

2016

Efficacy of sexual education programs for adolescents in the United States

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Abstract

Millions of dollars are poured into teen sexual education in the United States each year; yet the United States is still ranked number one for teenage pregnancies and has one of the top three sexually transmitted infection rates in the world. Programs that focus on adolescent sexual health, sexually transmitted infection prevention, and sexual abuse prevention will be evaluated through this literature review as well as state and federal legislative rulings on the topics.

Degree Type

Open Access Senior Honors Thesis

Department

Psychology

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Keywords

sexual assault, abstinence-only, comprehensive sexual education, risky sexual behavior, STI/HIV

Efficacy of Sexual Education Programs for Adolescents in the United States

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Table of Contents

I. Abstract	Page 3
II. Introduction	Page 4
III. Formal Sex Education	Page 5
i. Abstinence-Only Vs. Comprehensive Sexual Education	Page 5
ia. History of Funding	Page 6
ib. Conflicting Arguments	Page 7
ic. Statistics and Support	Page 8
id. Teen Pregnancy	Page 12
ie. Parental Involvement	Page 13
if. Discussion	Page 14
IV. Sexually Transmitted Infection Prevention	Page 16
i. Statistics	Page 16
ii. Government Policies	Page 17
iii. Programs	Page 17
iv. Discussion	Page 17
V. Adolescent Sexual Abuse Prevention	Page 18
i. Statistics	Page 19
ii. Government Policies	Page 19
iii. Current Programs	Page 19
iv. Discussion	Page 23
VI. Conclusion	Page 24
VII. References	Page 28

Abstract

Millions of dollars are poured into teen sexual education in the United States each year; yet the United States is still ranked number one for teenage pregnancies and has one of the top three sexually transmitted infection rates in the world. Programs that focus on adolescent sexual health, sexually transmitted infection prevention, and sexual abuse prevention will be evaluated through this literature review as well as state and federal legislative rulings on the topics.

Keywords: sexual assault, teen pregnancy, STI/HIV, sexual education, risky sexual behavior

Concerns of Sexual Education for Adolescents in the United States

Almost half of all adolescents in the United States have had sex (NCLS, 2015). Half of all sexually transmitted infections in the U.S.A. occur in people 15-24 years of age, that is about 9.8 million new cases each year and over \$16.5 billion dollars annually in treatments (excluding HIV/AIDS). 24% of all HIV cases occur in individuals between the ages of 13 and 24 (NCLS, 2015). On top of these staggering statistics, 16% of adolescents between the ages of 14 and 17 are sexually abused each year, and 28% will be sexually abused in their lifetime (National Victims of Crime, 2016). These statistics make the United States the third ranking nation of STI rates among industrialized nations in the world. The U.S.A. also has the highest teen pregnancy rate in the world (NCLS, 2015). For these reasons, and more, consequences of sexual education is of greater concern to its citizens.

Formal sex education in the US has been broken into two perspectives: those who support abstinence-only sexual education and those who support comprehensive sexual education (SIECUS, 2009). Research in the evaluation of these programs is ongoing. However, these programs are not enough. Neither program has yet to have shown to lower STI rate or sexual abuse and assault in teens.

Sexual assault and abuse are major factors in adolescence and yet many programs overlook to the need for information and preventive steps in any capacity other than dating violence. Programs aimed at teens focus more on peer interaction and violence than on rape or how to report sexual abuse or assault. The programs fail to reach vulnerable populations and the data are mostly based on self-report and recall of past events. Government or federal involvement is also almost non-existent, with the Centers for Disease

Control and Prevention supporting three sexual violence (not sexual abuse/assault) programs for adolescents (CDC, 2016).

This literature review takes a closer look at the definitions and options of formal sexual education, STI prevention programs for adolescents, sexual abuse/assault prevention programs for adolescents, and the associated state and federal legislature to determine the current state of these programs and to explore future implications of previous studies.

