolfe et al. (2003) detected significant changes, but found that "gender played an important role in predicting abuse perpetration. In both conditions, girls reported higher levels of physical abuse perpetration and showed steeper declines over time than boys. Girls also reported more emotional abuse and threatening behaviors than boys. Finally, girls showed greater reduction in their threatening behaviors over time than boys." Further, in CEDPA (2011), there was "no consistent pattern in the disaggregated responses, [but] girls were generally slightly less permissive than boys and exhibited a greater tendency to significant changes than their male classmates. The statistically significant improvements observed were fuelled largely by girls."

However, the study conducted by Northeastern University (2007) reports that "While mean scores on the AV Scale changed significantly for both girls and boys from pre- to post-test, the change is slightly more pronounced for boys. This, too, is consistent with findings from the two previous evaluation studies, indicating that the Mentors in Violence Prevention Program has a slightly greater impact on boys than girls in terms of this construct." Clearly, more research is needed to determine whether, and under what circumstances, single-sex or mixed-sex implementation may be more effective.

Geography

Finally, only 10 studies were from outside North America, Europe, or Australia, six of which did not have rape prevention as a primary focus but rather approached violence via a broader gender/SRH/HIV lens. While this is a limited selection, the studies demonstrated positive results. Six demonstrated positive changes in gender-related attitudes and three demonstrated positive impact on the perpetration of intimate partner violence. As discussed below, three of these studies [Pulerwitz et al. 2006, Pulerwitz et al. 2010, Verma et al. 2008] drew from a common set of intervention and evaluation tools, thus providing evidence for the feasibility of cross-cultural adaptations.

Overall Completeness and Applicability of Evidence

In several aspects, the overall completeness and applicability of the evidence is high. However, there are many limitations. The wide range of intervention methodologies, settings, target populations, evaluation tools, and time frames of the outcome measures represented by the studies in this review allows for some level of generalisability, but there are also limitations in all of these areas.

Intervention Methodologies

First, mixed-sex and single-sex curricula, interactive and didactic sessions, short and long-term interventions, and peer- and adult- led facilitation were all represented in the review, suggesting a level of generalisability in terms of intervention methodologies, particularly group education approaches or workshops. However, while a handful of the studies combined group-level strategies with broader school-wide or community-wide campaigns and services, only two of the studies [Potter et al. 2009 and Solórzano et al. 2008] exclusively examined broader-level strategies (posters distributed around a college campus in the case of Potter et

al. 2009 and multi-media national campaigns in the case of Solórzano et al. 2008). Therefore, the findings of the review should not be generalized to broader-level strategies. Additionally, as noted below, despite the existence of a wide range of interventions, most have been tested exclusively in the Global North, and often with a very specific and somewhat homogeneous population of Caucasian males.

Settings and Target Populations

As noted above, the vast majority of the studies were primary prevention efforts directed at general populations of boys and young men. Therefore, the findings should not be generalized to high-risk boys and young men, particularly those who have already perpetrated rape or other forms of sexual violence or those who have experienced sexual violence. Second, because most of the studies were carried out in school-based settings in North America, there may be limited generalisability to school-based or community-based efforts in other settings. Third, because most of the studies were carried out in the Global North, there may be very limited generalisability to other settings outside of the Global North. The cultural factors and individual attitudes and beliefs that may be supportive of perpetration of violence in the Global North are likely very different from those that exist in other parts of the world, and the operationalization of those concepts can look very different, making the issues that need to be addressed by the interventions very different. For example, in a setting like South Africa, which has high rates of sexual violence perpetration among younger men and high rates of gang rape, it could be argued that sexual violence by boys and young men is normative. In a setting like a United States college campus, it can be argued that sexual violence is typically considered more pathological. Clearly, interventions for these disparate settings will need to address different core beliefs, attitudes, values, and behaviors.

It is possible that existing interventions, developed and tested in North America can be adapted to other settings effectively. For example, of the five studies implemented in community settings outside of North America, four represented intervention and evaluation methodologies that were adapted from other settings. Although this sample size does not allow for much generalisability, the fact that the four studies demonstrated significant positive impact on attitudes and behaviors does bolster the case for building on what currently exists and adapting it to be culturally relevant, feasible to implement, and effective for a variety of populations and settings. Whether existing interventions can be successfully adapted and implemented in other settings will vary based on the context, the intervention, and the cultural and individual norms and beliefs on which the intervention focuses.

Evaluation Tools

The studies in the review employed a wide range of evaluation tools – 96 in total – which may provide some generalisability in terms of measurement. A total of 16 of the measures identified in this review were used in more than one study, including several scales for measuring attitudes. The Illinois Rape Myth Acceptance Scale, the Bert Rape Myth Acceptance Scale, the Attitudes Toward Women Scale, the Conflict Tactics Scale, the Rape Empathy Scale and Gender Equitable Men (GEM) were all used in at least five different studies. These more frequently used evaluation tools may be most useful in terms of generalisability.

However, this wide range of evaluation tools may suggest the need to standardize measurement tools or encourage use of a narrow range of indicators that work well across cultural settings. Again, the measures that have been utilized in multiple studies and have been adequately tested for reliability and validity may provide a good starting point for identifying solid measures, encouraging their use, and developing other measures to fill gaps where solid measures have not yet been developed or adequately tested.

Time Frames for Measuring Outcomes

Outcomes were measured at a wide range of time points, from immediately after the intervention to four years post-intervention. This provides some information on both short- and long-term effects. However, most outcomes were measured immediately or within a short time period. The lack of longer-term follow-up is a serious limitation in the studies overall.

Quality of the Evidence

Table 12 in the appendix outline the GRADE quality of evidence and strength of recommendations.

The body of evidence in this review comes from four randomised controlled studies, 13 cluster randomized studies, and 48 quasi-experimental studies with comparison group involving more than 22,000 boys and young men in 11 countries. There was a lack of reporting about:

- power calculation in most studies;
- methods of sequence generation and allocation concealment in over 40 of the studies; and
- long-term (more than one year) impact.

Additionally, most studies utilize self-report data only, and lack triangulation (for reasons noted elsewhere in this review). Therefore, internal validity of the totality of studies is unclear.

Potential Biases in the Review Process

In the literature search, the broad criteria posed some challenges. For example, while the primary focus of the review was on rape prevention, many programs that address rape and sexual violence are labeled as dating violence or "healthy relationships" curricula. Additionally, we wanted to include those studies that address underlying gender norms, which spilled over into Sexual and Reproductive Health and HIV prevention programming, which was not the focus of the review.

Due to the number of studies included and limited time and resources, it was not possible to follow up with all of the study authors for missing or unclear information. Priority was given to ensure a minimum of information for all included studies. Therefore, follow-up was prioritized with authors in cases in which only abstracts or limited information was available.

While efforts were made to identify unpublished studies relevant to this review, limited time and resources may have resulted in some studies being missed. Therefore, there is a risk of publication bias, which has a tendency to overestimate the effects of interventions. However, the grey literature search was extensive. Also, time restrictions meant that non-English-language databases, such as LILACS, could not be searched. This could suggest a risk of language bias. Finally, the large number and high degree of heterogeneity of the studies made narrative synthesis a major challenge and seriously compromised comparability.

Agreements and Disagreements with Other Studies or Reviews

This was the first systematic review to bring together studies aimed at rape prevention and/or underlying gender norms for both younger and older adolescents from around the world. Other reviews have had limited geographical or population focus, such as Brecklin and Forde 2001, Anderson and Whiston 2005, Vladutiu et al. 2011, which focused on rape prevention among college students in the USA, or Ting (2008) which focused on dating violence prevention among middle and high schools in the USA. Other reviews have limited the focus to a specific aspect of sexual violence, such as a 2006 review by Cornelius which focused on primary and secondary prevention programs for dating violence, Flood's review

(2007) of violence prevention programs with men, the review by Lonsway et al. (2009) that focused on rape prevention and risk reduction, and the review in 2007 by Barker et al. that focused on programs engaging men in reducing gender inequalities. There are also reviews that have been broader in terms of age groups, but which did not use rigorous criteria to assess significance/validity of the results (e.g. Clinton-Sherrod 2008).

