THE ASSOCIATION BETWEEN CHANGES IN MECHANISMS OF RISK AVOIDANCE ON ADOLESCENTS' ATTITUDES ON INTENTIONS TO DELAY SEXUAL INITIATION FOLLOWING RELATIONSHIP EDUCATION

by

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(Under the Direction of Ted Futris)

ABSTRACT

The current study explores changes in youth's (n = 889) reports across various mechanisms of risk avoidance and their association with their intentions to delay sexual intercourse following participation in the youth relationship education program, *Relationship Smarts Plus* (RS+). The mechanisms of risk avoidance examined included youth's reports of their (a) likelihood of avoiding drugs and alcohol, (b) ability to regulate their emotions, (c) educational aspirations, (d) understanding of healthy relationships, and (e) ability to resist pressure to have sex. Results showed that youth who reported increases in mechanisms of risk avoidance were also more likely to report greater intentions to delay sexual intercourse until after graduating high school, graduating college, and until marriage. Lastly, variations in these associations were not found based on youth's sex and their reports of program experience. Overall, these finding offer continued support for the potential benefits of relationship education in sexual avoidance educational efforts.

INDEX WORDS: Individual and Family Science, Social Research, Health Education

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CHAPTER 1

INTRODUCTION AND LITERATURE REVIEW

The period of adolescence is a crucial stage for self-discovery and identity development, influenced by the establishment of relationships (Collins, 2003). However, many adolescents lack the necessary skills and knowledge to cultivate and sustain healthy relationships (Connolly et al., 2010; Kirby, 2008; Ma et al., 2014), leading to risky behaviors (Helfrich & McWey, 2014), including early sexual initiation (Magnusson et al., 2019). It is estimated that about 40% of adolescents have sexual intercourse (Martinez & Abma, 2020). Research has shown that early sexual initiation places youth at greater risk for both contracting sexually transmitted infections (STIs) and teen pregnancies (Kaestle, 2005). In 2021, more than 50% of reported STI cases were among young adults aged 15-24 (National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention (U.S.). Division of STD Prevention, 2018). Despite a general decline in teen birth rates in the United States since the 1990s, current rates remain concerning (Fox et al., 2019). Notably, from 2007 to 2021, there was a vast decline in the teen birth rate, dropping from 41.5 to 13.9 births per 1,000 females (Osterman et al., 2021). More so, teen mothers face significant challenges including lower educational attainment (Sobngwi-Tambekou et al., 2022), living in poverty (Assini-Meytin & Green, 2015), increased likelihood of being single parents and poor health (Driscoll, 2014; Hobcraft & Kiernan, 2001).

Youth attitudes toward sexual behavior, particularly their intentions to delay or engage in sexual activity, serve as the strongest predictor of sexual initiation (Buhi & Goodson, 2007). Efforts to delay sexual initiation, and hence curb teen pregnancy and STI rates, have mostly

focused on the delivery of sex education (Bordogna et al., 2023). However, research has generally found mixed findings regarding the effectiveness of these programs in reducing risky sexual behavior (Kirby, 2008; Lameiras-Fernández et al., 2021). One criticism of sex education programs has been the lack of focus on healthy relationship skills (DiCenso et al., 2001). More recent efforts have aimed to demonstrate the benefits of youth relationship education (YRE) in reducing risky sexual behaviors (Barbee et al., 2023; Hawkins, 2018). Programs that aim to improve various mechanisms of risk avoidance (e.g., alcohol and drug use, social-emotional choices, educational aspirations) linked to reducing sexual risk intentions and behaviors have also demonstrated promising benefits of delaying sexual initiation (McElwain et al., 2017). Using data collected from youth who completed the YRE program, *Relationship Smarts* (RS+; Pearson, 2007), the current study examines the association between perceived changes across various mechanisms of risk avoidance and youth's reports of intentions to delay sexual initiation. In addition, variations in these changes and associations based on participant demographics (e.g., gender, race, age) and program experience are explored.

Factors Contributing to Risky Sexual Behavior

Approximately 50% of US adolescents have experienced sexual intercourse by the age of 16-17 (Martinez & Abma, 2020). Early sexual initiation varies based on demographic (e.g., gender, race) and community characteristics (Ramirez-Valles et al., 2002; Santelli et al., 2004; Zimmer-Gembeck & Helfand, 2008). Gender serves as a strong predictor of sexual initiation, with males more likely to initiate sexual intercourse earlier than females (Ramirez-Valles et al., 2002; Santelli et al., 2004; Zimmer-Gembeck & Helfand, 2008). Regarding race, black and Hispanic adolescents are more likely to initiate sexul intercourse earlier than their white and asian counterparts (Ramirez-Valles et al., 2002; Santelli et al., 2004; Zimmer-Gembeck &

Helfand, 2008).There are also gender differences within racial groups. For example, black adolescent males in contrast to black females, typically initiate sexual intercourse earlier than their white counterparts (Santelli et al., 2004; Zimmer-Gembeck & Helfand, 2008). In addition, adolescents in socioeconomically disadvantaged communities are more likely to have sexually permissive attitudes and are placed at a higher risk of early sexual debut (Baumer & South, 2001; Zimmer-Gembeck & Helfand, 2008). Also, adolescents who do not live with both biological parents, have mothers who were teen moms, and lack a college degree are all more likely to have sexual intercourse before the age of 18 (Martinez & Abma, 2020; Ramirez-Valles et al., 2002). On average, black and Latino adolescents are more likely to live in single-mother homes, compared to their white counterparts, placing them at a greater risk of engaging in risky sexual behaviors (Harris et al., 2002; Pearson et al., 2006; Ramirez-Valles et al., 2002).

Although demographic characteristics of risk have been consistently associated with early sexual initiation, there is also a strong association between various attitudes and behaviors that may influence youth's intentions to delay sex. For example, alcohol and drug consumption are positively correlated with risky sexual behaviors (Devine et al., 1993; Oshri et al., 2012), such as early sexual initiation (French & Dishion, 2003; Santelli et al., 2004), and teen pregnancy (Helfrich & McWey, 2014). Historically, adult males are more likely to engage in substance use, however, among adolescents, rates of alcohol consumption has become more similar between females and males (Peiper et al., 2016). Higher drug consumption among adolescents is associated with low self-control (Walker & Holtfreter, 2021), poor emotional regulation (Hessler & Katz 2010; Walker & Holtfreter, 2021), and a lack of social support (Zimmer-Gembeck & Helfand, 2008). YRE programs teach youth how to regulate their emotions, make healthy and safe choices, and develop skills to effectively communicate their needs and manage conflict

(Adler-Baeder e al., 2007; Janssens et al., 2020; McElwain et al., 2017). In turn, these skills contribute to healthier relationships (Rice et al., 2017; Schramm & Gomez-Scott, 2012) and reduced engagement in risky behaviors such as drug use (Hessler & Katz 2010), and as a result, reduces teen pregnancy (Barbee et al., 2023)

In addition, research has underscored the association between early sexual initiation and academic outcomes. For example, early sexual engagement is often associated with overall lower academic aspirations, plans, and performance (Santelli et al., 2004; Zimmer-Gembeck & Helfand, 2008). Similarly, higher levels of educational attainment is associated with delayed age at first intercourse (Bradley & Greene, 2013; Devine et al., 1993; Schvaneveldt et al., 2001). There is a strong association between educational goals and timing of first sexual intercourse (Miller & Sneesby, 1988; Schvaneveldt et al., 2001). Specifically, a longitudinal study found that engagement in sexual intercourse was associated with reduced academic aspirations, suggesting that early sexual engagement alters attitudes and beliefs toward academic achievement (Schvaneldt et al., 2001). However, the association between academic aspirations and sexual intercourse may be weaker among black males (Schvaneldt et al., 2001). YRE curriculum provides adolescence with the necessary skills for progressing towards their goals (Janssens et al., 2020; Barbee et al., 2023). Despite the scarcity of research regarding the direct impact of YRE on academic outcomes and aspirations, coupled with its robust association with risky behaviors, the current study aims to shed light on the influence of YRE on youth's attitudes and beliefs towards academic achievement following their participation in the YRE program.

Early sexual initiation is also linked to a lack of emotional skills, specifically regarding self-regulation. Self-regulation is conceptualized as one's ability to regulate emotions, attention, and behavior (Raffaelli & Crockett 2003). Youth who struggle with regulating and managing

their emotions in healthy ways face a higher risk of involvement in alcohol and drug consumption, and exhibit overall lower educational aspirations (Cooper et al., 2003; Hessler & Katz, 2010; Houck et al., 2018). In addition, lower self-regulation is associated with other risky sexual behaviors (e.g., greater number of sexual partners), even after controlling for demographic and contextual factors (Raffaelli & Crockett 2003). Specifically in females, social and emotional skills act as protective buffers against risky sexual behaviors such as having multiple sexual partners (Lando-King et al., 2015). A lack of emotional skills also make youth more vulnerable to peer pressure (Fatima et al., 2023). Peer influence is particularly pronounced during adolescence (Foulkes et al., 2018), as youth are more susceptible to engaging in risky decision-making in the presence of peers (Gardner & Steinberg, 2005). Youth who are at greater risk of peer pressure exhibit a higher likelihood of engaging in drug use, performing worse in school, and having more favorable attitudes towards risky sexual behaviors (Santor et al., 2000). YRE programs provide youth with knowledge and tools on how to regulate their emotions (Adler-Baedere al., 2007; Janssens et al., 2020; McElwain et al., 2017), and as a result, improve youths' romantic relationship self-efficacy (Futris et al., 2017).