Formal Sex Education

Abstinence Only Vs. Comprehensive Sexual Education

Definition

The Social Security Administration of the United States defined abstinence-only sex education as “an educational or motivational program which-

- A.** has its exclusive purpose, teaching the social, psychological, and health gains to be realized from abstaining from sexual activity;
- B.** teaches abstinence from sexual activity outside marriage as the expected standard for all school age children;
- C.** teaches that abstinence from sexual activity is the only certain way to avoid out-of-wedlock pregnancy, sexually transmitted diseases, and other associated health problems;
- D.** teaches that a mutually faithful monogamous relationship in context of marriage is the expected standard of human sexual activity;
- E.** teaches that sexual activity outside of the context of marriage is likely to have harmful psychological and physical effects;

- F. teaches that bearing children out-of-wedlock is likely to have harmful consequences for the child, the child's parents, and society;
- G. teaches young people how to reject sexual advances and how alcohol and drug use increases vulnerability to sexual advances; and
- H. teaches the importance of attaining self-sufficiency before engaging in sexual activity.” (Social Security Administration.)

There is no current federal definition of comprehensive sexual education but according to the Sexuality Information and Education Council of the United States it “includes age-appropriate, medically accurate information on a broad set of topics related to sexuality including human development, relationships, decision making, abstinence, contraception, and disease prevention”(SIECUS, 2009).

History of Funding

In the 1996 Section 510 (b) of Title V of the Social Security Act defined abstinence-only sex education and allocated federal funding for its teaching (Social Security Administration). Schools receiving funding must comply with abstinence-only sexual education (SEICUS, 2015). In 2008, at its peak, the government devoted \$204 million dollars to abstinence-only sexual education (Kohler, Manhart, & Lafferty, 2008). According to the National Survey of Family Growth approximately 30-38% of youth received birth control education whereas 81-87% received abstinence-only sex education between the years of 2006-2008 (Lindberg & Maddow-Zimet, 2012). In 2010, the Obama administration cut funding for abstinence-only sex education in favor of moving funds towards evidence-based programs that have been proven to reduce teen pregnancy, delay sexual ac-

tivity, or increase contraception use (Advocates for Youth, 2009). As of 2015, \$55 million dollars was allowed for Title V, and around \$200 million dollars were devoted to comprehensive sexual education programs (SIECUS, 2015).

Conflicting Arguments

Both programs have conflicting supporting research as well as conflicting positions. Arguments against abstinence-only education are varied and strong. Many parts of the definition of abstinence are attacked. Those who disagree with abstinence-only education state that very few Americans wait until marriage to have sex with or without this education. The average age for a female to engage in first intercourse is around 17.4 years of age and for a male is around 17.7 years of age, approximately 8-10 years before the average age of first marriage (Santelli et al., 2006). These programs only focus on the rate of failure of birth control products/use in preventing teen pregnancy and STI's and do not discuss proper use, where to obtain them, or how often they succeed in their purpose (Kohler et al., 2008).

Others claim that abstinence-only education follows a heteronormative standard in their teaching without mentioning or discussing same sex relationships. Teens who identify as gay, lesbian, transsexual, bisexual, or questioning (2.5%) are not addressed within abstinence-only education (Santelli et al., 2006). The program is defined as focusing on abstinence until marriage as the "expected standard" pushing sex education into moral or religious territory (Kohler et al., 2008). These teachings also often do not consider other non-vaginal intercourse activities (such as anal sex, oral sex, and masturbation) (Santelli et al., 2006). Abstinence-only education programs are also targeted as hav-

ing insubstantial results (Kohler et al., 2008) and as not having concrete data that consensual sex among two unmarried adults is harmful in any psychological fashion (Santelli et al., 2006). The strongest claim against abstinence-only education comes from a report released by the United States House of Representatives which found that 11 of the 13 abstinence only sex education programs evaluated “contained false, misleading, or distorted information about reproductive health, including inaccurate information about contraception effectiveness, the risks of abortion, and other scientific errors” (Santelli et al., 2006; SIECUS, 2009).

The arguments against comprehensive sexual education have less empirical evidence. Some believe that teaching about contraception will lead to earlier sexual debut and increased sexual activities among teens (Bennett & Assefi, 2005). Some believe that teaching birth control will “glamorize casual sex” and overshadow the central teaching of abstinence: that individuals should wait until marriage (Kim & Rector, 2010). No data have yet to be found to support these assertions (Kohler et al., 2008).

While both sides continue to have conflicting perspectives, research on determining the efficacy of sexual education programs is difficult.