Despite variation in the areas of focus and target populations among other reviews, there has been, to a large degree, a convergence of findings. For example, other reviews have affirmed fairly similarly that high quality group education, when designed with formative research, is participatory and focused on skills-building, and is consistently applied; leads to changes in attitudes and less often, but in some cases, to changes in behaviors. The content of the interventions in these other reviews is often similar as well, and focused on questioning gender norms, including those related to intimate partner violence, although not always to sexual violence. One conclusion that seems to emerge is that programs that are effective at reaching boys and men and changing attitudes (and sometimes behaviors) around HIV, sexual and reproductive health and intimate partner violence could be expanded to include sexual violence. Additional evaluation studies will need to test whether this type of expansion is effective and in what contexts.

5. Cross-Cultural and Age Transportability of Prevention Interventions

Several studies in the review provide good evidence of the feasibility, acceptability and effectiveness of adapting interventions from one culture or country to another, and from one age group to another. For example, the "Coaching Boys into Men" intervention was originally developed in the USA, and was adapted for India. Both evaluation studies were included in this review. While both studies had methodological limitations, the study conducted in India [ICRW 2011] showed significant impacts on bystander intentions, bystander behaviors, and attitudes toward gender roles. The study conducted in the USA [Miller 2011] showed significant impacts on bystander intentions and bystander behaviors.

Program H was originally developed in Latin America and implemented in Brazil, and was adapted and implemented in Ethiopia and India. Evaluation studies for all three implementations were included in this review. The three evaluation studies included in this review indicated that the programs implemented in Brazil, Ethiopia, and India all had significant impacts on attitudes toward gender roles, and the program implemented in Ethiopia and India had a significant impact on physical violence against an intimate partner [Pulerwitz et al. 2006, Pulerwitz et al. 2010, Verma et al. 2008].

Stepping Stones was originally developed in Uganda and after adaptation, implemented in diverse settings in sub-Saharan Africa. The evaluation study from South Africa is included in this review. This study found significant changes in physical violence against an intimate partner and sexual IPV [Jewkes et al. 2008].

Additionally, evaluations of two interventions that have been adapted for younger/older age groups were included in this review. First, Fay and Medway (2006) studied a college rape education program that was adapted for use with high school students. The activities and content were essentially the same but the language and role-playing situations were modified to be more age appropriate and relevant. This study revealed significant changes in rape myth acceptance among participants.

Second, the Mentors for Violence Prevention program was originally developed for use with male high school students – specifically athletes. It has also been adapted for use with male and female college students, and for use with male and female high school students (see Northeastern 2007 for evaluation with a high school population; Cissner 2009 for evaluation with a college population). The adaptation for the college population entailed condensing the program timeline/length of the workshops (from 12 to 14 hours over several months to seven to twelve hours over a weekend) to better accommodate students' schedules and other commitments. Also, although the topics in the curriculum remained the same, the language, scenarios, media clips, and other program exercises were adjusted to be more appropriate for the audience. Both the Northeastern (2007) evaluation of the program's impact on high school students and the Cissner (2009) study of the impact on college students measured significant improvements in attitudes toward gender based violence and bystander efficacy.

6. Authors' Conclusions and Recommendations

Implications for Practice

The findings from this review have a number of implications for the practice, including findings related to the relative effectiveness of the following: Single-sex or mixed-sex interventions; active learning or more didactic strategies; a focus on perpetrator behaviors versus consequences of abuse versus gender socialization, empathy, and bystander behaviors; implementation by facilitators versus peers; and system-wide versus targeted interventions. Findings from this review also have implications related to the dosage/length of interventions and the cultural reach of interventions. Each of these is discussed below.

Mixed-Sex versus Single-Sex Settings

First, the relative effectiveness of mixed-sex versus single-sex groups is one of the most discussed aspects of working with men and boys. This review suggests that there are both positive and negative aspects of implementing intervention in mixed-sex settings.

Several arguments in favor of mixed-sex settings were revealed in this review. First, it is important to note that, among studies included in the review, mixed-sex interventions were among the most effective. (However, it is not possible to determine whether males would have had more significant change if they had been a single sex program). Additionally, implementing in mixed-sex setting provides a space for boys/young men and girls/young women to model respect for one another. Also, it is not always realistic or practical to separate boys and girls (e.g. in school settings), so it is helpful to know that programs can effect change in mixed-sex contexts.

Ultimately, the content of the intervention can make a difference in terms of which model may be more appropriate. For example, for programs focused on high-risk populations, single-sex settings make more sense. However, the objective of most dating violence programs is to effect changes in more incipient behavior or attitudes. Thus mixed-sex interventions can be appropriate, especially if they address both female to male violence as well as male to female violence. As one study notes, "in mixed gender groups it is important to avoid discussions that polarize along gender lines, and to avoid focusing on women's concerns in a way that allows men to blame women for the violence" (Berkowitz et al. 2005). Another notes that "in the right environment men can come to understand women's experiences, and women can show public support for men who are willing to disrupt patriarchy and the behaviors that lead to violence against women" (Rich 2010).

Importantly, another study found that participants were more satisfied in mixed-gender groups, perhaps related to age (and cultural context) (Elias-Lambert 2010). The fact that participants may be more drawn to mixed-sex interventions can be an important element for programs based on voluntary participation and retention.

A number of arguments in favor of single-sex implementation were revealed in this review as well. First, because program goals for men's and women's programming do not often overlap (Gidycz, Rich, & Marioni 2002) and often men and women are starting at different levels of awareness (women often higher), different interventions can be desirable, at least initially. Also, since a big part of male role learning takes places in male groups, single-sex interventions can be the most appropriate space for challenging rigid norms and practicing new roles. At the same time, however, interventions need to ensure that women's voices are not absent, and they need to be careful to not reinforce certain traditional models of masculinity – e.g. the "protector" role. An exclusive emphasis on being a helper may encourage men to envision themselves as rescuers of troubled women, reinforcing male dominance. Single-sex groups may allow for more of a focus on teaching men to be empathetic and responsive, while also confronting the reality that it is primarily men who perpetrated sexual violence.

Facilitation

In about half of the studies reviewed, the study explicitly stated that the people implementing the intervention were trained professionals. Most utilized teachers, but in some cases the implementers were attorneys, psychologists, or staff from a rape crisis center, for example. In about quarter of the studies, implementation was conducted by "facilitators" who had received at least some training in the intervention. In about 15% of the studies reviewed, the intervention was delivered by peers. Significant findings across the studies did not seem to vary with any consistency depending on whether the intervention was implemented by people who were professionals with experience in the content that went beyond that provided by the intervention.

System-Wide Versus Targeted

Very few of the studies reviewed were system-wide. Rather, most were focused on specific, limited target populations. Four studies could be characterized as system-wide, and each of these was implemented outside of the USA. These include the implementation of the UDAAN curriculum to over 4000 people in India [CEDPA 2011], the use of a multimedia campaign (including a weekly soap opera and radio show) that was delivered to 4800 people in Nicaragua [Solórzano 2008], a multimedia campaign and youth clubs (Soul City 2006) delivered to almost 1900 people in South Africa [Soul City 2006], and an educational campaign delivered to over 1100 people in India [Verma et al 2008]. Three of these [CEDPA 2011, Solórzano 2008, Verma et al 2008] showed significant changes in the outcomes of interest, including attitudes toward violence, attitudes toward gender and relationships with women, and use of violence against women.