Youth Relationship Education

Sex education programs aim to reduce sexual risk-taking behaviors that may lead to sexually transmitted diseases by emphasizing the behavioral goals of delaying initiation or using contraception (Franklin & Corcoran, 2000). Most teens go through some type of sexual education through public school that either promotes abstinence as the sole method of avoiding pregnancy and STDs (abstinence-based) or goes beyond abstinence and emphasizes the importance of contraceptive use (comprehensive-based) (Kirby, 2008). Sex education programs aim to provide youth with age-appropriate, scientifically accurate information in various

domains, including sexual and reproductive health, puberty, consent, and pregnancy (UNESCO et al., 2018). The goal of sex education is to provide youth with tools to navigate sexual development and grow into sexually healthy adults (Future of Sex Education Initiative, 2020). However, research on the effectiveness of sex education interventions in reducing risky behaviors and increasing intentions to delay sexual intercourse is scarce and often inconclusive (Chin et al., 2012; Kirby, 2008). This might be because sex education programs often avoid relationship skills and do not teach youth how to cultivate and maintain healthy relationships (Weissbourd et al., 2013). In fact, many young adults claim they wish to have received more tools and education on the emotional aspects of a romantic relationship in school (DiCenso et al., 2001).

Adolescence is a crucial developmental time heavily influenced by romantic relationships (Collins, 2003; Thorsen & Pearce-Morris, 2016). The majority of youth experience at least one romantic relationship during adolescence (Connolly & McIsaac, 2009), which can be a source for both positive and negative outcomes. Specifically, although relationships can improve well-being and help youth discover their psychosocial identity (Gonzalez Avilés et al., 2021; Joyner & Udry, 2000; Montgomery, 2005), without the knowledge on how to create and maintain positive relationships, youth are more likely to have sex earlier (Baiden et al., 2021), report poorer mental health (Soller 2014), use drugs (Hessler & Katz, 2010), and struggle academically (Miller & Sneesby, 1988; Schvaneveldt et al., 2001).

Youth-focused relationship education (YRE) sets itself apart from traditional sexual education by providing youth with necessary tools to start and maintain healthy relationships (Kerpelman et al., 2009; McElwain et al., 2017). YRE is effective in changing youth's attitudes and behaviors by increasing youth's romantic relationship self-efficacy, improving conflict

management skills, and setting more realistic expectations (Adler-Baeder et al., 2007; Antle et al., 2011; Futris et al., 2017; Hawkins, 2018; McElwain et al., 2017). Overall, YRE programs enhance youth's comprehension of the risks associated with sex and teach youth to have less favorable attitudes towards having a child during adolescence which has shown optimistic results in reducing teen pregnancy (Barbee et al., 2023).

Notably, the impact of YRE on youth may depend on participant characteristics (e.g., gender, race, age) as well as the participants' experience in the program. For example, following YRE completion, females demonstrate more positive change in their attitudes towards sexual delay than males (Morrison et al., 2018), black youth demonstrate overall greater gain from the program than white youth (Antle et al., 2011), and older participants demonstrate overall more change from the curriculum than younger youth (Halpern-Meekin, 2011). Regarding youth's program experience, YRE participants tend to report an overall high satisfaction rating following program completion (Antle et al., 2011; Huntington et al., 2022). While previous studies have not extensively explored the association between program experience and intentions of sexual delay, social learning theory (Bandura, 1997) highlights the significance of the social context in shaping learning experiences. This suggests that the social environment in which learning takes place can greatly impact youths' experiences and, consequently, influence their reported outcomes. The current study aims to contribute to the limited research evaluating YRE programs by examining participant experience as a possible moderator influencing the association between youths' mechanisms of risk avoidance and their intentions of sexual delay.

Current Study

The current study focuses on the YRE program *Relationship Smarts* (RS+; Pearson, 2007), an evidence-based relationship education curriculum developed by the Dibble Institute that aims to help youth (a) understand how relationships connect to their personal development (e.g., identity, goals, and values), (b) distinguish between healthy versus unhealthy relationship behaviors, (c) develop communication skills to effectively manage conflict, and (d) make safe and mature relationship decisions. RS+ uses an evidenced-based curriculum that uses an innovative and lively approach to educate youth on positive development, life skills, healthy relationships, dating violence, and pregnancy prevention (RS+; Pearson, 2007). The RS+ program is presented through group activities and discussions, and encourages youth to explore various topics including self-development, working towards their goals, and a wide range of behaviors and beliefs regarding romantic relationships (Kerpelman et al., 2009; Pearson 2007).

Using data collected from youth aged 12-17 who completed the RS+ program, the present study aims to expand the recent literature on the effectiveness of YRE programs in promoting healthy attitudes/beliefs and relationship skills. The current study examines youth's reports following participation in the program of perceived change in mechanisms of risk avoidance as reflected across various indicators of attitudes/beliefs and relationship skills, including their (a) likelihood of avoid using drugs and alcohol, (b) ability to regulate their emotions, (c) educational aspirations, (d) understanding of healthy relationships, and (e) ability to resist pressure to have sex. The aim of this study is to first (RQ1) investigate whether perceived change in mechanisms of risk avoidance is associated with youths' reported intentions to delay sexual intercourse until after (a) graduating high school or receiving a GED, (b) graduating college or completing another education or training program, and/or (c) marriage following participating in the

program. Next (RQ2), we examine how participant characteristics (i.e., gender, race, grade) and program experience moderate the effect of perceived change in mechanisms of risk avoidance on adolescents' intentions to delay sexual intercourse.

CHAPTER 2

METHODS

Procedure

Data for the current study was collected as part of a federally-funded project that implemented the RS+ program between September 2021 and May 2023 in four counties across Georgia (RS+; Pearson, 2007). The RS+ program was delivered in schools to 1,372 students enrolled in the 7th, 8th, and 9th grade and implementation ranged from two weeks (one class per day) to seven months (one class per month). The curriculum covers the six "core" lessons (i.e., "Maturity Issues and What I Value", "Attractions and Infatuation", "Decide, Don't Slide!", "Dating Violence and Breaking Up", "Communication and Healthy Relationships", "Sexual Decision-Making"; see Appendix A for a description of each lesson) with implementation ranging from two weeks (one class per day) to seven months (one class per month). Of the 1,372 youth who participated in the program, 1,202 (88%) completed at least 85% of the program.

This study was approved by the University of Georgia Institutional Review Board. Four weeks prior to the program, youth's parents or legal guardians received a Parent Assent-Consent form that informed them of the program's aims and curriculum overview. Parents were provided with an option for non-consent by signing and returning the parent Assent-Consent form. Students enrolled in the program were asked to complete two voluntary surveys provided by the federal funder. The first survey was administered during the first class (Entry survey) and the second survey was administered during the last class (Exit survey). The surveys were anonymous, and measured youth's attitudes and beliefs across various domains that may influence their sexual behavior. Youth who completed the surveys were entered into a drawing to

receive a $50 gift card that was awarded for every one in ten youth. Because the Entry and Exit surveys were anonymous, and hence unable to match, the current study only used data collected from the Exit survey to examine the research questions.

Sample

Of the 1,372 total youth who participated in the program, 464 (34%) were in the 7th grade, 146 (11%) in the 8th grade, and 762 (55%) in the 9th grade. Slightly over half (54%) of the youth were males, and most youth identified as either white (45%) or black (40%). The final sample included 889 youth who completed the Exit survey, representing 72% of the 1,238 youth who attended the last class and 65% of all youth enrolled in the program. Of the 889 youth, 281 (32%) were in the 7th grade, 133 (15%) in the 8th grade, and 475 (53%) in the 9th grade. Similar to the original sample of youth who participated in the program, about half (51%) of the 889 youth in the final sample were male, with 45% of youth identifying as white (45%) and the remaining youth identify as either black (34%) or other (29%). Because the program was implemented across various grade levels at four different schools, ANOVAS and chi square tests comparing the final sample across grade levels showed statistically significant differences based on age (F = 652.16, p <.001), race (X^2 = 245.61, p < .001), and ethnicity (X^2 = 23.78, p < .001); see Table 1 for descriptive statistics and statistically significant differences found.

Measures

The Exit survey asked participants to rate how likely the program influenced their attitudes and intentions related to the variables of interest described below. Participants were prompted with "has being in the program made you more likely, about the same, or less likely to…" and asked to respond to each corresponding item using a 5-point Likert scale: (1) Much More Likely, (2) Somewhat More Likely, (3) About the Same, (4) Somewhat Less Likely, and

(5) Much Less Likely. Below is a brief description of each measure examined in the current study; see Appendix B for additional information on each measure.

Substance Use Avoidance. Six items were used to assess youth's likelihood of avoiding substances, including alcohol, cigarettes, tobacco products, vapor products, marijuana, and prescription drugs. A mean score was computed such that higher scores reflected an increased intention of avoiding substance use (a = .98). See Table B1 in Appendix B for a summary of participant's responses to these variables.

Relationship Skills. Three items were used to assess whether youth felt they improved in their relationship skills. Youth rated their ability to better understand what makes a relationship healthy, think about consequences before making a decision, and manage their emotions in healthy ways. A mean score was computed such that higher scores reflected an increased gaining of relationship skills (a = .75). See Table B2 in Appendix B for a summary of participant's responses to these variables.

Educational Aspirations. Two items were used to assess youth's aspirational attitudes. Youth were asked if being in the program made them more/less likely to make plans to reach their goals and care about doing well in school. A mean score was computed such that higher scores reflected increased aspirational intentions (a = .86). See Table B3 in Appendix B for a summary of participant's responses to these variables.

Resisting Peer Pressure. Two items were used to assess youth's ability to better resist peer pressure. Youth were asked if being in the program made them more/less likely to "resist or say no to someone if they pressure you to participate in acts, such as kissing, touching private parts, or sex" and "talk to a trusted person/adult (for example, a family member, teacher, counselor, coach, etc.) if someone makes you uncomfortable, hurts you, or pressures you to do

things you don't want to do." A mean score was computed such that higher scores reflected an increased likelihood of resisting peer pressure and seeking help (a = .78). See Table B4 in Appendix B for a summary of participant's responses to these variables.