Statistics and Support

There is statistical support for both abstinence only sexual education programs and comprehensive sexual education programs. Both have methodological difficulties in gathering valid data. The issues of quasi-experimental design, sociodemographic sampling issues, self-report methods, inability to define sexual education outside of a formal setting, and the use of non-participants being used as the control group were just a few

(Kohler et al., 2008; Isley et al., 2010; Lindberg & Maddow-Zimet, 2012). Even with these difficulties several trends emerged from a review of the literature.

The National Survey of Family Growth (NSFG) is a common data source for some studies on sex education. This survey used a representative sample to carefully replicate the national population. Around 1100 boys and 1100 girls between the ages of 15-19 were questioned about their sexual education, pregnancy history, STI diagnosis, and age of first sexual activity (Kohler et al., 2008). The programs evaluated consisted of abstinence only programs (23.8%), comprehensive education programs (66.8%) and birth control only education programs (Kohler et al., 2008; Isley et al., 2010). Two thirds of the 44 programs, all programs comprehensive, birth control only, and abstinence-only, were shown to lead to an increased likelihood of using contraception at first sex, delayed onset of first sexual activity, and healthier relationships long term.

Abstinence-only programs were found to delay the onset of vaginal sex (Lindberg & Maddow-Zimet, 2012) while comprehensive education led to minimal impact on delaying vaginal-sex (Kohler et al., 2008): i.e. age of first sexual intercourse. Overall all formal sexual education programs resulted in significant delay of initial sexual activity (Kohler et al., 2008). Comprehensive education, when compared to abstinence-only, is often found to increase use of contraception (Lindberg & Maddow-Zimet, 2012), birth control only education was found to increase use of reliable contraception methods (Isley et al., 2010). It was also found that comprehensive education resulted in a higher average of teens discussing issues with their parents outside of the formal education program. Parental influence greatly impacted chance of using reliable contraception (Isley et al., 2010). Women who received comprehensive sex education (80%) reported contraception

use at first sex (Doskoch, 2012). Regardless of contraceptive use reported, comprehensive sexual education significantly reduced risk of teen pregnancy by up to 50% compared to abstinence only education. No support was found in the NSFG data that formal sex education significantly reduces sexually transmitted infection diagnoses. Family unit status (residing with the biological parents since birth) seemed to be the most relevant factor in reporting STI diagnosis (Kohler et al., 2010). Of the analyses on the data from the NSFG the most remarked discovery, in all studies, were those individuals who received no formal education. One third of men of color received no formal sex education. This was similarly found among populations who were of black or hispanic descent, low income, and lower education (Lindberg & Maddow-Zimet, 2012). The NSFG analyses were obscured by self-report bias, small sampling of birth control education only, lack of information on what, exactly, is taught in each program, and that non-formal education was unmeasured or unmeasurable (Isley et al., 2010).

In a review of formal sex education, one group of researchers focused on 83 studies across the globe (Kirby, Laris, & Rolleri, 2007). Of these, 56 programs were based in the United States, 9 programs in other developed nations, and 18 in developing nations. Programs that were STI/HIV prevention only consisted of 52% of those evaluated, 31% were STI/HIV and teen pregnancy prevention programs, 17% only focused on teen pregnancy, and 7% were abstinence only sex education programs and were all based in the United States. Overall 65% had significant positive effects (lowered one or more risky sexual behavior such as increased condom use, lower teen pregnancy rate, lower diagnoses of STI/HIV, and later initiation of sexual behavior), with 7% having significantly negative effects (increasing risky sexual behaviors). Half of the programs were found to

delay initial sex (between no formal sex education and formal sex education), half found no difference in frequency of sex, half found no difference in the number of sexual partners, half reported increased use of condoms, and half reported less sexual risk taking. Difficulties cited within the research include publication bias, weak quasi-experimental designs, and none of the studies included same-sex attracted individuals (Kirby et al., 2007).

One study focused on looking at school-based intervention programs. They reviewed 16 studies (3 abstinence only, 12 comprehensive, and one study that compared the two). They found that comprehensive sex education leads to improved contraception knowledge and use (Bennett & Assefi, 2005).