Dosage or Intervention Length

Since time and resources are almost always limited for interventions, it is often necessary to negotiate for time to implement an intervention (especially in school settings in which the curriculum is already crowded), a critical question that must be addressed is that of dosage. Dosage refers to the amount of the intervention that is received by the participant, often measured either in hours spent receiving the intervention and/or the length of time (i.e., weeks or months) that the participant is exposed to the intervention, as in the case of an intervention that has a public messaging campaign as a component. Practitioners need to know how much of an intervention is necessary in order to achieve the desired outcomes, while not wasting resources by providing more services than are necessary. The findings from this review do not provide a definitive answer to this question, in part because most interventions were not tested at multiple dosages (see the next section, "Implications for Research", for more discussion about testing different dosages). One study [Banyard et al 2007] that was reviewed tested the effects on non-sexual violence of two different levels of an intervention – a one-session intervention and a three-session intervention. While both doses produced significant changes, the group that received the lengthier program (three sessions) showed a more significant increase in positive bystander attitudes and lower rape myth acceptance than participants in the one-session group. Clearly, decisions about dosage should not be made based on the results of this one study. However, these findings suggest that additional research on dosage may produce useful findings for the field.

Cultural Reach

Another finding of this review is that there is a critical need to expand the reach of these interventions to other populations. As Lonsway et al (2009) note, "One of the most pressing needs in the field is thus to expand our efforts beyond schools and campuses into our wider communities and across age, gender, class, ability/disability, race/ethnicity, sexual orientation, etc.". As highlighted throughout this review, the majority of the research conducted in this area was undertaken in the United States and Canada, and it often focused on White males who were not at high risk of perpetration. More research needs to be conducted on the

effectiveness of interventions with broader groups, especially those who are at higher risk of perpetration, and among target populations outside of the Global North. In part, the numerous studies in the USA are a result of mandates from the Federal government that rape prevention efforts are implemented on college campuses that receive federal funds. This kind of advocacy for funding elsewhere could stimulate the implementation of more programming, and corresponding research on effectiveness.

Implications for Research

Findings from this review also have implications for research. These include findings that suggest there is a need for more rigorous evaluation designs, more standardized measures, additional measures of behavioral outcomes, additional differential effectiveness analyses, and longer follow-up periods. Additionally, findings suggest the need for studies to more effectively pretest participants and a need for evaluation tools with higher reliability (particularly related to self-reporting). Last, more research is needed on links between bullying and sexual aggression, on which components of programming are responsible for effects, and on appropriate dosage.

More Rigorous Evaluation Designs

A critical finding of this review is that there is a need for more rigorous evaluation designs, particularly in terms of randomization. However, random assignment is frequently challenging in the real world, for several reasons. First, programs tend to be administered using intact groups (e.g., classes, sports teams, fraternities, sororities, dorm floors) rather than individuals who can be randomly assigned to one condition or the other. It is often difficult or impossible to generate these groups randomly because they have already been created or because of scheduling difficulties. Second, organizations such as schools and community centers are often reluctant to randomly select some participants to receive a potentially helpful intervention, while denying this opportunity to others (Jaycox et al 2006; Flay and Collins 2005).

One alternative to randomization at the individual level is the cluster-randomized trial, in which schools, organizations, or communities are matched and randomly assigned to a treatment or control in pairs. While this is a possible solution when individual level randomization is not possible, it is not ideal because it requires much greater sample sizes in order to achieve statistical power needed to detect significant effects, and because of potential bias introduced by having more similar participants within a cluster, such as a school or community (Flay and Collins 2005; Murray 1998). Use of the cluster-randomized design requires more advanced and rigorous statistical analyses, which require resources that are sometimes beyond the capacity of evaluation projects. Future studies may need to utilize individual level random sampling when possible, increase the number of clusters, and utilize more sophisticated statistical methods to account for intra-class correlation issues and other problems associated with a small number of clusters.

Measurement Issues

Another finding of this review is that there are several areas of potential improvement or expansion in the area of measurement. First, there is a serious gap in the field's ability to measure behavioral outcomes. Ultimately, the only way to definitively demonstrate the efficacy of a rape prevention program is to show that treated subjects commit fewer rapes or other acts of violence or sexual violence than a matched group of control subjects (Schewe 1996; Clinton-Sherrod 2008; Yeater and O'Donohue 1999). While many evaluation tools have been developed to measure attitudes, beliefs, and knowledge in this area, there are few mechanisms for measuring behavioral outcomes. Second, there is also a need for more research on the association between bystander behavior and actual incidence of sexual assault (Banyard 2007).

Third, nearly all studies rely on measures that are self-reports. While some of these measures have been tested in terms of their reliability and validity in terms of generating more accurate data, some degree of unreliability due to the effect of social desirability exists in all of the self-reported measures. This is true of most self-report data, and data collected about an area as sensitive as this is more susceptible to social desirability bias. Multi-modal assessments that allow for triangulation may provide more reliable data in future studies.

Last, as noted previously, there is little standardization in measures. Overall, 96 different scales or instruments were used in the 65 studies included in this review. Only 17 measures were used in more than one study, with only six used in five or more studies. "The benefits of identifying a valid and reliable set of outcomes that can be used to evaluate the effectiveness of a wide range of sexual assault prevention programs would be of enormous benefit to the field, where widely varying outcome measures makes comparisons between evaluated programs problematic" (Schewe ND). The measures that have been utilized in multiple studies and have been adequately tested for reliability and validity may provide a good starting point. It would be helpful if researchers working in the field could come together to agree on a standard set of measures that could be utilized as often as possible and appropriate.

Analyses of Subgroups

Another implication for research that was revealed through this review is the need for more differential effectiveness analysis. Even when working with general populations, there is a need to increase the practice of analyzing effects on sub-groups with higher baseline risk in terms of attitudes and other relevant indicators. Especially when baseline risk varies more, or when working with a more heterogeneous group in general, differential effectiveness analysis is critical to understanding which interventions are most effective with which populations.

Longer Follow-Up

A great majority of the studies reviewed did not follow participants for more than a few weeks, with 35% (n=23) having no follow-up beyond an immediate post-test, and another 17% (n=11) following and testing participants only 1-3 weeks after intervention. While it is understandable that most studies do not have the resources to follow-up over longer periods of time, and often it is extremely difficult to find and engage participants over time, this is a serious limitation. There needs to be a sufficient length of time between assessments for program participants to have had the opportunity to engage in the behaviors of interest, and for their beliefs, attitudes, and knowledge to have grown, shifted, and changed. As an example, Foshee et al. (2004) found some significant changes in behaviors that were detected *only* at the four-year follow-up.

Pretest Issues

Additionally, there are concerns related to the potential impact of pretests. For example, Foubert and Marriott (1997) note a concern that administering the Burt Rape Myth Acceptance Scale raises awareness among participants. Lonsway and Kothari (2000) also talk about issue of pretests, stating that: "this problem is exacerbated when a pre-test is used, because it trains participants in exactly how to provide the right answers. In fact, several studies have documented positive effects that are apparently due to pre-test assessment (i.e., sensitization effects), when scores of pre-tested participants are compared with those who were not exposed to a pre-test (for a review, see Breitenbecher, 2000). Therefore, it is best not to use a pretest-posttest design with only a single group of participants. Without a control group of individuals who did not participate in the program, the findings from this type of research cannot be interpreted (Cook & Campbell, 1979)."

Bullying and Sexual Aggression

This review also points to a need for more research on a potential link between bullying and sexual aggression. For example, Cascardi and Avery-Leaf (2000) noted that "Expect Respect", an anti-bullying program for fifth graders in Austin, Texas, adopts the view that bullying and harassing peer behaviors (e.g., teasing, name calling) are precursors to dating violence (Cascardi and Avery-Leaf 2000; Kieschnick & Kennett, 1996). However, Foshee et al. (2009) note that, "Although bullying has been proposed as a precursor to dating violence, only one study has directly assessed this association".[5] Other longitudinal studies have found that aggression towards peers by younger boys predicted adolescent dating violence (Brendgen et al., 2001; Capaldi & Clark, 1998; Herrenkohl et al., 2004; Lavoie et al., 2002; Simons et al., 1998) and adult partner abuse (Andrews et al., 2000; Capaldi et al., 2001; Herrenkohl et al., 2004 cited in Foshee et al. 2009) Despite this, programs designed to prevent the precursors to dating violence have not been tested in terms of their ability to actually help prevent dating violence.