Sexual Delay. Three items were used to assess youth's intensions to delay having sexual intercourse. Youth were asked if being in the program made them more/less likely to plan to delay sexual intercourse until (1) you graduate high school or receive your GED, (2) graduate college or complete another education or training program, and (3) you are married. To better understand variations in youth's intentions to delay sexual intercourse based on timing of the delay, each item was examined as a separate dependent variable. See Table B5 in Appendix B for a summary of participant's responses to these variables.

Program Experience. Five items were used to assess youth's experience in the program. Youth were asked how often during the program they felt (a) interested in the program sessions, (b)the material was clear, (c) the discussion and activities helped them learn, (d) they had a chance to ask questions, and (d) respected as a person. Responses included (1) none, (2) some, (3) most, and (4) all of the time. A mean score was computed such that higher scores reflected a more positive program experience (a = .87). See Table B6 in Appendix B for a summary of participant's responses to these variables.

Analytic Plan

All Exit survey responses were quantitively summarized, paying particular attention to differences in grade, gender, and race. All measured variables were summarized into means and standard deviations (see Table 2). Analyses for demographic differences, measurement frequencies and item reliability testing were conducted using Statistical Package for Social Sciences (SPSS, Version 26). Confirmatory factor analyses were performed to create a latent

construct of overall mechanisms of adolescent risk avoidance. Specifically, we used the mean scores of our observed measures of drug use avoidance, relationship skills, peer pressure resistance, and academic aspirations as factors to load onto a latent construct. Path analysis and moderation testing was done in Mplus (Version 8.00) (Muthén & Muthén, 1998–2018). As each youth's intentions of sexual delay was added at each timing (i.e., after high school, college, marriage) as an outcome, chi-square difference tests were used to assess significant model change, with the outcomes of sexual delay being allowed to covary. Lastly, moderation testing on each of these pathways included two dichotomous variables: gender (0 = female; 1 = male) and program experience. Program experience was dichotomized because preliminary analysis showed that scores were significantly skewed (skewness = -.96) towards a more positive experience. In order to capture variability between a more positive experience and a less positive experience, we used descriptive statistics to identify meaningful cutoff scores. Scores below 3.0 were coded (0) "less positive" and scores of 3.0 or higher were coded (1) "more positive."

CHAPTER 3

RESULTS

Preliminary analyses were conducted to examine the variations and associations among the dependent and independent variables. As summarized in Table 2, on average, youth reported positively on perceived changes on all mechanisms of risk avoidance measures. Specifically, youth reported that following participation in the program they were more likely to avoid substance use (M = 3.5), have greater relationship skills (M = 4.0) and educational aspirations (M = 4.2), and were more likely to resist peer pressure (M = 4.1). As well, youth were, on average, "somewhat more likely" to plan to delay having sexual intercourse until after graduating high school (M = 3.8), graduating college (M = 3.7), and until marriage (M = 3.5). A series of Multivariate Analysis of Variance (MANOVAs) tests revealed a few statistically significant differences across the dependent and independent variables by sex ($F = 2.23$, $p < .05$), grade ($F = 2.17$, $p = .005$), and race ($F = 3.32$, $p =<.001$.) (see Table 2). For gender, three statistically significant difference were found: on average, compared to males, females reported the program helped them feel more likely to resist peer pressure ($F = 4.95$, $p <.05$), and they were more likely to plan to delay sexual intercourse until after high school ($F = 8.32$, $p <.05$) and college ($F = 5.07$, $p < .05$). Similarly, one statistically significant difference by race was found, with black youth reporting that they were more likely to have higher educational aspirations compared to white and other youth ($F = 11.81$, $p <.001$.). Regarding grade, compared to those in the 7th and 9th grade, youth in the 8th grade reported that following the program they were more likely to

avoid substance use ($F = 3.68$). Also, on average, 7th and 8th grade youth reported caring more about doing well in school compared to 9th grade youth ($F = 5.28$, $p = .005$).

Regarding youths' program experience, on average, youth reported positive experiences "most of the time" (M = 3.19; SD = .77). The majority of youth (70.5%; n= 796) reported a more positive experience (mean score of 3.0 or greater) while 30% reported a less positive experience (mean score below 3.0). As summarized in Table 2, statistically significant differences were found based on youth's program experience, with those reporting a more positive experience, on average, yielding higher scores across all dependent and independent variables.

Next, bivariate correlations between the independent and dependent variables were examined. As summarized in Table 3, all three dependent measures were highly correlated to each other, suggesting that youth who reported intentions of sexual delay until one milestone (e.g., high school graduation) were more likely to also report intentions to delay having sexual intercourse until later milestones (e.g., marriage). Additionally, all indicators of adolescents' mechanisms of risk avoidance were positively and significantly correlated with each other as well as with each indicator of sexual delay intentions. The intercorrelation among our independent observed variables (e.g., drug use avoidance, relationship skills, peer pressure resistance, academic aspirations) provided evidence that a latent construct could be estimated. Confirmatory factor analysis (CFA) was conducted to estimate a latent construct of *mechanisms of risk avoidance* (see *Figure 1*). As shown in *Figure 1*, the CFA results revealed adolescents' mechanisms of risk avoidance functioning as a latent construct, with factor loadings of observed variables all above .80 and an appropriate fit of the model (CFI = .96, RMSEA = .10).

Lastly, path analysis and moderation testing were conducted. We controlled for the effects of race and grade on our dependent variables and our mechanisms of risk avoidance latent

construct. ANOVAs also revealed significant differences between sex and program experience across both independent and dependent observed variables. To account for possible interactions when estimating regression pathways, sex and program experience simple slope differences were tested via moderation testing. In *Figure 2*, significant association is shown from adolescents' reports on mechanisms of risk avoidance and all three outcomes of sexual delay. Specifically, we found that higher values of the mechanisms of risk avoidance latent construct were significantly associated with adolescents' intentions to delay sex until after graduating high school, graduating college, and until marriage. These outcomes were also allowed to covary, with significant covariance reinforcing that many participants rated their intention to delay similarly across dimensions. Lastly, moderation tests on these three regression pathways revealed neither sex nor program experience significantly amplified or compressed how adolescents' mechanisms of risk avoidance attitudes/beliefs were associated with their intent to delay sexual intercourse (see Figure 2).

CHAPTER 4

DISCUSSION

The current study aimed to further inform educational efforts to delay adolescents' sexual initiation, and hence curb teen pregnancy and STI rates through YRE programs. Specifically, this study measured how following participation in the RS+ program, youth's perceived changes on various attitudes and beliefs indicative of mechanisms of risk avoidance were associated with their intentions of sexual delay until after graduating high school, college, and until marriage. Overall, the analyses demonstrated that youth's scores on four mechanisms of risk avoidance measures (i.e., likelihood to avoid drugs, gained relationship and emotional skills, ability to resist peer pressure, educational aspirations) were highly correlated to each other, and improvements in mechanisms of risk avoidance were strongly associated with youth's intentions to delay sexual intercourse until after high school, college, and marriage.

Our analyses revealed that youth who reported being more likely to avoid using drugs and alcohol following participation in the RS+ program were significantly more likely to report greater intentions of sexual delay until after graduating high school, college and until they are married. This is consistent with previous research that underscores the strong association between reported substance use and risky sexual behaviors (e.g., sexual intercourse under the influence, unprotected intercourse) (Oshri et al., 2012) and teen pregnancy (Helfrich & McWey, 2014; O'Donnell et al., 2010). Notably, the findings reveal that following the program both male and female youth reported a similarly positive change on their attitudes towards avoiding

substance use. This is an encouraging finding, given the similarities between male and female substance use patterns during adolescence (Peiper et al., 2016).

Overall, youth's average on their gained relationship skills following the program was high (M = 4.0) and this was associated with their reported intentions of sexual delay. This is consistent with prior findings suggesting that YRE teaches youth to have more realistic relationship beliefs (Kerpelman et al., 2009; McElwain et al., 2017) and promotes youth's romantic relationship efficacy (Futris et al., 2017). Analysis revealed no significant demographic differences across the relationship skills measure, which may suggest that all youth similarly benefitted from relationship knowledge provided by the program.

Prior studies show that YRE programs often have an overall greater influence on female and black youth (Futris et al., 2017; Kerpelman et al., 2009). Although the current results did not show significant differences by race or gender on the relationship skills measure, there were, however, demographic differences across other mechanisms of risk avoidance and sexual delay outcomes, including youth's intentions to delay sexual intercourse, their academic aspirations, and their ability to resist peer pressure. Specifically, female youth were more likely to report greater intentions to delay sex until after high school and college, and a greater ability to resist peer pressure compared to male youth. Regarding race, black youth were more likely to report higher academic aspirations, compared to their white counterparts. Overall, these findings provide promising support for previously documented demographic differences across YRE outcomes and it's particular positive impact on more vulnerable youth (Antle et al., 2011; Morrison et al., 2018).

While considering the demographic differences, it is important to note that youth on average, regardless of their race or gender, still reported positive perceived changes across

academic aspirations, and their ability to resist peer pressure. These findings are important for several reasons. First, considering the strong association between early sexual activity and poor adamic achievement (Santelli et al., 2004; Zimmer-Gembeck & Helfand, 2008; Bradley & Greene, 2013; Devine et al., 1993; Schvaneveldt et al., 2001; Miller & Sneesby, 1988), this study provides support that YRE may be help promote positive changes on future goals and academic aspirations, which in turn, is associated with greater intentions of sexual delay. Second, our findings reinforce that YRE helps youth improve their communication and conflict-resolution skills (Kerpelman et al., 2009), and as a result, helps youth feel efficacious in resisting peer pressure. This is particularly important during adolescence due to the strong association between peer pressure and various risky behaviors such as substance use and permissive sexual attitudes (Gardner & Steinberg, 2005; Santor et al., 2000).