Virginity pledgers, individuals who signed a pledge to abstain from sex until married, were also a common theme among studies of sex education. However, while virginity pledgers were found to delay initial sex, 88% reported having initial sex before marriage and breaking their pledge, compared to 99% of non-pledgers who initiated first sex before marriage. These pledgers were found to have a lower number of sexual partners (Santelli et al., 2006) and a lower rate of STI diagnosis (Kim & Rector, 2010). However, pledgers were less likely to see a doctor for an STI or to get tested for an STI which obscures the data obtained about STI rates (Santelli et al., 2006). As of January 1st, 2015, 22 states and the District of Columbia require sex education, 33 states and DC require HIV/AIDS education, and only 19 states require information to be “medically accurate” (NCLS, 2015).

Teen Pregnancy

The United States of America has the highest teen birth rate among industrialized nations in the world (NCSL, 2015). Unwanted teen pregnancy has both psychosocial and physical consequences for both the mother and the child. Children of teen mothers are at risk for low birth weight and infant mortality. These children are also at greater risk for behavioral problems during childhood, are more likely to drop out of school, and are at a higher risk for sexual abuse in childhood (Killebrew, 2014). In the United States of America there are currently thirty one evidence-based teen pregnancy prevention programs approved by the Office of Adolescent Health. In an evaluation of these programs, each discussed 9 topics related to teen pregnancy and STI/HIV prevention, including increased parental communication, delayed initial onset of sexual activity, and all but three showed significant increase in proper contraception and condom use (Langley, 2015).

In a study that focused only on teen pregnancy rates, results showed support for comprehensive sexual education for adolescents (Yang, 2010). Overall, they found that there was an increase of teen birth rates in the southern states (Oklahoma and the “Appalachian/deep south states” had the highest rates) and among teens of Hispanic descent where the rate of teen birth rates was 60%, or more, in most states. Abstinence-only education was found in states that had both high and low teen birth rates as well as the availability of the Medicaid Family Planning Waiver. Abstinence education did influence Black and White teens, but not Hispanic teens, in lowering teen birth rates. The availability of the Medicaid Family Waiver (which offers medical services such as exams, pregnancy tests and counseling, birth control, treatment for STI’s, and other related lab tests

to those in financial need (Ranji, Bair, & Salganicoff, 2016)) was found to be significant in lowering teen birth rate overall. (Yang, 2010).

Conservative religious beliefs were found to be significant in predicting birth rate in each state as well as the concentration of Hispanics in the area. States that have a conscience law in effect (a law that allows medical professionals the right to refuse service or treatment based on religious beliefs or their own conscience; including services such as abortion, contraception and sterilization (Consciencelaws.org)) showed a higher teen birth rate among older teens (17-19) (Yang, 2010). Among the sexual education programs that offer contraception information, 80% lead to an increase in use of contraception after the program ended (Bennett and Affefi, 2005). These findings support comprehensive sexual education for reducing teen pregnancy.

Parental Involvement

Parental influence plays a key role in teen risky sexual behaviors (Kohler et al., 2008). Parental intervention and discussion with teens influences teen use of reliable contraception (Isley et al., 2010) and delaying initial sex (Lindberg & Maddow-Zimet, 2012). While research evaluating abstinence only sex education vs. comprehensive sex education is ongoing, only 15% of parents support abstinence-only sex education in their children's schools. 78% of parents believed their children should be taught about birth control and safe sex (Bennett & Assefi, 2005). Over three quarters of parents desire information on STI's, reproduction, healthy sexual decision making, contraception, abortion, homosexuality, masturbation, and more to be taught in middle school and high school (Santelli et al., 2006).

Discussion

Of the programs evaluated, comprehensive sexual education has been found to reduce initial sexual behavior as well as initiation and increase condom and contraception use. The results vary with regard to the differences between comprehensive sexual education and abstinence only sexual education. Some studies of birth control only sexual education programs showed increased reliability of contraception usage (Isley). The data on removing abstinence education and focusing on other sexual education aspects is insufficient at this time. The lack of a clearly defined and administered program makes comparison between each sexual education program empirically challenging. Geographic location, access to professionals or properly trained sexual health educators, and socioeconomic status of families of teens involved in the program add to the difficulties in determining curriculum for each specific program. Conservative religious values and worry over influencing teen behavior also impacts which programs are chosen in each location.