Last, more research is needed to determine the components of interventions that are responsible for the positive outcomes (Morrison et al. 2004), and what dosage of an intervention is actually needed. Because resources to implement programs are so limited, and the time that participants have to participate is so limited, information that may help streamline implementation is extremely useful. One of the most important questions for evaluation research in this area may actually be: "Which components of the programs are effective for which groups of participants?"

Next Steps

This field of research is clearly critical, and a lot of very good work is being conducted to better understand the most effective interventions to reduce perpetration of sexual violence against women. However, there are still many unanswered questions, and a tremendous need for additional research that has sufficient sample sizes, solid research design, reliable and valid measures and sufficient follow-up to allow us to determine the most effective interventions across a variety of settings and target populations. What we do know is that some interventions seem to show promise. The work of program developers, researchers, and funders moving forward will be utilizing the promising work that has been done and building upon it. The findings from this review provide some guidance for those next steps and a springboard for further discussion.

5 Foshee et al (2009) refer to Connolly et al.'s (2000) study as the only study that has directly assessed the association between bullying and later dating violence.

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Appendix

Table 10: Characteristics of participants in included studies

Younger teens (12 – 15)				
21 Programs	Participants			
Study	**Country**	**Age**	**Socioeconomic status**	**Sample size***
Anastasopoulos 2004	Canada	13 – 15 yrs (avg. 14 yrs)	In-school, rural, low-income, predominantly White	n=118 (46% male)
Campbell et al. 2007	USA	11 – 13 yrs	In-school, urban, predominantly Africa – American	n = 223 (30% male)
CEDPA 2011	India	11 – 20 yrs (avg. 14 – 16 yrs)	In-school, predominantly backward caste or scheduled tribe, majority Hindu	n = 4,023 (50% male)
Chamroonsawasdi et al. 2010	Thailand	8 – 16 yrs	In-school, no information on type of setting	n = 530 (53% male)
Foshee et al. 1998; 2000; 2004	USA	11 – 17 yrs (avg. 13.8 yrs)	In-school, rural, predominantly White	n = 460 (41.5% male)
Fergus 2006	Australia	Years 7 – 9 (ages 12 – 15)	High school students, in information on setting	n = 107 (49% male)
Gruchow and Brown 2011	USA	12 – 14 yrs	In-school, no information on type of setting	n = 230 (100% male)
ICRW 2011	India	13 – 16 yrs (avg. 13 yrs)	School: predominantly middle-upper middle income; Community: low-income	n = 291 @ school; n = 366 @ community (100% male)
Jaycox et al. 2006	USA	12 – 22 yrs	In-school, urban, predominantly Latino	n = 2540 (48% male)
Josephson and Proulx 2008	Canada	Avg. 12 – 16 yrs	In-school, no information on type of setting	n = 1,143 (% male not provided)
Kantor ND	USA	12 – 15 yrs	In-school, predominantly White, no information on type of setting	n = 157 (42% male)
Krajewski et al. 1996	USA	Avg. 11 – 13 yrs	In-school, urban, predominantly White	n= 239 (% male not provided)
Macgowan 1997	USA	11 – 16 yrs	In-school, urban, predominantly African-American	n = 440 (43.9% male)
Proto-Campise et al. 1998	USA	13 and up (75% between 13 – 15 yrs)	In-school, urban	n = 437 (53% male)
Schewe and Anger 2000	USA	Avg. 13 – 15 yrs	In-school, urban	n = 118 (% male not provided)

Younger teens (12 – 15)				
21 Programs	Participants			
Study	**Country**	**Age**	**Socioeconomic status**	**Sample size***
Soul City 2006	South Africa	8 – 15 yrs	In-school, 2/3 urban, 1/3 rural	n = 1,877 (49% male)
Taylor et al. 2010	USA	11 – 13 yrs	In-school, urban	n = 1,592 (48% male)
Weisz and Black 2001	USA	Avg. 12.84 yrs	In-school, urban, African, American	n = 29 (55% male)
Wolfe et al. 2003	Canada	14 – 16 yrs	History of maltreatment, low-income, predominantly White, urban/ rural and semi-rural	n = 158 (% male not provided)
Wolfe et al. 2009	Canada	14 – 15 yrs	In-school, urban and rural	n = 1,722 (47.2% male)
Yom and Eun 2005	Korea	Middle school (age not specified)	In-school, rural	n = 79 (100% male)

Older teens (15 – 19 yrs)				
46 Programs	Participants			
Study	**Country**	**Age**	**Socioeconomic status**	**Sample Size**
Adler et al. 2007	USA	14 – 19 yrs	In-school, economically, geographically, and racially diverse	n = 340 (26% male)
Avery-Leaf et al. 1997	USA	15 – 17 yrs (avg. 16.5 yrs)	In-school, urban, predominantly White	n = 193 (55% male)
Banyard et al. 2007	USA	18 – 23 yrs	University students, predominantly White	n = 363 (45% male)
Berg et al. 1999	USA	Avg. 19.2 yrs	University students, predominantly White	n = 54 (100% male)
Carr et al. ND	USA	19 – 20 yrs	University students, predominantly White	n = 74 (100% male)
Cissner 2009	USA	Avg. 19.5 yrs	University students, fraternity members, predominantly White	n = 819 (47% male)
Davis and Liddell 2002	USA	18 – 23 yrs (avg. 19.6 yrs)	University students, fraternity members, predominantly White	n = 87 (100% male)
Earle 1996	USA	Avg. 18 – 19 yrs	University students	n = 347 (100% male)
Fay and Medway 2006	USA	15 – 16 yrs	High school students, rural town with 21% families below poverty	n = 154 (44%) n = 75 for delayed post test
Foubert and Marriott 1997	USA	Avg. 18.8 yrs	University students, fraternity members, predominantly White	n = 77 (100% male)
Foubert and McEwen 1998	USA	Avg. 19.9 yrs	University students, fraternity members, predominantly White	n = 155 (100% male)
Foubert and Newberry 2006	USA	18- 21 (approx.)	University students, fraternity members, predominantly White	n = 261 (100% male)
Gardner and Boellaard 2007	USA	14 – 19 yrs	In-school	n = 150 (19.4% male)
Gidycz et al. 2001	USA	Avg.18 – 19 yrs	University students, fraternity members, predominantly White	n = 1,108 (27% male)
Gidycz et al. 2011	USA	Avg. 18 – 19 yrs	University students, predominantly White	n = 494 (100% male)
Grant 2007	Australia	14 – 25 yrs (avg. 16.91 yrs)	In-school, urban	n = 48 (54.2% male)
Hillenbrand-Gunn et al. 2010	USA	Avg. 16.58 yrs	High school students, predominantly White	n = 212 (60% male)

Older teens (15 – 19 yrs)				
46 Programs	Participants			
Study	**Country**	**Age**	**Socioeconomic status**	**Sample Size**
Imbesi 2008	Australia	Avg. 16.4 yrs	In-school, no information on setting	n = 117 (52% male)
Jewkes et al. 2008	South Africa	15 – 26 yrs	Mostly in-school, rural	n = 2,776 (49% male)
Kerpelman et al. 2009	USA	Avg. 16.1 yrs	In-school, no information on setting	n = 249 (18% male)
Kilmarten et al 2008	USA	Avg. 19.2 yrs	University students, predominantly White	n = 128 (100% male)
Kim and White 2008	USA	14 – 18 yrs	In-school, no information on setting	n = 642 (46% male)
Langhinrichsen-Rohling et al. 2011	USA	Avg. 18.88 yrs	University students, predominantly White	n = 179 (100% male)
Lanier et al 1998	USA	17 – 19 yrs	University students, predominantly White	n = 436 (48.6% male)
Lobo 2004	USA	Avg. 18- 19 yrs	University students, predominantly White	n = 237 (100% male)
Lonsway and Kothari 2000	USA	17 – 19 yrs	University students, predominantly White	n = 191 (% male not provided)
Miller 2011	USA	14 – 18 yrs	In-school, athletes, no information on setting	n = 1,798 (100% male)
Moynihan et al. 2010	USA	Avg. 19.4 yrs	University students, athletes	n = 98 (% male not provided)
Northeastern University 2007	USA	Avg. 16 yrs	High school students, racially/ ethnically diverse, no information on setting	n = 529 (% male not specified over 3 year period)
Pacifici et al. 2001	USA	Avg 15.8 yrs	In-school, urban, predominantly White	n = 548 (48% male)
Pinzone-Glover et al. 1998	USA	Avg. 18 - 20 yrs	University students, predominantly White	n = 152 (39% male)
Potter et al. 2009	USA	Avg. 18 – 22 yrs	University students, predominantly White	n = 372 (38% male)
Pulerwitz et al. 2006	Brazil	15 – 24 yrs	Low income, urban	n = 609 (100% male)
Pulerwitz et al. 2010	Ethiopia	15 – 24 yrs	Low income, subcities	n = 645 (100% male)
Roberts 2009	USA	14 – 18 yrs	In-school, predominantly White, suburban settings	n = 332 (49% male)
Rodriguez et al. 2006	USA	Avg. 19.06 yrs	University students, predominantly White	n = 561 (33% male)
Salazar and Cook 2006	USA	Avg. 14 – 15 yrs	Adjudicated males, predominantly African American	n = 37 (100% male)
Schewe ND	USA	Avg. 14 – 18 yrs	High school students, rural, urban and suburban	n = 3,433 (42% male)