Regarding sexual delay intentions, youth's average scores were on the higher end for all three sexual delay timings following participation in the program. The mean scores between delay timings gradually decreased, with delay until after graduating high school being the highest average (M=3.85), followed by delay until after college (M=3.75), and delay until marriage (M=3.61), respectively. However, these differences were not statistically significant, suggesting that the YRE program may have had a similar influence on youth's intentions to delay sexual intercourse at all three future milestones in their life. This is important because youth's aspiration to live in a sequence that promotes success through attaining personal goals and growth prior to family formation (also termed the "success sequence"), has been found to have a negative association with teen pregnancy (r = -.14, p <.001) (Barbee et al., 2023). Notably, females reported higher intentions of sexual delay than males, which may be because females are likely

to demonstrate greater change regarding sexual attitudes following YRE programs than males (Morrison et al., 2018).

Last, while exploring the influence of youth's sex and reported program experience as a potential moderator on the association between mechnaisms of risk avoidance and each sexual delay outcome, we found no significant results. This was suprising, considering the robust support for sex differences on various risky behaviors, such as males initiating sex earlier than females (Ramirez-Valles et al., 2002; Santelli et al., 2004; Zimmer-Gembeck & Helfand, 2008), and females' likelihood to demonstrate greater change on their attitudes regarding sex following participating in YRE programs (Morrison et al., 2018). Regarding program experience, social learning theory (Bandura, 1997) suggests that the social context of youths' experiences is consequential to their learning outcomes. Notably, consistent with previous studies (Antle et al., 2011; Huntington et al., 2022), most youths in the current study rated their program experience positively. As expected, those who reported their program experience as more positive were more likely to report greater perceived change across all of our adolescent mechanism of risk avoidance measures as well as the three sexual delay indicators. However, program experience was not found to be a significant moderator on the association between risk avoidance mechanisms and sexual delay. This may suggest that youth may equally benefit from the program regardless of having a positive or less positive experience. Future studies should further explore how personal experience in the program and participant sex may influence specific risk avoidance mechanisms that are associated with delayed intentions of sexual intercourse.

Limitations and Future Research

There were several limitations in this study. First, the current study draws data from a convenience sample of youth enrolled in a federally-funded project, and thus the generalizability

of our findings is limited. Similarly, because there was no control group utilized, inferences of causation and program effects can not be made. Considering the lack of literature on how YRE programs influence youth's attitutes and beliefs towards risky behaviors and its influence on sexual delay intentions, this study still makes an important contribution to the field. Future work should explore the influence of YRE programs on sexual delay intentions in a randomized controlled trial (RCT) in order to receive higher validity on the program's influence on youth's attitudes and beliefs across various mechanisms of risk avoidance measures.

Second, the surveys were completed anonymously and, hence, we were unable to match youth's pre- and post-survey responses. As such, the current analyses were limited to using data collected from post program surveys. This limited our ability to compare youth's individual changes from pre- to post-program and measure the exact degree of change, thus limiting our ability to conclude true influence from the program. Relatedly, another specific survey limitation is the response option of "about the same" when asked whether being in the program influenced their beliefs/attitudes across the various measurement items. Hence, we were unable to ascertain what youth's reports were across the measures before the program which challeneges the meaning and ambiguity of their response of "about the same" on the post-program survey. For example, if youth reporting that they understood what makes a relationship healthy prior to the program, then their response of "about the same" after the program would imply positive effects such that they still understand (e.g., "ceiling effect"), where as if they did not understand prior the program, "about the same" on the post-survey would imply no positive improvements. Future studies should aim to compare how youth's attitudes and responses change before and after the program, and have survey response options that conclusions can be more easily drawn from.

Last, the data that was available for the current study provided limited information regarding the personal characteristics of the participatin youth (i.e., sex, race, age, grade). For instance, the survey did not ask youth about previous dating or sexual experience, which can influence how much their attitudes and beleifs can change regarding sexual delay (Morrison et al., 2018) and relationship skills (Futris et al., 2017). Other family-related characteristics that were not collected, but have been found to be associated with sexual risk outcomes include, for example, parental involvement (e.g., relationship quality) (Pearson et al., 2006), parental relationship status, education, and income (Harris et al., 2002; Ramirez-Valles et al., 2002). Lastly, our demographic measures of race and grade were biased due to sampling conditions. Program sites were at the county level, which has different race demographics, and the program was only implemented in certain grades within certain counties. For example, the program was implemented to only 9th graders in a predominantly white county, compared to 7th and 8th graders in a predominantly black county. Hence, our demographic findings should be taken cautiously. Work in the future should carefully examine race differences in an RCT trial, and should further explore how personal charactersitiscs such as dating experience influence degree of change from before and after the program.

Implications for Practice

Thsese results have implications for future YRE programming aimed at delaying youth's intentions of to initiate sex and reducing teen pregnancy and STI rates. Through teaching youth important relationship skills, communication strategies, and self growth values, youth learn to aspire for a more successful life sequence of prioritizing self growth prior to family formation. While sex education programs primarly focus on teaching youth about anatomy and contreception (Franklin & Corcoran, 2000; Kirby, 2008), they tend to minimize relationship

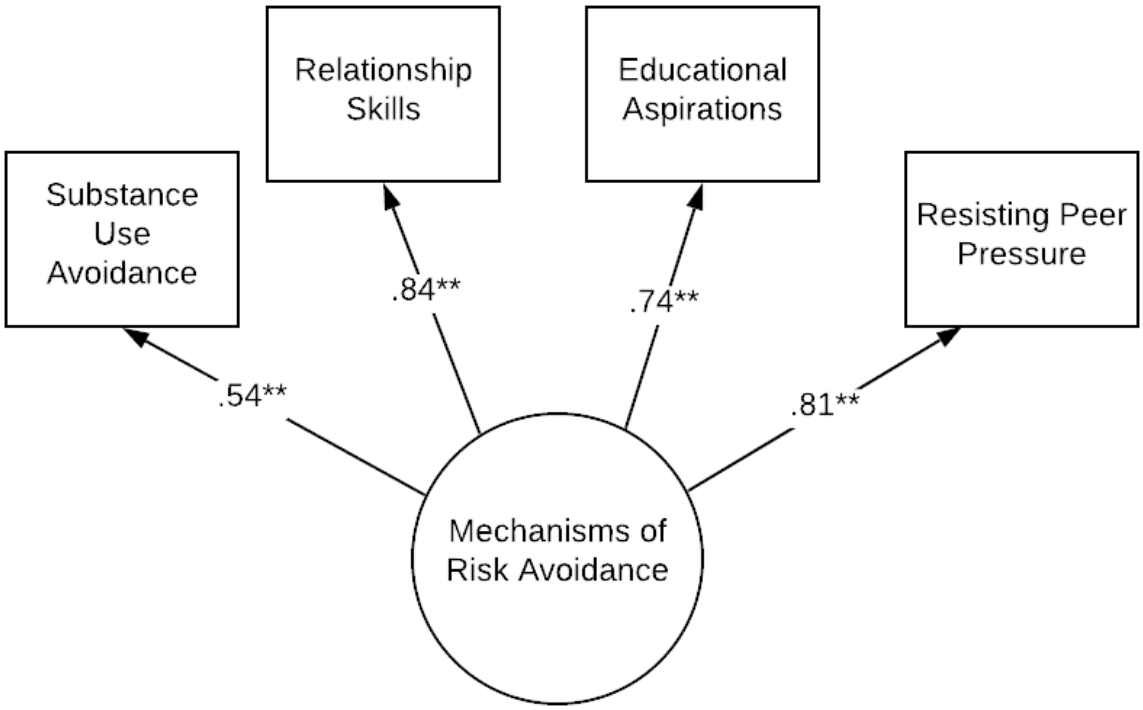
skills and the value of achieving other life goals before having sex and starting a family (Weissbourd et al., 2013). The findings from the current study suggest that YRE may positively influence youth's overall substance use avoidance attitudes, relationship and emotional skills, ability to resist peer pressure, and their academic aspirations, and highlights the interconnectedness of these attitudes/beleifs and their importance on influencing youth's intentions of sexual delay. Through equipping youth with the necessary tools on how to build and maintian positive reatiosnhips, youth as a result, make better overall choices, and are at lower risk for experiencing a teen pregnancy or STIs (Kerpelman et al., 2009; McElwain et al., 2017; Barbee et al., 2023). Noteably, this study was based on data collected from youth in schools, but there may also be value in collaborating between schools and communities. By implementing this currciulum outside of a school context, youth can apply the skills learned and reinforce these values and messages in other environments. Importantly, this study may also serve to iform policy makers on the importance of integrating YRE curriculum into school-based programming due to its positive outcomes.

Conclusion

The current study explored how YRE may influence youth's attitudes and beliefs towards various mechanisms of risk avoidance behaviors and relationship skills, which were found to be associated with youth's intentions to delay sexual intercourse. Our SEM model is a promising preliminary suggestion that the adolescents' mechanisms of risk avoidance latent construct is strongly associated with youth's reports of sexual delay. This study provides continued support for the importance and potential benefits of YRE, and its positive influence on various mechanism of risk avoidance outcomes which are associated with sexual delay intentions.

Figure 1.