Data collection on these programs is the next big problem. Many programs do not seem to gather the necessary data to see significant changes in teen behavior after the program ends. Of the data collected, a lack of a standardized curriculum makes it difficult to understand which parts of each program is or is not successful. Self-report on sexual behavior among teens, parents and educators may also play a part as omission, false report, and lack of operationally defined constructs can lead to different values of information collected from the reports.

Lastly, the programs that exist do not take into account what teens may or may not learn to effectively make decisions about sexual activities. If anatomy, access to con-

traception, interpersonal skill building, relationship and dating information, sexual behaviors or activities, are not discussed teens may not feel their questions will be answered honestly. These deficits on teens may affect the knowledge teens absorb from these lessons and leave them open to finding these answers from unreliable sources (i.e. peers, internet, or media).

At risk students in low income locations are also not receiving the programs they require. While formal sexual education programs in those areas are found to have significant results in lowering teen pregnancy, STI's, and delaying initial sexual activity, the lack of funding, access, and programs specific to those areas create an atmosphere of instability of continuity. (CDC, 2015).

Future research points toward finding new solutions for these previously listed problems. Programs would be best tested among comparable representative samples to determine if the inclusion of birth control methods as well as anatomy and relationship education has significant results on adolescent's sexual behavior. Birth control only programs need to be developed further and evaluated, as current research suggests better sexual health outcomes such as lower STI diagnoses, lower teen pregnancy, and more contraception use with these programs over both comprehensive and abstinence-only sexual education (Isley, 2010). It is imperative that measures be placed on these education programs so that they may be tested and evaluated across programs and across the country to better see where the programs need to change or adapt in the United States for adolescents to have access to the programs that have the greatest efficacy in reducing unwanted pregnancies, lower STI rates, and increase relationship satisfaction.

Moving beyond the classroom is also suggested. In a world of ever-changing technology wider adolescent populations can be reached through social media, television programs, internet access, and mobile applications. These may be utilized to deliver sexual education programming and information to adolescents. By utilizing these platforms, adolescents can have access to professional and medical personnel who can answer their questions in a safe, accurate and anonymous fashion while also presenting up-to-date and evidenced based sexual education to a larger audience. In addition to providing teens with information about sexual activity and its consequences, programs include more information that adolescents in each community require and desire including information on where to access contraception, who they can go to with questions or concerns, how to build successful and healthy relationships, and other topics of interest.

Sexually Transmitted Infection Prevention

Statistics

It is estimated that half of all the cases of sexually transmitted infections occur in persons 15-24 years old that is about 9.8 million new cases each year, and about \$16.5 billion annually in treatments, excluding HIV/AIDS (NCLS). The Centers for Disease Control and Preventions lists teens with gonorrhea at 70% of all reported cases. Chlamydia follows soon after at 66% of all reported cases. Nearly a quarter of new diagnoses (26%) of HIV occurred in people 13-24. In addition to these STIs, HPV (which was reportedly the most common diagnosed STI among teens (CDC, 2013)) has been found mostly in young women 14-19 years of age (Forhan et. al., 2009). The CDC reports that young women are at an increased risk for infertility caused by undiagnosed STI's. Nearly

24,000 women become infertile each year from undiagnosed STIs (CDC, 2013). Teens who are of racial or ethnic minority are at an increased risk for STI/HIV (CDC, 2015).

Government Policies

Out of the 50 states in the United States only 33 states plus the District of Columbia provide state established legislature requiring education for teens about HIV/AIDS (NCSL, 2015). Title X, where offered, provides federal funding for STI testing and contraception (Office of Adolescent Health, 2015).

Programs

Many sexual education programs, both abstinence only and comprehensive, offer a school based curriculum that includes basic STI/HIV knowledge. Of these programs many find success with comprehensive programs showing a decrease in sexually risky behaviors (Bennett & Assefi, 2005). Few programs look at STI/HIV reporting behaviors or testing behaviors. Of the programs that do, self-report bias and lack of diagnoses of asymptomatic STI's may invalidate the data (Kohler, Manhart, & Lafferty, 2008).

Discussion

As with the sexual education programs previously discussed, there are data collection problems associated with STI/HIV risk in adolescents. Due to self-report data, it is unclear whether adolescents have been tested for STI's, don't want to disclose the information regarding their STI's, or do not have the knowledge that they may have been infected with an asymptomatic STI. These factors may impact how data are reported.