Older teens (15 – 19 yrs)				
46 Programs	Participants			
Study	**Country**	**Age**	**Socioeconomic status**	**Sample Size**
Schewe and O Donohue 1996	USA	Avg 19.7 yrs	University students, high-risk	n = 74 (100% male)
Shultz et al. 2000	USA	18 – 22 yrs (avg. 19.55 yrs)	University students, predominantly White	n = 60 (42% male)
Solorzano et al. 2008	Nicaragua	13 – 24 yrs	Urban	n = 4,800 (46% male)
Soul City 2006	South Africa	8 – 16 yrs	Urban and rural	n = 1,877 (49% male)
Stephens and George 2009	USA	Avg. 19.3 yrs	University students, predominantly White	n = 65 (100% male)
Verma et al. 2008	India	16 – 29 yrs urban; 15 – 24 yrs rural	Urban and rural	n = 1,137 (100% male)
Weisz and Black 2001	USA	Avg. 13 yrs	Urban, in-school; all African-American	n = 66 (42% male)
Winkel and Dekleuver 1997	Netherlands	Avg. 15 – 16 yrs	In-school	n = 198 (31% male)

Table 11: Characteristics of Interventions by Intervention Delivery Mode

Study	Country	Goals of intervention	Approach and Content	Mixed-sex or single-sex	Duration	Qualifications of staff	Control conditions
Adler et al. 2007	USA	To build relationship/ marriage knowledge and skills	Group education (adapted version of the curriculum Love U2: Increasing your relationship	Mixed-sex	12 session, 60 – 90 mins each, over 2 month	Teachers	No intervention
Anastasopoulos 2004	Canada	To prevent violence against women and encourage the involvement of teen boys in ending violence against women	Group education (White Ribbon Campaign Education and Action Kit) curriculum includes both didactic and interactive activities, discussions and student organized events; content of the material focuses on raising awareness about dating violence, sexual harassment, and other forms of violence; special materials used include informative literature and media: "It's Time for Guys to Put an End to This" booklet and WRC educational CD; workshops address gender-role stereotypes	Mixed-sex	2 classroom sessions; other activities on an on-going basis (past participating schools have varied from 1 yr to 4 yrs or more)	Teachers	No intervention
Avery-Leaf et al. 1997	USA	To prevent dating violence with both men and woman as potential perpetrators	Group education (Building Relationships in Greater Harmony B.R.I.G.H.T), didactic; multi-level approach: skills-based – constructive communication i.e. conflict resolution & negotiation skills, awareness-raising – promotes gender equality, and social norms theory – challenges individual and societal attitudes toward violence as a means of conflict resolution; workshops address the links between gender-roles and violence	Mixed-sex	5 classroom sessions, 1 hour each	Health teachers	No intervention

Study	Country	Goals of intervention	Approach and Content	Mixed-sex or single-sex	Duration	Qualifications of staff	Control conditions
Banyard et al. 2007	USA	To teach women and men how to intervene safely and effectively in cases of sexual violence before, during, and after incidents with strangers, acquaintances, or friends.	Group education (bystander approach), both didactic and interactive in the form of discussions and role-playing activities, bystander approach, focus of content includes raising awareness through information on sexual violence and building intervention skills as bystanders through learning about available rape resources and depicting the preventative roles of bystanders. Special materials used in the booster sessions included videotaped skits of sexual assault scenarios.	Single-sex	Two dosages: 1. One 90- minute session and 2. Three 90-minute sessions during one week Both included booster sessions 2 months later	Trained male-female pairs of peer leaders	No intervention
Berg et al. 1999	USA	To prevent rape via an empathy-induction technique	Audio-tapes – Treatment 1: didactic component + audiotape testimony of young women victims; Treatment 2: didactic component + testimony of young man victims; Treatment 3: didactic component only	Single-sex	1 session, 75 minutes	Male facilitators	Alternative interventions
Campbell 2007	USA	To prevent dating violence	Group education; interactive arts-based student activities (theater production and visual arts); student support/ discussion groups and teacher/staff trainings	Mixed-sex	Visual Arts and Web Design groups - 1x week for 6 weeks, Discussion groups and theater project conducted over an eight- to ten-week period. 7th grade students: classroom-based curriculum over four class periods.	Information not available	Delayed intervention

Study	Country	Goals of intervention	Approach and Content	Mixed-sex or single-sex	Duration	Qualifications of staff	Control conditions
Carr et al. ND	USA	To reduce rape-supportive attitudes and sexism	Development and implementation of a social norms intervention based on the data collected at baseline about attitudes toward rape, sexism and masculine norms.	Single-sex	Four months	Research team developed campaign	No intervention
CEDPA 2001	India	To promote adolescent life skills and sexual and reproductive health (SRH) knowledge	Group education (UDAAN curriculum), didactic, skill-building: Teaches life skills through knowledge of mental, emotional and physical health, workshops addressed gender roles and violence, sexual health, substance abuse , family relationships and self esteem.	Mixed-sex	Class 9 (20 hours) and Class 11 (18 hours) spread over school academic year	Teachers	No intervention
Chamroonsawasdi et al. 2010	Thailand	To prevention physical and sexual violence	Group education, interactive: games, scenarios, group work, etc, using social-norms theory, content focuses on empathy-building and building skills in the following areas: development of family and peer relationships, interaction skills between sexes, management of feelings and emotions, self-management and coping with stress, problem solving, communication, workshops address gender-roles and socialization and their link to physical and sexual violence.	Mixed-sex	11 sessions, 2.5 hrs each	Details of learning modules and materials were provided by the lead researcher of each topic, teachers acted a facilitators	No intervention
Cissner 2009	USA	Prevent gender violence and bullying by encouraging students to take a leadership role in violence prevention	Group education, focused on bystander approach, curriculum covered five topic areas: gender roles, types of abuse, alcohol and consent, harassment, and homophobia. Draws on contemporary media clips, hypothetical scenarios, single- and mixed-gender group discussion, and other interactive exercises (Mentors in Violence, MVP).	Both	Peer educators: 12 hours over 2 days; Workshop participants: 7 hours over 2 days	Adult trainers (for Peer educators) and Peer educators (for Workshop participants)	No intervention
Davis and Liddell 2002	USA	To prevent rape	Group education (based on video clips of contemporary movie and TV) , social norms theory: changing attitudes that may be predictors, workshop addresses link between attitudes and proclivity of men to sexually assault women.	Single-sex	1 session, 90 minutes long	Trained presenters, not otherwise defined	Alternative (session on career development)