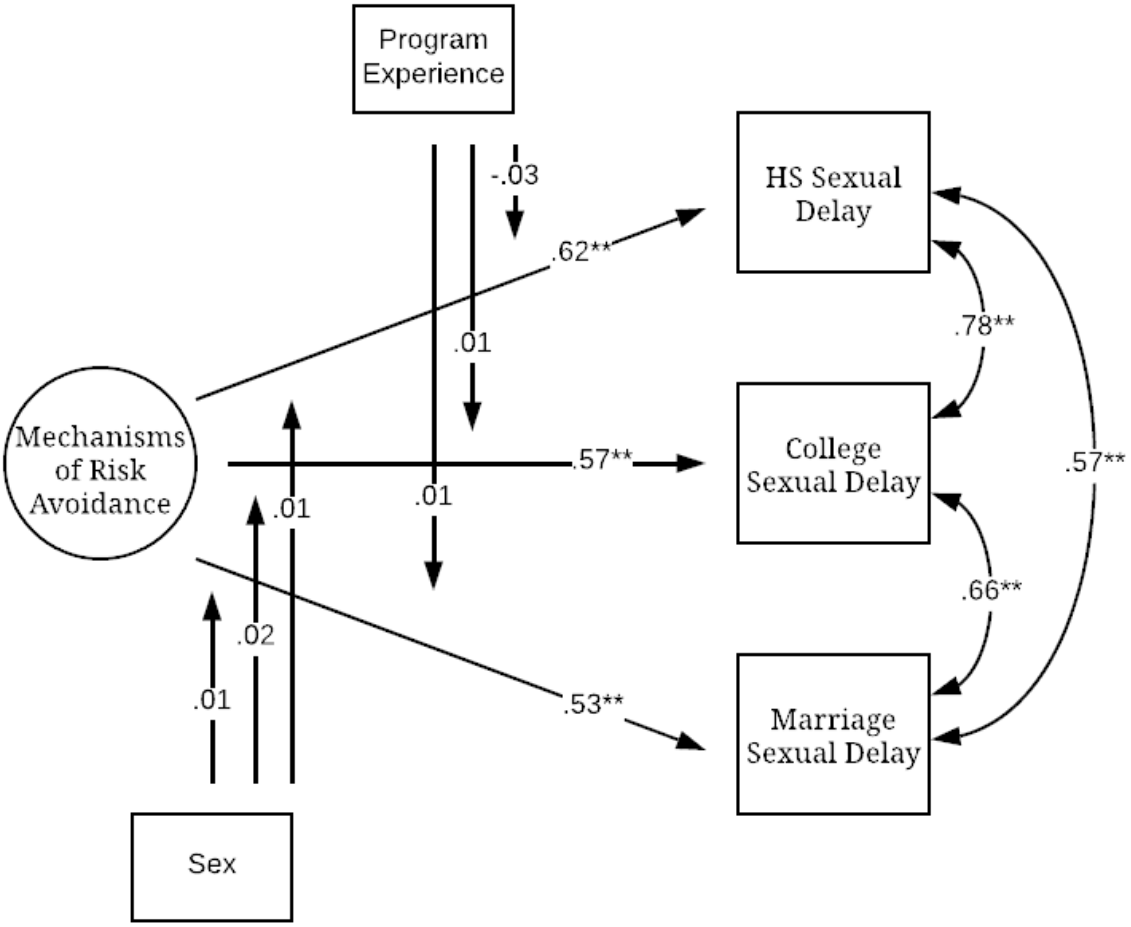
Confirmatory Factor Analysis of Adolescents' Mechanisms of Risk Avoidance Latent Construct



Note. $*p < .05$*; *$*p < .01$*; Chi-Square* = 9.86 (p = .01) , *CFI* = .99, *RMSEA* = .10

Figure 2.

SEM Model of Adolescents' Mechanisms of Risk Avoidance on Intentions of Sexual Delay



Note. Model controls for race and grade on mechanisms of risk avoidance and each sexual delay outcome. *Chi-Square* = 29.86 (*p* = .00); *CFI* = .96, *RMSEA* = .08

*$p < .05$; **$p < .01$

Table 1

Demographic Characteristics of Exit Survey Respondents by Grade

Demographic Characteristic	Total (n = 889)	7th Grade (n = 281)	8th Grade (n=133)	9th Grade (n=475)	*F* ratio / X^2 value
Sex					0.21
Male	452 (51.4)	145 (52.3)	66 (50.0)	241 (51.3)	
Female	427 (48.6)	132 (47.7)	66 (50.0)	229 (48.7)	
Missing	10	4	1	5	
Age					
M (SD)	13.8 (0.84)	12.9 (0.54)	13.8 (0.57)	14.3 (0.52)	652.16***
12	59 (6.7)	59 (21.5)	0	0	
13	234 (26.7)	196 (71.3)	35 (26.3)	3 (0.6)	
14	422 (48.1)	18 (6.5)	86 (64.7)	318 (67.7)	
15	157 (17.9)	2 (0.7)	12 (9.0)	143 (30.4)	
16-17	6 (0.7)	0	0	6 (1.3)	
Missing	11	6		5	
Race					245.61***
White	393 (47.5)	52 (6.30)	62 (7.5)	279 (33.7)	
Black	301 (36.4)	199 (24.0)	35 (4.2)	67 (8.1)	
Other	134 (16.2)	21 (2.5)	22 (2.7)	91 (11.0)	
Missing			4		
Hispanic (yes)	138 (15.7)	19 (6.9)	24 (18.0)	95 (20.0)	23.78***
Missing	9	5	2	2	

Note. n (valid percent) reported. *p < .05; **p < .01; ***p < .001

Table 2

Variations in Youth's Mechanisms of Risk Avoidance and Sexual Delay Intentions by Sex, Race, Grade, and Program Experience

	Drug Use	Relationship Skills	Peer Pressure	Academic Aspirations	Sexual Delay Until		
					HS	College	Marriage
Total	3.51 (1.56)	4.03 (.97)	4.12 (1.10)	4.27 (.99)	3.84 (1.37)	3.75 (1.35)	3.59 (1.41)
Sex							
Male	3.50 (1.61)	4.05 (1.03)	4.04 (1.14)	4.25 (1.05)	3.70 (1.45)	3.65 (1.42)	3.54 (1.44)
Female	3.62 (1.51)	4.06 (0.92)	4.22 (1.03)	4.32 (.88)	3.99 (1.27)	3.87 (1.27)	3.69 (1.35)
F ratio	1.03	.03	4.95*	1.14	8.32**	5.07*	2.28
Race							
White	3.57 (1.51)	4.06 (.91)	4.17 (1.0)	4.16 (.96)	3.89 (1.29)	3.82 (1.25)	3.66 (1.33)
Black	3.42 (1.65)	4.09 (1.02)	4.16 (1.19)	4.52 (.90)	3.82 (1.48)	3.67 (1.52)	3.50 (1.55)
Other	3.53 (1.56)	3.88 (1.06)	3.90 (1.17)	4.11 (1.14)	3.72 (1.40)	3.71 (1.28)	3.59 (1.39)
F ratio	.64	1.88	2.66	11.81***	.76	.99	.85
Grade							
7th Grade	3.45 (1.61)	4.02 (1.00)	4.11 (1.20)	4.44 (.92)	3.87 (1.46)	3.76 (1.46)	3.64 (1.51)
8th Grade	3.90 (1.42)	4.09 (0.88)	4.26 (.92)	4.32 (.94)	4.00 (1.22)	3.92 (1.21)	3.79 (1.31)
9th Grade	3.51 (1.56)	4.06 (.98)	4.11 (1.07)	4.19 (0.99)	3.79 (1.35)	3.71 (1.32)	3.57 (1.37)
F ratio	3.68*	0.27	.91	5.28*	1.05	1.09	1.23
Program Experience							
More Positive	3.77 (1.53)	4.30 (.82)	4.41 (.88)	4.49 (.78)	4.10 (1.26)	3.97 (1.29)	3.81 (1.37)
Less Positive	3.02 (1.51)	3.43 (1.05)	3.45 (1.23)	3.75 (1.17)	3.23 (1.42)	3.23 (1.35)	3.16 (1.38)
F ratio	38.98***	149.48***	145.53***	104.50***	70.54***	50.49***	35.53***

Note. Mean (standard deviations) reported. *p < .05; **p < .01; ***p < .001

Table 3

Correlation Table of All Variables in SEM Model

Variable	1	2	3	4	5	6	7	8	9	10
1. Drug Avoidance	-									
2. Relationship Skills	.47**	-								
3. Peer Pressure Avoidance	.40**	.67**	-							
4. Academic Aspirations	.25**	.58**	.62**	-						
5. Delay until after HS	.30**	.49**	.51**	.42**	-					
6. Delay until After College	.32**	.48**	.51**	.42**	.86**	-				
7. Delay until Marriage	.26**	.43**	.45**	.39**	.69**	.76**	-			
8. Race	-0.03	-0.03	-0.05	0.06	0.00	-0.0	0.00	-		
9. Grade	0.02	0.02	-0.00	.11**	-0.03	-0.02	-0.02	.15**	-	
10. Sex	-0.04	-0.01	-.09*	-0.05	.11**	.09**	-0.06	-0.03	-0.01	-
11. Program Experience	.22**	.39**	.39**	.33**	.28**	.25**	.21**	-.07*	0.04	-.07*

Note. *p < .05; **p < .01; ***p < .001

REFERENCES

Adler-Baeder, F., Kerpelman, J. L., Schramm, D. G., Higginbotham, B., & Paulk, A. (2007). The Impact of Relationship Education on Adolescents of Diverse Backgrounds. *Family Relations, 56*(3), 291–303. https://doi.org/10.1111/j.1741-3729.2007.00460.x

Antle, B. F., Sullivan, D. J., Dryden, A., Karam, E. A., & Barbee, A. P. (2011). Healthy relationship education for dating violence prevention among high-risk youth. *Children and Youth Services Review, 33*(1), 173–179. https://doi.org/10.1016/j.childyouth.2010.08.031