In addition to this, bias in states reporting racial and ethnic minorities is noted. According to the CDC many states do not report STIs consistently throughout the years for racial and ethnic minorities. This lack of data on trends makes it difficult to assess if

prevention programs and access to medical facilities are available or being utilized by these populations.

Including information on STI/HIV, in a sexual education curriculum, may be a necessary but challenging amount of information for students. The lack of federally supported structure for the curriculum taught, and lack of federal support of these programs, may impact what information is being offered to the students with regards to infection rates, prevention, and treatments options. Forhan (2009) suggested making sure that adolescents know they can receive treatments for STIs without a parent's consent in the United States of America may increase the rate of STI testing and diagnosis. This knowledge alone may help adolescents to seek the help and information they need.

The topic of STI/HIV is very medically dense. Finding new and inventive ways of presenting this information to adolescents outside of a school based curriculum may also assist in influencing them to get tested and seek treatment. Games, media, and mobile applications may be helpful for teens to seek easy access to treatment options, information on symptoms and transmission, and location of services for treatment. These factors may help in decreasing overall STI rates in adolescents.

Adolescent Sexual Abuse Prevention

Statistics

The National Center for Victims of Crime report that 16% of teens 14-17 years of age will be sexually abused within the span of one year and 28% of teens 14-17 years of age will be sexually abused in their lifetime. Of these assaults 84% will involve fondling of genitalia, 79% will involve forced sodomy, and 75% will involve assault with an object. Sexual abuse in adolescence has lasting consequences on the child (National Center

for Victims of Crime, 2016). Along with psychological and physical wounds from the assault, teenagers who are sexually abused are at higher risk for behavioral issues and consecutive abuse (NCLS, 2015). In several studies among women who reported sexual assault by a family member, 63% reported a rape or attempted rape after the age of 14. Those in the 63% category are 13.7 times more likely to experience sexual assault within the first year of college. Women are not the only ones at risk. Men who had been sexually abused are five times more likely to be involved in teen pregnancy, three times more likely to have multiple sexual partners and two times more likely to have unprotected sex (NCSL, 2015).

Government Policies

There is no current operational definition for adolescent sexual abuse used by the government or law officials. Adolescent sexual assault is defined as sexual contact between a child 14- 17 years of age with someone who is 5 years or older. If the event occurs with someone in close relation (i.e. a family member or family friend) it is considered child sexual assault (Walsh & DiLillo, 2014) . The Centers for Disease Control and Prevention (CDC) has guidelines for adolescent sexual abuse prevention programs. (Walsh & DiLillo, 2014).

Current Programs

Prevention programs are designed to teach children and teens to “recognize, avoid and escape” sexual abuse. Most programs focus on self-esteem and avoid direct or explicit sexual discussions with those in the programs. Wolfe (2006) found that, when adjusting for possible definitions of sexual assault, 2-62% of women have been sexually abused in their youth, and 3-16% of men reported sexual abuse. Of the participants in

their study on sexual abuse and assault they found 67% had received some form of sexual assault prevention education. Among the children participants 20% believed that an assailant would be older, violent, and “crazy”. The estimated reporting of children as victims of sexual abuse is only 25%. Wolfe (2006) found a significant increase in assault prevention if a comprehensive sexual assault prevention program were attended.

Gibson and Leitenberg (2000) corroborated that finding. They found that in a sample of 825 women, 8% who had received preventative abuse education were abused prior to 16 years of age compared to the 14% who had been abused and not received sexual abuse prevention education. They cited the possible factors influencing their findings were that children with education and that perpetrators were less likely to approach a child who had that knowledge (Gibson & Leitenberg, 2000).

The CDC currently supports only three violence and victimization prevention programs for adolescents. These programs are evidence based and have been thoroughly studied (CDC, 2016). *Safe Dates* is a program aimed at teens to reduce teen dating violence. They employ a variety of teaching tools including a student involved theater group to play out specific roles and situations, curriculum taught by a health professional in school, and poster content supporting the lessons. *Safe Dates* has been successful in reducing physical, serious physical, and sexual dating violence (Foshee, 2004). While the program was found to be effective in reducing violence with a dating partner it focuses only on those dating partners and not with other possible situations with family, teachers, strangers, etc. The program also did not discuss reporting of abuse, and instead, opting to discuss leaving the partner, or using communication tools (Foshee, 2004). Further discussion on what to do when those tools fail was not reported.