Study	Country	Goals of intervention	Approach and Content	Mixed-sex or single-sex	Duration	Qualifications of staff	Control conditions
Earle 1996	USA	To prevent acquaintance rape	Treatment 1: interactive, peer-led single-sex small group discussions; Treatment 2: interactive, professional-led mixed-sex group discussions; Treatment 3: lecture format, large coed group. Workshops use the social norm theory, specifically norms on attitudes on rape and towards women.	T 1: Single sex T 2 & T 3: Mixed-sex	1 session	Peers & professionals	Alternative interventions
Fay and Medway 2006	USA	To reduce students' acceptance of rape myths and dating violence	Group education (adapted from a program for college students), interactive: role playing , questionnaires and discussion, special materials include videotapes created for acquaintance rape education; social norms theory approach on cultural norms that contribute to acceptance of rape i.e. media, gender stereotypes, etc; content focuses on raising awareness about acquaintance rape and intervention strategies and skill building on identifying inconsistent verbal and non-verbal communication and improving overall communication of desires, workshop also addresses the role of alcohol and drugs and expectations and perceptions in acquaintance rape.	Mixed-sex	Six activities and a homework assignment over two days, carried out in a total of two hours	Female and male facilitator pairs	Delayed intervention
Fergus 2006	Australia	To increase awareness of gender stereotyping build skills for respectful and non-violent relationships	Group education (Respect, Protect, Connect), both didactic (guest speakers) and interactive, intervention is based on pro-feminine philosophy addressing gender and power, content focuses on skill building and values clarification: men's program builds skills for conflict resolution and healthy sexual and personal relationships, women's program takes rights-based approach to develop assertiveness and support-seeking skills; workshops address diversity through examination of links between racism, homophobia and violence as well as specific issues facing minority groups.	Single-sex	Two treatment arms: 1) 90 minute workshop per week for eight weeks and 2) 90 minute workshop per week for two weeks	Trained educators (early 20's, relatively close in age to students)	No intervention

Study	Country	Goals of intervention	Approach and Content	Mixed-sex or single-sex	Duration	Qualifications of staff	Control conditions
Foshee et al. 1998; 2000: 2004	USA	To prevent and reduce dating violence among adolescents	Group education, interactive school-based activities - theater production, educational, and a poster contest) and community activities ("Safe Dates").	Mixed-sex	10 sessions, 45 minutes each + theatre production + poster contest	Teachers	Alternative intervention (only community services for adolescents in abusive relationships)
Foubert and Marriott 1997	USA	To prevent sexual assault by decreasing men's acceptance of rape myths	Group education, Didactic and interactive using video and discussion, uses bystander approach to build empathy for rape survivors and victims, workshops address differences in victims' experiences between men and women, encourages building communication skills during sexual encounters; also encourages criticism of negative social norms in regards to rape, sexism and attitudes towards women.	Single-sex	One session, one hour	Peer educators	No intervention
Foubert and McEwen 1998	USA	To decrease acceptance of rape myths and behavioral intent to rape	Workshop, including primarily lecture, video and skills-building: how to help women recover from rape , bystander approach using non-confrontational tone, workshop addresses rape by building empathy through visuals, stats and comparisons to male rape and challenging notion that rape against women is often seen as a sexual crime but not as a violent crime.	Single-sex	One session, one hour	Peer educators	No intervention
Foubert and Newberry 2006	USA	To prevent rape and increase bystander support	Group education: "The Men's Program", interactive and didactic, empathy based approach, some interventions included bystander approach , others included defining consent and addressed the involvement of alcohol in both.	Single-sex	Two one session intervention types: bystander version and consent version	Male peer educators	No intervention

Study	Country	Goals of intervention	Approach and Content	Mixed-sex or single-sex	Duration	Qualifications of staff	Control conditions
Gardner and Boellaard	USA	To provide information and skills-building necessary for happy and successful marriages	Group education (Connections Curriculum).	Mixed-sex	15 sessions, one hour each	Information not available	No intervention
Gidycz et al. 2001	USA	To prevent acquaintance rape	group education, mainly didactic, content focuses on empathy building through raising awareness about stats and facts on rape and rapists, challenges social norms regarding rape myths, builds skills in both men and women for avoiding rape and increasing personal safety.	Mixed-sex	One session, one hour long	Information not available	Alternative intervention (brief handout on sexual assault)
Gidycz et al. 2011	USA	To prevent sexual assault	Group education.	Single-sex	One session, 1.5 hours long. Four months later, a one-hour booster session	Facilitators	No intervention
Grant 2007	Australia	To prevent intimate partner abuse	Group education, mostly didactic but also interactive (discussions and brainstorms) special materials included video (modified version of Through New Eyes program, originally designed for adults), content focused on raising awareness by identifying healthy relationships and attitudes via addressing attitudes that disrespected women and social, economic and psychological abuse.	Mixed-sex	Two sessions, 90-minutes each OR three sessions, 60 minutes	Psychologist/ Researcher	No intervention
Gruchow and Brown 2011	USA	To promote male responsibility and skills in the area of sexual behavior and relationships	Group education (The Wise Guys School-based Male Responsibility Curriculum), content addresses knowledge and attitudes towards sexual and reproductive health and knowledge, attitudes and behaviors regarding social and sexual relationships including self esteem, communication, values, goal setting, puberty, anatomy, reproduction, abstinence, contraception, sexually transmitted infections, healthy relationships and dating violence.	Single-sex	8-10 weekly sessions, averaging 45 minutes each	Trained health educators	Delayed intervention

Study	Country	Goals of intervention	Approach and Content	Mixed-sex or single-sex	Duration	Qualifications of staff	Control conditions
Hillenbrand-Gunn et al. 2010	USA	To prevent rape	Group education (based on six specific activities from the Working Together manual), interactive, uses men-as-allies approach to build empathy and encourage support for victims from men, content uses social norms theory to address rape myths and attitudes and perceived norms regarding sexual violence, workshop also addressed behaviors in rape-supportive situations.	Mixed-sex	Three sessions, 45 minutes each	Trained facilitators in health class	No intervention
ICRW 2011	India	To promote gender equity, respect for women and girls, and reduce gender-based violence	Group education, didactic and interactive, based on social norms theory and bystander approach through the use of male role models addressing negative attitudes and behaviors towards woman and gender roles, phase 1: coaches/mentors training workshops, card session implementation by coaches/mentors with athletes; phase 2: Public education campaign (Parivartan, an Indian and cricket-specific adaptation of US program Coaching Boys into Men), content focuses on raising awareness as well, workshop addresses socialization and links to negative and physically and sexually violent attitudes and behaviors towards women.	Single-sex	Information not available	Coaches/ Mentors	Delayed intervention
Imbesi 2008	Australia	To prevent sexual assault	Group education.	Single-sex (last session mixed-sex)	Four to six sessions	Facilitators	No intervention
Jaycox et al. 2006	USA	To prevent dating violence	Group education (Ending Violence: A Curriculum for Educating Teens on Domestic Violence and the Law)	Mixed-sex	Three classroom sessions, over three days	Attorneys	Delayed intervention

Study	Country	Goals of intervention	Approach and Content	Mixed-sex or single-sex	Duration	Qualifications of staff	Control conditions
Jewkes et al. 2008	South Africa	To reduce HIV-risk behaviours	Group education (Stepping Stones curriculum), interactive: role-play, drama and personal realities, content focuses on raising awareness about SRH and skill building: communication and critical reflection ; workshop also focuses on changing behavior and attitudes regarding sexual situations.	Single-sex	13 sessions, three hours each + three group meetings + final community meeting. Total of approx. 50 hours over six-eight weeks	Same-sex facilitators, close in age to participants	Alternative intervention (single session on HIV, safer sex, and condoms taken from same curriculum)
Josephson and Proulx 2008	Canada	To prevent dating violence	Group education, three-part curriculum, dealing with aggression, gender equality and media awareness and forming health relationships, designed to address factors that contribute to violent behaviour, such as gender inequality, power and control (Healthy Relationships Project).	Mixed-sex	Three modules of activities implemented over four to five class periods in one of the target grades (7 through 9)	Teachers	No intervention
Kantor ND	USA	To prevent sexual abuse and sexual harassment	Group education (SAFE-T).	Mixed-sex	Treatment A: 20 sessions, 1.5 hrs each Treatment B: Two weekly sessions, 35 minutes each, over one semester	Teachers	Information not available