Assini-Meytin, L. C., & Green, K. M. (2015). Long-Term Consequences of Adolescent Parenthood Among African-American Urban Youth: A Propensity Score Matching Approach. *Journal of Adolescent Health, 56*(5), 529–535. https://doi.org/10.1016/j.jadohealth.2015.01.005

Baiden, P., Panisch, L. S., Kim, Y. J., LaBrenz, C. A., Kim, Y., & Onyeaka, H. K. (2021). Association between First Sexual Intercourse and Sexual Violence Victimization, Symptoms of Depression, and Suicidal Behaviors among Adolescents in the United States: Findings from 2017 and 2019 National Youth Risk Behavior Survey. *International Journal of Environmental Research and Public Health, 18*(15), 7922. https://doi.org/10.3390/ijerph18157922

Barbee, A. P., Cunningham, M. R., Antle, B. F., & Langley, C. N. (2023). Impact of a relationship-based intervention, Love Notes, on teen pregnancy prevention. *Family Relations, 72*(5), 2569–2588. https://doi.org/10.1111/fare.12798

Baumer, E. P., & South, S. J. (2001). Community Effects on Youth Sexual Activity. *Journal of Marriage and Family*, *63*(2), 540–554. https://doi.org/10.1111/j.1741-3737.2001.00540.x

Bordogna, A. L., Coyle, A. C., Nallamothu, R., Manko, A. L., & Yen, R. W. (2023). Comprehensive Sexuality Education to Reduce Pregnancy and STIs in Adolescents in the United States: A Systematic Review and Meta-Analysis. *American Journal of Sexuality Education*, *18*(1), 39–83. https://doi.org/10.1080/15546128.2022.2080140

Bradley, B. J., & Greene, A. C. (2013). Do Health and Education Agencies in the United States Share Responsibility for Academic Achievement and Health? A Review of 25 Years of Evidence About the Relationship of Adolescents' Academic Achievement and Health Behaviors. *Journal of Adolescent Health*, *52*(5), 523–532. https://doi.org/10.1016/j.jadohealth.2013.01.008

Buhi, E. R., & Goodson, P. (2007). Predictors of Adolescent Sexual Behavior and Intention: A Theory-Guided Systematic Review. *Journal of Adolescent Health*, *40*(1), 4–21. https://doi.org/10.1016/j.jadohealth.2006.09.027

Chin, H. B., Sipe, T. A., Elder, R., Mercer, S. L., Chattopadhyay, S. K., Jacob, V., Wethington, H. R., Kirby, D., Elliston, D. B., Griffith, M., Chuke, S. O., Briss, S. C., Ericksen, I., Galbraith, J. S., Herbst, J. H., Johnson, R. L., Kraft, J. M., Noar, S. M., Romero, L. M., & Santelli, J. (2012). The Effectiveness of Group-Based Comprehensive Risk-Reduction and Abstinence Education Interventions to Prevent or Reduce the Risk of Adolescent Pregnancy, Human Immunodeficiency Virus, and Sexually Transmitted Infections. *American Journal of Preventive Medicine*, *42*(3), 272–294. https://doi.org/10.1016/j.amepre.2011.11.006

Collins, W. A. (2003). More than Myth: The Developmental Significance of Romantic Relationships During Adolescence. *Journal of Research on Adolescence*, *13*(1), 1–24. https://doi.org/10.1111/1532-7795.1301001

Connolly, J., Friedlander, L., Pepler, D., Craig, W., & Laporte, L. (2010). The Ecology of Adolescent Dating Aggression: Attitudes, Relationships, Media Use, and Socio-Demographic Risk Factors. *Journal of Aggression, Maltreatment & Trauma*, *19*(5), 469–491. https://doi.org/10.1080/10926771.2010.495028

Cooper, M. L., Wood, P. K., Orcutt, H. K., & Albino, A. (2003). Personality and the predisposition to engage in risky or problem behaviors during adolescence. *Journal of Personality and Social Psychology*, *84*(2), 390–410. https://doi.org/10.1037/0022-3514.84.2.390

Devine, D., Long, P., & Forehand, R. (1993). A prospective study of adolescent sexual activity: Description, correlates, and predictors. *Advances in Behaviour Research and Therapy*, *15*(3), 185–209. https://doi.org/10.1016/0146-6402(93)90016-U

DiCenso, A., Borthwick, V. W., Busca, C. A., Creatura, C., Holmes, J. A., Kalagian, W. F., & Partington, B. M. (2001). Completing the Picture: Adolescents Talk About What's Missing in Sexual Health Services. *Canadian Journal of Public Health*, *92*(1), 35–38. https://doi.org/10.1007/BF03404840

Driscoll, A. (2014). Adult outcomes of teen mothers across birth cohorts. *Demographic Research*, *30*, 1277–1292. https://doi.org/10.4054/DemRes.2014.30.44

Foulkes, L., Leung, J. T., Fuhrmann, D., Knoll, L. J., & Blakemore, S. (2018). Age differences in the prosocial influence effect. *Developmental Science*, *21*(6), e12666. https://doi.org/10.1111/desc.12666

Fox, A. M., Himmelstein, G., Khalid, H., & Howell, E. A. (2019). Funding for Abstinence-Only Education and Adolescent Pregnancy Prevention: Does State Ideology Affect Outcomes? *American Journal of Public Health*, *109*(3), 497–504. https://doi.org/10.2105/AJPH.2018.304896

Franklin, C., & Corcoran, J. (2000). Preventing Adolescent Pregnancy: A Review of Programs and Practices. *Social Work*, *45*(1), 40–52. https://doi.org/10.1093/sw/45.1.40

French, D. C., & Dishion, T. J. (2003). Predictors of Early Initiation of Sexual Intercourse among High-Risk Adolescents. *The Journal of Early Adolescence*, *23*(3), 295–315. https://doi.org/10.1177/0272431603254171

Futris, T. G., Sutton, T. E., & Duncan, J. C. (2017). Factors Associated with Romantic Relationship Self-Efficacy Following Youth-Focused Relationship Education. *Family Relations*, *66*(5), 777–793. https://doi.org/10.1111/fare.12288

Gardner, M., & Steinberg, L. (2005). Peer Influence on Risk Taking, Risk Preference, and Risky Decision Making in Adolescence and Adulthood: An Experimental Study. *Developmental Psychology*, *41*(4), 625–635. https://doi.org/10.1037/0012-1649.41.4.625

Gonzalez Avilés, T., Finn, C., & Neyer, F. J. (2021). Patterns of Romantic Relationship Experiences and Psychosocial Adjustment From Adolescence to Young Adulthood. *Journal of Youth and Adolescence*, *50*(3), 550–562. https://doi.org/10.1007/s10964-020-01350-7

Halpern-Meekin, S. (2011). High School Relationship and Marriage Education: A Comparison of Mandated and Self-Selected Treatment. *Journal of Family Issues*, *32*(3), 394–419. https://doi.org/10.1177/0192513X10383944

Harris, K. M., Duncan, G. J., & Boisjoly, J. (2002). Evaluating the Role of "Nothing to Lose" Attitudes on Risky Behavior in Adolescence. *Social Forces*, *80*(3), 1005–1039. https://doi.org/10.1353/sof.2002.0008

Hawkins, A. J. (2018). Shifting the Relationship Education Field to Prioritize Youth Relationship Education. *Journal of Couple & Relationship Therapy*, *17*(3), 165–180. https://doi.org/10.1080/15332691.2017.1341355

Helfrich, C. M., & McWey, L. M. (2014). Substance Use and Delinquency: High-Risk Behaviors as Predictors of Teen Pregnancy Among Adolescents Involved With the Child Welfare System. *Journal of Family Issues*, *35*(10), 1322–1338. https://doi.org/10.1177/0192513X13478917

Hessler, D. M., & Katz, L. F. (2010). Brief report: Associations between emotional competence and adolescent risky behavior. *Journal of Adolescence*, *33*(1), 241–246. https://doi.org/10.1016/j.adolescence.2009.04.007

Hobcraft, J., & Kiernan, K. (2001). Childhood poverty, early motherhood and adult social exclusion. *The British Journal of Sociology*, *52*(3), 495–517. https://doi.org/10.1080/00071310120071151

Houck, C. D., Barker, D. H., Hadley, W., Menefee, M., & Brown, L. K. (2018). Sexual Risk Outcomes of an Emotion Regulation Intervention for At-Risk Early Adolescents. *Pediatrics*, *141*(6), e20172525. https://doi.org/10.1542/peds.2017-2525

Huntington, C., Owen, J., Stanley, S., Knopp, K., & Rhoades, G. (2022). Impact and implementation findings from a cluster randomized trial of a youth relationship education curriculum. *Family Process*, *61*(3), 1062–1079. https://doi.org/10.1111/famp.12734

Janssens, A., Blake, S., Allwood, M., Ewing, J., & Barlow, A. (2020). Exploring the content and delivery of relationship skills education programmes for adolescents: A systematic review. *Sex Education*, *20*(5), 494–516. https://doi.org/10.1080/14681811.2019.1697661

Joyner, K., & Udry, J. R. (2000). You Don't Bring Me Anything but Down: Adolescent Romance and Depression. *Journal of Health and Social Behavior*, *41*(4), 369. https://doi.org/10.2307/2676292

Kaestle, C. E. (2005). Young Age at First Sexual Intercourse and Sexually Transmitted Infections in Adolescents and Young Adults. *American Journal of Epidemiology*, *161*(8), 774–780. https://doi.org/10.1093/aje/kwi095

Kerpelman, J. L., Pittman, J. F., Adler-Baeder, F., Eryigit, S., & Paulk, A. (2009). Evaluation of a statewide youth-focused relationships education curriculum ☆, ☆☆. *Journal of Adolescence*, *32*(6), 1359–1370. https://doi.org/10.1016/j.adolescence.2009.04.006