Another program supported by the CDC is called *Shifting Boundaries* (CDC, 2016). This program is aimed at middle schoolers with both building and classroom interventions. The interventions are designed with the principle of the theory of reasoned action (TRA). The TRA implies that individuals will modify or tailor their behavior if there is knowledge of “attitudes towards and perceived norms of the desired behavior.” With this theory in mind the program consists of several interventions which include teaching children about consequences of perpetuating sexual abuse, laws, how to communicate personal boundaries, and the responsibility of the bystander to “intervene” (Taylor, 2013). The program was found to reduce perpetuation of sexual harassment against others, reduce sexual victimization and violence by peers, and to reduce sexual violence in dating (Taylor, 2014). This program does discuss reporting of abuse and implementing strategies to keep students safe while in school. It does not however include non-peer interactions, rape prevention, or dealing with previous abuse (CDC, 2016).

The last of the three programs supported by the CDC is called *Real Consent* (CDC, 2016). Unlike the other programs that focused mainly on middle schoolers, this program is aimed at college students. It focuses on dating violence and sexual harassment. The program is offered online and aims to teach students about rape and sex myths, intervention methods, and consent (CDC, 2016). Results of the program were found to increase intervening behavior, decrease perpetuation, decrease supportive beliefs about rape, decrease violence against women, and provide greater knowledge of sexual harassment, consent, and rape (Salazar, 2014).

The CDC also lists several “promising” programs that still require more evaluation. The first being *Green Dot*. This program, like *Real Consent*, is aimed at college students (although they claim that it has been modified for other uses as well but those have yet to be evaluated). The program uses training “peer leaders” as well as campus wide presentations to teach about sexual violence and assault (CDC, 2016). This program resulted in a decrease in interpersonal violence, sexual victimization, and sexual harassment in comparison to other colleges who did not use this program (Coker et. al., 2015). The program was not designed to discuss reporting, rape myths or non-peer interaction and the comparison to other non-intervention schools does not include whether those schools included similar samples (Coker et. al., 2015).

Second Step, another program supported by the CDC (2016) is aimed at middle schoolers. It discussed many factors of violence in a child’s life outside of sexual abuse and assault, such as bullying. Evaluation of the program found it to reduce reported violence and sexual harassment (Espelage, Low, Polanain, and Brown, 2015). The study was conducted across multiple sites but according to the CDC still needs to be evaluated for older students, and more reliability generalization between locations before it will move into a program the CDC supports (CDC, 2016).

The last two programs listed as “promising” by the CDC are both aimed at bystanders. The *Coaching Boys into Men* program uses athletic coaches as teaching tools about the responsibilities of bystanders in cases of abuse and violence. Boys in grades 9-11 were targeted in 16 schools for the intervention. Coaches used a scripted discussion with the teams. An evaluation of the program found that it reduced violence perpetuation and sexual harassment (Miller et. al., 2013). The CDC cites the fact that the impact of the

programs on sexual violence statistics were not evaluated or discussed and that further research in the area is needed (CDC, 2016).

The other program aimed towards bystanders is the program *Bringing in the Bystander*. The program is aimed at college students and gives them a role to play in intervening in sexual assault/abuse situations. Unlike other studies this program includes all genders as bystanders. The evaluation found the program to be effective in reducing belief in rape myths and increasing prosocial bystander intervention behavior (Banyard, Moynihan, and Plante, 2007). While the program was successful in changing bystander behavior in intervening in situations where sexual violence is occurring, it did not evaluate the impact on sexual assault and abuse rates among adolescents in the area. For this reason the CDC is waiting for more research on that front (CDC, 2016).

Discussion

Adolescent sexual abuse/assault is a real threat in the United States. Of the programs discussed, few touch on all the aspects of sexual abuse/assault. The focus is on adolescent dating violence and assault/abuse from peers. The threat from strangers, family, adults or even children are overlooked. Perhaps this infers a false premise that, by adolescence, the child will have already had access to an abuse/assault prevention program. The programs discussed also neglect to offer information on how to report, where to report, or what to do in cases of abuse/assault. Some programs do not discuss assault/abuse outside of the peer group, at all, and this is something that needs to be remedied.