Study	Country	Goals of intervention	Approach and Content	Mixed-sex or single-sex	Duration	Qualifications of staff	Control conditions
Kerpleman et al. 2009	USA	To reduce problem beliefs and behaviors and enhance skills and attitudes known to facilitate healthy relationship functioning	Group education (Relationship Smarts + curriculum), interactive, workshops address identity development, relationship aggression, control and abuse, skills building: identifying and practicing healthy relationship behavior, effective/ineffective communication, impulse versus wise decision making , and conflict management.	Mixed-sex	13 class sessions, avg. 50 – 90 minutes each, over six weeks	Teachers	No intervention
Kilmarten 2008	USA	To reduce male students' perceptions of their peers sexism, which is thought to increase students' willingness to challenge sexist attitudes	Presentation by trained male facilitator (member of the research team), using scenarios, basic information about social norms and distorted beliefs about norms, the link between these distortions and behaviors, and information about bystander behaviors.	Single-sex	Single 20 minute session	Trained male facilitator (member of research team)	No intervention
Kim and White 2008	USA	To reduce sexual violence by engaging young men as allies in violence prevention	Statewide social marketing campaign MyStrength + six-site school-based Men of Strength (MOST) Clubs to reinforce campaign messages and mobilize young men to take public stand against violence, interactive, examines social climate at schools and students attitudes, MOST workshops use social norms theory regarding gender roles, masculinity and dominance and its link to violence.	Single-sex	MOST club: weekly activities for nearly the entire academic year	Rape crisis center representatives	Alternative intervention (only statewide MyStrength Campaign)
Krajewski et al. 1996	USA	To improve knowledge and attitudes about women abuse	Group education (Skills for Violence-Free Relationships curriculum), content addresses gender roles socialization, social environment and links to violence , as well as power and control in intimate relationships.	Mixed-sex	10 class sessions, over two weeks	Health education teacher & Counselor from local battered women's shelter	No intervention

Study	Country	Goals of intervention	Approach and Content	Mixed-sex or single-sex	Duration	Qualifications of staff	Control conditions
Langhinrichsen-Rohling et al. 2011	USA	To prevent rape and encourage men to intervene as bystanders in potential rape situations	Group education, interactive, content uses belief system theory and bystander approach, content also focuses on building empathy for survivors, special materials include video (Men's program).	Single-sex	10 class sessions	Male facilitators	Unrelated intervention
Lanier et al. 1998	USA	To prevent date rape	Group education, interactive, student-performed play about date rape (Scruples script), content uses social learning theory, special materials include scruples videotape, content focuses on challenging rape-tolerant attitudes and reducing the likelihood that the students who saw it would become victims or perpetrators of date rape through social norms theory.	Mixed-sex	One session	Student presenters	Unrelated intervention
Lobo 2004	USA	To prevent sexual assault	Group education.	Single-sex	One session, three hours long	Trained male facilitator	No intervention
Lonsway and Kothari 2000	USA	To prevent acquaintance rape	Group education (FYCARE).	Mixed-sex (with Single-sex activities)	One session, two hours long	Peer educators	Delayed intervention
Macgowan 1997	USA	To prevent dating violence	Group education.	Mixed-sex	Five sessions, one hour each, over five days	Teachers	No intervention
Miller 2011	USA	To prevent intimate partner violence	Group education.	Single-sex	Weekly "mini discussions" over three – four month sports season	Coaches	No intervention
Moynihan et al. 2010	USA	To prevent sexual and intimate partner violence	Group education ("Bringing in the Bystander").	Single-sex	One session, 4.5 hours long	Educators, male-female pairs	No intervention

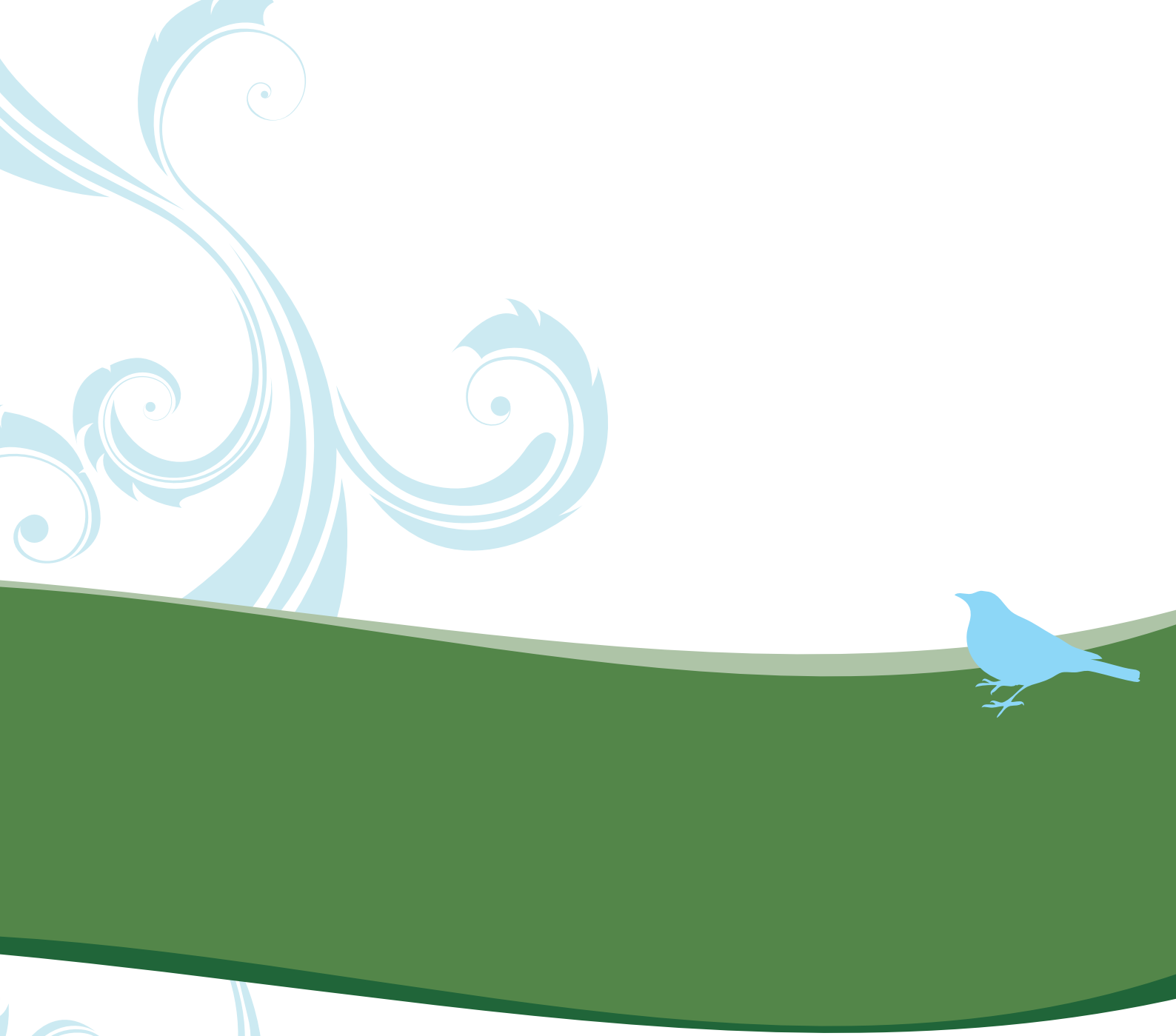
Study	Country	Goals of intervention	Approach and Content	Mixed-sex or single-sex	Duration	Qualifications of staff	Control conditions
Northeastern University 2007	USA	To prevent gender violence	Group education, addresses gender stereotypes, role playing related to bystander (Mentors in Violence-Prevention).	Information not available	Information not available	Information not available	No intervention
Pacifici et al. 2001	USA	To prevent sexual coercion in dating relationships	Group education (includes video).	Mixed-sex	Four sessions, 80 minutes each	Health education teachers	Delayed intervention
Pinzone-Glover et al. 1998	USA	To prevent acquaintance rape	Group education.	Mixed-sex	One session, one hour long	Male-female facilitator pairs	Alternative intervention (session on STI prevention)
Potter et al. 2009	USA	To empower bystanders to prevent violence against women	Poster campaign.	Mixed-sex	Exposure to poster over four weeks	NA	No intervention (no reported exposure to posters)
Proto-Campise et al. 1998	USA	To promote rape awareness	Group education.	Mixed-sex	One session, one hour long	Worker from rape services agency	Delayed intervention
Pulerwitz et al. 2006	Brazil	To promote more gender equitable norms and behaviors, including reduced HIV risk	Group education; community campaign (Program H).	Single-sex	18 sessions, two hours each, over six months	Trained facilitators	Delayed intervention
Pulerwitz et al. 2010	Ethiopia	To promote gender equity for HIV and violence prevention	Group education; community campaign (Yaari-Dosti, Indian adaptation of Program-H, see Pulerwitz et al. 2006).	Single-sex	Group education: 19 weekly sessions, two hours each; campaign	Trained facilitators	Delayed intervention
Roberts 2009	USA	To reduce teen dating violence	Group education (Expect Respect: Preventing Teen Dating Violence).	Mixed-sex	Four sessions, avg 40 minutes each	Trained facilitators	No intervention