Kirby, D. B. (2008). The impact of abstinence and comprehensive sex and STD/HIV education programs on adolescent sexual behavior. *Sexuality Research and Social Policy*, *5*(3), 18–27. https://doi.org/10.1525/srsp.2008.5.3.18

Lameiras-Fernández, M., Martínez-Román, R., Carrera-Fernández, M. V., & Rodríguez-Castro, Y. (2021). Sex Education in the Spotlight: What Is Working? Systematic Review. *International Journal of Environmental Research and Public Health*, *18*(5), 2555. https://doi.org/10.3390/ijerph18052555

Lando-King, E., McRee, A.-L., Gower, A. L., Shlafer, R. J., McMorris, B. J., Pettingell, S., & Sieving, R. E. (2015). Relationships Between Social-Emotional Intelligence and Sexual Risk Behaviors in Adolescent Girls. *The Journal of Sex Research*, *52*(7), 835–840. https://doi.org/10.1080/00224499.2014.976782

Ma, Y., Pittman, J. F., Kerpelman, J. L., & Adler-Baeder, F. (2014). Relationship Education and Classroom Climate Impact on Adolescents' Standards for Partners/Relationships. *Family Relations*, *63*(4), 453–468. https://doi.org/10.1111/fare.12084

Magnusson, B. M., Crandall, A., & Evans, K. (2019). Early sexual debut and risky sex in young adults: The role of low self-control. *BMC Public Health*, *19*(1), 1483. https://doi.org/10.1186/s12889-019-7734-9

Martinez, G. M., & Abma, J. C. (2020). Sexual Activity and Contraceptive Use Among Teenagers Aged 15-19 in the United States, 2015-2017. *NCHS Data Brief*, *366*, 1–8.

McElwain, A., McGill, J., & Savasuk-Luxton, R. (2017). Youth relationship education: A meta-analysis. *Children and Youth Services Review*, *82*, 499–507. https://doi.org/10.1016/j.childyouth.2017.09.036

Miller, B. C., & Sneesby, K. R. (1988). Educational correlates of adolescents' sexual attitudes and behavior. *Journal of Youth and Adolescence*, *17*(6), 521–530. https://doi.org/10.1007/BF01537829

Montgomery, M. J. (2005). Psychosocial Intimacy and Identity: From Early Adolescence to Emerging Adulthood. *Journal of Adolescent Research*, *20*(3), 346–374. https://doi.org/10.1177/0743558404273118

Morrison, S. U., Adler-Baeder, F., Bub, K. L., & Duke, A. (2018). Contextualizing Relationship Education and Adolescent Attitude Toward Sexual Behavior: Considering Class Climate. *Child & Youth Care Forum*, *47*(1), 133–150. https://doi.org/10.1007/s10566-017-9423-0

National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention (U.S.). Division of STD Prevention. (2019). *Sexually transmitted disease surveillance 2018*. CDC. https://doi.org/10.15620/cdc.79370

O'Donnell, L., Myint-U, A., Duran, R., & Stueve, A. (2010). Especially for Daughters: Parent Education to Address Alcohol and Sex-Related Risk Taking Among Urban Young Adolescent Girls. *Health Promotion Practice*, *11*(3_suppl), 70S-78S. https://doi.org/10.1177/1524839909355517

Oshri, A., Tubman, J. G., & Burnette, M. L. (2012). Childhood Maltreatment Histories, Alcohol and Other Drug Use Symptoms, and Sexual Risk Behavior in a Treatment Sample of Adolescents. *American Journal of Public Health*, *102*(S2), S250–S257. https://doi.org/10.2105/AJPH.2011.300628

Osterman, M., Hamilton, B., Martin, J. A., Driscoll, A. K., & Valenzuela, C. P. (2021). Births: Final Data for 2020. *National Vital Statistics Reports: From the Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System*, *70*(17), 1–50.

Pearson, J., Muller, C., & Frisco, M. L. (2006). Parental Involvement, Family Structure, and Adolescent Sexual Decision Making. *Sociological Perspectives*, *49*(1), 67–90. https://doi.org/10.1525/sop.2006.49.1.67

Peiper, N. C., Ridenour, T. A., Hochwalt, B., & Coyne-Beasley, T. (2016). Overview on Prevalence and Recent Trends in Adolescent Substance Use and Abuse. *Child and Adolescent Psychiatric Clinics of North America*, *25*(3), 349–365. https://doi.org/10.1016/j.chc.2016.03.005

Raffaelli, M., & Crockett, L. J. (2003). Sexual Risk Taking in Adolescence: The Role of Self-Regulation and Attraction to Risk. *Developmental Psychology*, *39*(6), 1036–1046. https://doi.org/10.1037/0012-1649.39.6.1036

Ramirez-Valles, J., Zimmerman, M. A., & Juarez, L. (2002). Gender Differences of Neighborhood and Social Control Processes: A Study of the Timing of First Intercourse among Low-achieving, Urban, African American Youth. *Youth & Society*, *33*(3), 418–441. https://doi.org/10.1177/0044118X02033003004

Rice, T. M., McGill, J., & Adler-Baeder, F. (2017). Relationship Education for Youth in High School: Preliminary Evidence from a Non-controlled Study on Dating Behavior and Parent–Adolescent Relationships. *Child & Youth Care Forum*, *46*(1), 51–68. https://doi.org/10.1007/s10566-016-9368-8

Santelli, J., Kaiser, J., Hirsch, L., Radosh, A., Simkin, L., & Middlestadt, S. (2004). Initiation of sexual intercourse among middle school adolescents: The influence of psychosocial factors. *Journal of Adolescent Health*, *34*(3), 200–208. https://doi.org/10.1016/S1054-139X(03)00273-8

Santor, D. A., Messervey, D., & Kusumakar, V. (2000). Measuring Peer Pressure, Popularity, and Conformity in Adolescent Boys and Girls: Predicting School Performance, Sexual Attitudes, and Substance Abuse. *Journal of Youth and Adolescence*, *29*(2), 163–182. https://doi.org/10.1023/A:1005152515264

Schramm, D. G., & Gomez-Scott, J. (2012). Merging Relationship Education and Child Abuse Prevention Knowledge: An Evaluation of Effectiveness with Adolescents. *Marriage & Family Review*, *48*(8), 792–808. https://doi.org/10.1080/01494929.2012.714722

Schulenberg, J., Bachman, J. G., O'Malley, P. M., & Johnston, L. D. (1994). High School Educational Success and Subsequent Substance Use: A Panel Analysis Following Adolescents into Young Adulthood. *Journal of Health and Social Behavior*, *35*(1), 45. https://doi.org/10.2307/2137334

Schvaneveldt, P. L., Miller, B. C., Berry, E. H., & Lee, T. R. (2001). Academic goals, achievement, and age at first sexual intercourse: Longitudinal, bidirectional influences. *Adolescence*, *36*(144), 767–787.

Sobngwi-Tambekou, J. L., Tsague-Agnoux, M., Fezeu, L. K., & Ndonko, F. (2022). Teenage childbearing and school dropout in a sample of 18,791 single mothers in Cameroon. *Reproductive Health*, *19*(1), 10. https://doi.org/10.1186/s12978-021-01323-4

Thorsen, M. L., & Pearce-Morris, J. (2016). Adolescent Mental Health and Dating in Young Adulthood. *Society and Mental Health*, *6*(3), 223–245. https://doi.org/10.1177/2156869316665884

UNESCO, Joint United Nations Programme on HIV/AIDS, United Nations Children's Fund, United Nations Entity for Gender Equality and the Empowerment of Women, & World Health Organization. (2018). *International technical guidance on sexuality education: An evidence-informed approach*. UNESCO. https://doi.org/10.54675/UQRM6395

Walker, D., & Holtfreter, K. (2021). Teen Pregnancy, Depression, and Substance Abuse: The Conditioning Effect of Deviant Peers. *Deviant Behavior*, *42*(3), 297–312. https://doi.org/10.1080/01639625.2019.1666610

Weissbourd, R., Peterson, A., & Weinstein, E. (2013). Preparing Students for Romantic Relationships. *Phi Delta Kappan*, *95*(4), 54–58. https://doi.org/10.1177/003172171309500412

Zimmer-Gembeck, M. J., & Helfand, M. (2008). Ten years of longitudinal research on U.S. adolescent sexual behavior: Developmental correlates of sexual intercourse, and the importance of age, gender and ethnic background. *Developmental Review*, *28*(2), 153–224. https://doi.org/10.1016/j.dr.2007.06.001

APPENDIX

Appendix A

Lesson Description

Curriculum Lesson and Description
Lesson 1: "*Who am I and Where am I Going*?" helps adolescents get in touch with their sense of identity and possible selves. Identity formation is a central task of adolescence that influences and is influenced by experiences in romantic and other close relationships. Emphasis is placed on who the adolescent is within their family, friendship, and dating relationship contexts. The adolescents create a possible selves tree in order to visualize their future self-goals and ways to attain them.
Lesson 2: "*Maturity Issues and What I Value*" explores the concept of maturity. It identifies four aspects of maturity—physical, emotional, mental and social—and points out how the latter three don't happen on their own, but take conscious effort. The lesson then moves on to an activity, "a values auction," that helps participants identify the values that are important to them.
Lesson 3: "*Attractions and Infatuation*" begins with a "love smarts" quiz to gauge prior relationship views then moves into creating a "relationship pyramid." This schematic approach assists teens in thinking about the building blocks of good relationships. Adolescents are helped to visualize the foundation of good relationships as well as what happens when relationships move forward too quickly and without strong foundation. In addition, the chemistry of attraction and the nature of infatuation are explored with a fun infatuation/love match activity.
Lesson 4: "*Principles of Smart Relationships*" provides practical guidance for developing positive relationships. The first part introduces seven principles for "smart relationships". An activity in which teens identify Smart and Not-so-Smart relationship decisions provides practice for applying these insights to real world teen relationships. The lesson also helps adolescents develop a realistic concept of love through a three-sided model of chemistry, friendship, and trust/commitment.
Lesson 5: "*Is it a Healthy Relationship?*" offers concrete and practical guidance about how to tell if a relationship is healthy or unhealthy. By trying to answer three essential questions, the lesson explores what healthy and unhealthy relationships look like in the real world. A fun sculpting activity aids in visualizing the negative and positive answers to the questions. An emphasis is placed on personal care and attention to one's personal growth in healthy relationships. In addition, youth are encouraged to remember the importance of fun in healthy relationships by making a list of activities to do with friends and partners.
Lesson 6: "*Decide, Don't Slide!*" begins with a "Sorting Baggage" activity in which youth reflect on behaviors and attitudes that can either help or create challenges for young people. By examining their positive and/or negative patterns, teens decide which patterns they want to carry forward or work to leave behind. Next, a key concept, "Decide*, Don't Slide"*, introduces a low-risk "deciding" approach to relationships. Too often young people slide into situations instead of making clear decisions with good knowledge about the person they are attracted to. Practical tips are given to help teens slow down and make clear decisions when it comes to relationships.