Reporting of sexual abuse/assault is low compared to the reality (National Center for Victims of Crime, 2016) and the information on how, why, and where to report needs to be included in any assault/violence/prevention program. Access to these programs is

rarely reported. Youth need to be able to have access to these types of programs all across the United States. Social media, mobile applications, games, and the internet need to be utilized in providing this education to adolescents as well as offering these programs in schools. By giving young people a place to easily find and access information, as well as a safe place to find associated assistance in case of abuse, we may be able to increase the number of reports. With only 67% found to have had prevention education (Wolfe, 2006) it is important to make sure that access to these types of programs are available for all adolescents whether in a school based curriculum or in some other form.

Evaluating the programs of sexual abuse/assault is also an issue. Self-report bias and recall bias are issues when evaluations are based on participants remembering past events. In addition to these biases, a lack of an operational definition of what constitutes sexual abuse, assault or consent may also impact the evaluation of each program. Limited implementation of these programs among different population demographics also makes it difficult to see which programs are successful in lowering sexual assault/abuse in adolescents and narrows the scope their ability for generalization among the national population. By studying the impacts of these prevention programs in different locations and among different populations we can better see if their curriculum or content is successful.

Conclusion

Future research in the areas of sexual abuse prevention, STI/HIV prevention, and sexual education should be aimed at increasing validity and reliability of past studies and expanding the work that has already been done.

Common limitations among the evaluations of associated programs discussed previously in this review are data collection difficulties. With sexual education, the difficulty of data collection comes from self-report bias, lack of a clearly defined curriculum, narrow samples with low generalizability, and lack of reported data across studies. For STI/HIV the data collection problem comes from the varied instruction techniques, lack of access for teens acquired knowledge, or to people they trust for information, lack of testing in teens, and non-standardized reporting among states across consecutive years. These limitations are also reflected in sexual abuse prevention programs, where there does not seem to be a core sexual abuse/assault prevention program supported by the CDC designed for adolescents. The collection of information of the impact of these programs on the rates of abuse/assault is not reported. The number of unwanted teen pregnancies (not just the umbrella of teen pregnancy, as some are desired pregnancies), the rate change in STI/HIV infection directly related to condom use or misuse, and the sexual health of adolescents in the community after a program also lead to an inability for researchers to compare the overall efficacy of these programs, long-term.

Another theme for future consideration is government involvement and support for getting access of these programs to at risk populations and adolescents in need. Many programs also lack funding and access to trained personnel to implement the program in each community. With such a need for the programs there is a need for more government, financial, and lawful support to get these programs where they need to be effective. With regards to reducing teen pregnancy, it was shown that government policy had an effect on the number on teen births in each state (Yang, 2010). This evidence is compelling and

may lead the federal government to the conclusion that they need to implement legislation that would ensure those services that lower the risk of teen pregnancy and put an end to those that increased risk.

There is also a lack of non-biased evaluation of programs that could be filled by government participation. Many of the studies discussed were evaluated by the designers of the programs themselves and an objective perspective across the programs and their actual results may have a significant impact on the programs that should be selected to be available to adolescents.

Access to accurate education is also an issue (sexual education, STI/HIV prevention, teen pregnancy prevention, and adolescent sexual abuse/assault prevention). Many programs are aimed at schools and community based institutions but the cost for these services may interfere with community's access. Moving into a more mobile, internet friendly version of these services may offer an interactive, personal, and demographic specific education on prevention to those in need. A program with this easy access may be available then with less of a cost to each community and be available to anyone who can get to a public library or school. Such a program would then be customized to each adolescent or group and their needs. These programs would then be able to cover more information pertinent to the adolescent in the program and cover different sexual orientations, socioeconomic statuses, disabilities, anatomical questions and information, cultural and religious concerns, and provide adolescents with the chance to anonymously ask questions and seek assistance on many different items of concern.

Future research is suggested to focus on the gaps of current programs, and to developing new programs that are successful in providing access to this much needed education among different demographics and populations. Research also is suggested to be involved in finding out what the adolescents themselves feel they wish to or need to learn regarding the topics of relationships, health, sexual education, teen pregnancy, STI/HIV testing and prevention and sexual abuse/assault prevention in their communities.

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