Study	Country	Goals of intervention	Approach and Content	Mixed-sex or single-sex	Duration	Qualifications of staff	Control conditions
Rodrigues et al. 2006	USA	To promote prosocial response to sexual assault	Interactive performance-based forum (interact) vs. didactic lecture on sexual assault.	Mixed-sex	One session, 50 minutes long	Student performers	No intervention
Salazar and Cook 2006	USA	To prevent partner violence	Group education, including video; visits to courthouse and batterer intervention programs.	Single-sex	Five sessions, two hours each, over two weeks to five months	Facilitators	No intervention
Schewe and Anger 2000	USA	To prevent teen dating violence	Group education, including role playing, lecture and video + media campaign - S.T.A.R (Southside Teens About Respect).	Both	NUMBER sessions, 50 minutes each	Facilitators	Alternative intervention (only media campaign)
Schewe ND	USA	To prevent sexual assault	Group education.	Both	One- six sessions	Varied	Alternative interventions
Schewe and O Donohue 1996	USA	To reduce date rape	Group education, including video (Treatment A: Rape Supportive Cognitions (RSC), targeted false beliefs that condone coercive sexual behavior; Treatment B: Victim Empathy/ Outcome Expectancies (VE/OE) targeted poor victim empathy and problematic rape outcome expectancies.	Single-sex	One session, one hour long	Information not available	No intervention

Table 12. Risk of bias in included studies

Study	Country	Adequate sequence generation?	Allocation concealment?	Blinding?	Free of other biases?
Adler et al. 2007	USA	No	No	Unclear	No
Anastasopoulos 2004	Canada	No	Unclear	No	No
Avery-Leaf et al. 1997	USA	Unclear	Unclear	Unclear	Unclear
Banyard et al. 2007	USA	Unclear	Unclear	Unclear	Yes
Berg et al. 1999	USA	Unclear	Unclear	Unclear	Unclear
Campbell 2007	USA	No	No	Unclear	Yes
Carr et al. ND	USA	No	No	No	No
CEDPA 2011	India	Unclear	Unclear	Unclear	Unclear
Chamroonsawasdi et al. 2010	Thailand	Unclear	Unclear	Unclear	No
Cissner 2009	USA	No	No	Unclear	Unclear
Davis and Liddell 2002	USA	Unclear	Unclear	Unclear	No
Earle 1996	USA	Unclear	Unclear	Unclear	Unclear
Fay and Medway 2006	USA	Unclear	Unclear	Unclear	No
Fergus 2006	Australia	No	Unclear	Unclear	No
Foshee et al. 1998; 2000; 2004	USA	Unclear	Unclear	Unclear	No
Foubert and Marriott 1997	USA	Unclear	Unclear	Unclear	No
Foubert and McEwen 1998	USA	Unclear	Unclear	Unclear	Unclear
Foubert and Newberry 2006	USA	Unclear	Unclear	Unclear	Unclear
Gardner and Boellaard 2007	USA	Unclear	Unclear	Unclear	Yes
Gidycz et al. 2001	USA	Unclear	Unclear	Unclear	Unclear
Gidycz et al. 2011	USA	Unclear	Unclear	Unclear	No
Grant 2007	Australia	No	No	Unclear	Unclear
Gruchow and Brown 2011	USA	Yes	Yes	Unclear	Yes
Hillenbrand-Gunn et al. 2010	USA	Unclear	Unclear	Unclear	Unclear
ICRW 2011	India	Unclear	No	Unclear	Unclear
Imbesi 2008	Australia	Unclear	Unclear	Unclear	No
Jaycox et al. 2006	USA	Unclear	Unclear	Unclear	No
Jewkes et al. 2008	South Africa	Yes	Yes	No	Yes
Josephson and Proulx 2008	Canada	Unclear	No	Unclear	Unclear
Kantor ND	USA	No	Unclear	Unclear	No
Kerpelman et al. 2009	USA	Unclear	Unclear	Unclear	Unclear
Kilmarten 2008	USA	No	Unclear	No	Unclear
Kim and White 2008	USA	Unclear	Unclear	Unclear	Unclear
Krajewski et al. 1996	USA	No	No	Unclear	Unclear
Langhinrichsen-Rohling et al. 2011	USA	Unclear	Unclear	No	No
Lanier et al. 1998	USA	Unclear	Unclear	Unclear	Unclear
Lobo 2004	USA	Unclear	Unclear	Unclear	No
Lonsway and Kothari 2000	USA	Unclear	Unclear	Unclear	Unclear
Macgowan 1997	USA	Unclear	Unclear	Unclear	No
Miller 2011	USA	Unclear	Unclear	Unclear	Unclear

Study	Country	Adequate sequence generation?	Allocation concealment?	Blinding?	Free of other biases?
Moynihan et al. 2010	USA	Unclear	Unclear	Unclear	Unclear
Northeastern University 2007	USA	No	No	Unclear	Unclear
Pacifici et al. 2001	USA	Unclear	Yes	Unclear	Unclear
Pinzone-Glover et al. 1998	USA	Unclear	Unclear	Unclear	Unclear
Potter et al. 2009	USA	No	No	Unclear	Unclear
Proto-Campise et al. 1998	USA	No	No	Unclear	Unclear
Pulerwtiz et al. 2006	Brazil	No	No	No	Unclear
Pulerwitz et al 2010	Ethiopia	No	No	Unclear	Unclear
Roberts 2009	USA	Yes	Yes	Unclear	Unclear
Rodrigues et al. 2006	USA	Unclear	Unclear	Unclear	Unclear
Salazar and Cook 2006	USA	Yes	Yes	Unclear	Unclear
Schewe ND	USA	Unclear	Unclear	Unclear	Unclear
Schewe and Anger 2000	USA	Unclear	Unclear	Unclear	Unclear
Schewe and O Donohue 1996	USA	Unclear	Unclear	Unclear	Unclear
Shultz et al. 2000	USA	Unclear	Unclear	Unclear	Unclear
Solórzano et al. 2008	Nicaragua	Yes	Unclear	Unclear	Unclear
Soul City 2006	South Africa	Yes	Unclear	Unclear	Unclear
Stephens and George 2009	USA	Unclear	Unclear	Unclear	Unclear
Taylor et al. 2010	USA	Unclear	Unclear	Unclear	Unclear
Verma et al. 2008	India	No	No	Unclear	Unclear
Weisz and Black 2001	USA	No	No	Unclear	Unclear
Winkel and Kleuver 1997	Netherlands	Unclear	No	Unclear	Unclear
Wolfe et al. 2003	Canada	Yes	Yes	No	Unclear
Wolfe et al. 2009	Canada	Yes	Yes	Yes	Unclear
Yom and Eun 2005	Korea	Unclear	Unclear	Unclear	Unclear



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