Lesson 7: "*Dating Violence and Breaking Up*" starts with the topic of breaking up and how to know when it is time to break up, how to do it, and how to move forward afterwards. It then moves to the topic of dating violence by increasing teens' awareness of what abuse looks like in a relationship. This lesson addresses the continuum of unhealthy relationships, from disrespectful behavior to the most dangerous problems of intimate partner violence. Adolescents are taught to recognize early warning signs of abuse and practice assertiveness skills to respond to disrespectful comments and behaviors.

Lesson 8: "*Communication and Healthy Relationships"* teaches a valuable set of research-based skills to help young people communicate and mange conflict more effectively in all kinds of relationships. After becoming aware of the *Four Danger Signs* that tend to harm relationships over time, they are introduced a new set of skills to reduce and exit out of negative communication patterns. For example, the *Time Out Skill* and the *Speaker/Listener Technique* are two tools that teens are taught to practice during sensitive and conflict-ridden issues.

Lesson 9: "*Communication Challenges and More Skills*" looks at challenges to good communication and provides more skills for teens to add to their communication toolkits. Participants learn the Do's and Don'ts for effective complaining, practice voicing complaints with a "gentle start", and learn about the importance of daily appreciations in healthy relationships.

Lesson 10: "*Sexual Decision-Making*" encourages teens to clarify their sexual values by linking what they have learned about healthy relationships to sexual decision-making. Teens are presented with a six-part framework to define intimacy and are asked to consider a context for sex that is personally meaningful and protective to them. Youth participate in activities that examine the risks and benefits of their sexual choices and reflect on realistic scenarios after watching a short film. Teens also learn hands-on strategies for staying true to their boundaries and preventing pregnancy and STDs.

Lesson 11: "*Unplanned Pregnancy through the Eyes of a Child*" offers teens a larger context for thinking about the importance of making wise relationship and sexual choices. Participants are encouraged to step outside of themselves and look at the consequences of unplanned pregnancy *through the eyes of a child*. This lesson emphasizes the benefits that are provided to children through healthy, committed parental marriages/unions.

Lesson 12: "*Teens, Technology, and Social Media"* aims to help teens understand the impact of digital technology on relationships and social life. Teens examine the risks of engaging in sexting, cyber-bullying, harassment, etc. and are given the opportunity to develop standards and policies for their engagement with technology.

Lesson 13: *"Teens, Technology, and Social Media"* aims to help teens understand the impact of digital technology on relationships and social life. Teens examine the risks of engaging in sexting, cyber-bullying, harassment, etc. and are given the opportunity to develop standards and policies for their engagement with technology. This lesson aims to build a critical literacy on social media and go beyond the most recent site, device, or app and instead offers activities to encourage teens to reflect upon our highly connected lives in the digital age and potential implications

Appendix B

Measures

Table B1. Youth Responses to Substance Use Items

Has being in the program made you more likely, about the same, or less likely to...	n	Mean (SD)	Level of Likelihood (%)				
			Much Less Likely (1)	Somewhat Less Likely (2)	About the Same (3)	Somewhat More Likely (4)	Much More Likely (5)
1. Make decisions to not drink alcohol?	836	3.49 (1.65)	198 (23.7)	40 (4.8)	150 (17.9)	51 (6.1)	397 (47.5)
2. Make decisions to not smoke cigarettes or cigar products (cigars, cigarillos, or little cigars)?	835	3.53 (1.67)	201 (24.1)	41 (4.9)	130 (15.6)	40 (4.8)	423 (50.7)
3. Make decisions to not use other tobacco products (such as chewing tobacco, snuff, dip, or snus)?	831	3.56 (1.67)	198 (23.8)	37 (4.5)	130 (15.6)	36 (4.3)	430 (51.7)
4. Make decisions to not use electronic vapor products (such as JUUL, Vuse, MarkTen, and blu)?	834	3.50 (1.65)	193 (23.1)	51 (6.1)	140 (16.8)	53 (6.4)	397 (47.6)
5. Make decisions to not use marijuana (also called pot, weed, or cannabis)?	828	3.53 (1.67)	196 (23.7)	41 (5.0)	137 (16.5)	34 (4.1)	420 (50.7)
6. Make decisions to not take prescription pain medicine without a doctor's prescription or differently than how a doctor told you to use it?	828	3.50 (1.66)	200 (24.2)	38 (4.6)	139 (16.8)	49 (5.9)	402 (48.6)

Table B2. Youth Responses to Relationship Skills Items

Has being in the program made you more likely, about the same, or less likely to...	n	Level of Likelihood (%)					
		Mean (SD)	Much Less Likely (1)	Somewhat Less Likely (2)	About the Same (3)	Somewhat More Likely (4)	Much More Likely (5)
1. Better understand what makes a relationship healthy.	803	4.4 (1.0)	26 (3.2)	13 (1.6)	100 (12.5)	168 (20.9)	496 (61.8)
2. Manage your emotions in healthy ways (for example, ways that are not hurtful to you or others)?	813	3.8 (1.3)	81 (10)	45 (5.5)	160 (19.7)	160 (19.7)	367 (45.1)
3. Think about the consequences before making a decision?	807	3.9 (1.3)	70 (8.7)	35 (4.3)	176 (21.8)	168 (20.8)	358 (44.4)

Table B3. Youth Responses to Future Goals and Academic Aspirations Items

Has being in the program made you more likely, about the same, or less likely to...	n	Level of Likelihood (%)					
		Mean (SD)	Much Less Likely (1)	Somewhat Less Likely (2)	About the Same (3)	Somewhat More Likely (4)	Much More Likely (5)
1. Make plans to reach my goals	810	4.2 (1.0)	30 (3.7)	14 (1.7)	131 (16.2)	151 (18.6)	484 (59.8)
2. Care about doing well in school	810	4.3 (1.1)	28 (3.5)	23 (2.8)	133 (16.4)	149 (18.4)	477 (58.9)

Table B4. Youth Responses to Peer Pressure Items

Has being in the program made you more likely, about the same, or less likely to...	n	Mean (SD)	Level of Likelihood (%)				
			Much Less Likely (1)	Somewhat Less Likely (2)	About the Same (3)	Somewhat More Likely (4)	Much More Likely (5)
1. Resist or say no to someone if they pressure you to participate in acts, such as kissing, touching private parts, or sex?	801	4.1 (1.2)	48 (6.0)	30 (3.7)	148 (18.5)	105 (13.1)	470 (58.7)
2. Talk to a trusted person/adult (for example, a family member, teacher, counselor, coach, etc.) if someone makes you uncomfortable, hurts you, or pressures you to do things you don't want to do?	797	4.1 (1.2)	51 (6.4)	26 (3.3)	158 (19.8)	125 (15.7)	437 (54.8)

Table B5. Youth Responses to Sexual Delay Items

Has being in the program made you more likely, about the same, or less likely to...	n	Mean (SD)	Level of Likelihood (%)				
			Much Less Likely (1)	Somewhat Less Likely (2)	About the Same (3)	Somewhat More Likely (4)	Much More Likely (5)
1. Plan to delay having sexual intercourse until you graduate high school or receive your GED.	795	3.8 (1.4)	84 (10.6)	45 (5.7)	180 (22.6)	85 (10.7)	401 (50.4)
2. Plan to delay having sexual intercourse until you graduate college or complete another education or training program	796	3.7 (1.4)	82 (10.3)	56 (7.0)	201 (25.3)	98 (12.3)	359 (45.1)
3. Plan to delay having sexual intercourse until you are married	797	3.6 (1.4)	105 (13.2)	53 (6.6)	220 (27.6)	85 (10.7)	334 (41.9)

Table B6. Youth Responses to Program Experience Items

Even if you didn't attend all of the sessions or classes in this program, how often in this program…	n	Mean (SD)	Frequency (%) None of the time (1)	Some of the time (2)	Most of the time (3)	All of the time (4)
1. did you feel interested in program sessions and classes?	790	2.9 (1.0)	73 (9.2)	195 (24.7)	238 (30.1)	284 (35.9)
2. did you feel the material presented was clear?	789	3.4 (.93)	52 (6.6)	93 (11.8)	152 (19.3)	492 (62.4)
3. did discussions or activities help you to learn program lessons?	789	3.3 (.90)	48 (6.1)	97 (12.3)	231 (29.3)	413 (52.3)
4. did you have a chance to ask questions about topics or issues that came up in the program?	784	3.2 (.94)	50 (6.4)	132 (16.8)	212 (27.0)	390 (49.7)
5. did you feel respected as a person?	791	3.2 (1.0)	74 (9.4)	122 (15.4)	169 (21.4)	426 (53.9)