

4-23-2010

Faith-Based Sexual Education: A Comparison of Comprehensive and Abstinence-Only Programs

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Faith-Based Sexual Education:
A Comparison of Comprehensive and Abstinence-Only Programs

by

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Dissertation

Submitted to the Department of Psychology

Eastern Michigan University

in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

In

Clinical Psychology

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April 23, 2010

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ACKNOWLEDGEMENTS

Many people contributed to this project and enabled it to come to fruition. I would like to thank my advisor, Dr. Ketl Freedman-Doan, who was integral in the development, design, and implementation of the project. Her mentorship provided me with the guidance and support to undertake such an ambitious project. My committee members, Drs. Byrd, McCarthy, and Saules, provided thoughtful feedback that served to elevate the quality of the project. Additionally, the members of my research laboratory generously gave of their time to assist with recruitment and data collection.

This project would not have been possible without the openness of the religious organizations to assess the impact of their sexual education programs and the youth who provided candid information about very personal matters. It is because of their selflessness that valuable information was gathered and ultimately other youth may be able to attend increasingly effective programs.

On a personal note, I would like to thank my parents whose unconditional love and support allowed me to dream that I could and set me on a path of shooting for the moon in the hopes of catching a star. Finally, Ken, thank you for keeping me grounded during the journey.

ABSTRACT

This study sought to evaluate the effects of faith-based sexual education programs. Participants (ages 13-18, N = 128) were surveyed regarding their religious and sexual attitudes, beliefs, and behaviors prior to completing a sexual education program at their church, synagogue, or religious institution and again after completing the program. The sexual education programs were divided into three groups based on program content and duration: abstinence-only-short, comprehensive-short, and comprehensive-long. The first goal was to assess the within-group effects of attending an abstinence-only or comprehensive sexual education program. Participants from all three groups showed an increase in the degree to which they believed that sex is special. The second goal was to compare the post-program outcomes of each of the three groups. Interestingly, the groups varied little with regard to attitudes. Among sexually inactive youth, participants who attended an abstinence-only program were more likely to cite religious reasons for abstinence. Additionally, participants from the comprehensive-long program engaged in more sexual activity than participants from the other groups, which was likely due to their older age. The promise of faith-based initiatives is discussed, as well as the existing research challenges and possible solutions. Future research directions are considered.

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Introduction

While adolescent sexuality is a normative phenomenon that has always existed, during the past two centuries there has been a considerable shift in the timing and occurrence of sexual events. Notably, there has been a significant decrease in the age of pubertal onset, with the average age of puberty in the 1800s ranging from 16-17 years old compared with the present day average of 12-13 years old (Strickland & Hornberger, 2005). Conversely, there has been an increasing trend to marry at a later age, which has increased the gap between puberty and marriage from approximately 1-2 years in the 19th century to approximately 12-14 years at present (Strickland & Hornberger, 2005). During this time, youth are sexually mature individuals and are likely to initiate sexual activity. In 2003, the median age of sexual debut was 17.4 years for women and 17.7 years for men, while the median age of first marriage was 25.3 and 27.1 years for women and men, respectively (Abma, Martinez, Mosher, & Dawson, 2004; Fields, 2004). This leaves a substantial period during adolescence and emergent adulthood in which young people are likely to be sexually active, which could leave them vulnerable to the negative consequences of unsafe sex, such as the contraction of sexually transmitted diseases (STDs) or unwanted pregnancy. The early age of sexual debut coupled with a historically longer period of potential sexual experimentation highlights the need for sexual education programs that promote safe sexual practices. To date, the public school systems have been the main source of sexual education for America's youth. However, these programs are subject to conservative governmental regulations that require all schools accepting federal financial support to use abstinence-only curricula that stress the benefits of abstinence while highlighting the negative consequences of premarital sex and contraceptive use (Dailard, 2002; Social Security Administration, 1996). Yet recent studies

suggest that these school-based abstinence-only programs have little effect on youths' sexual behavior (Kirby, 2001, 2007; Manlove, Romano-Papillo, & Ikramullah, 2004; Trenholm et al., 2007). As such, there has been increasing interest in the development of comprehensive sexual education programs by community entities that are not subject to the federal abstinence-only regulations. Thus, the goal of the present research is to evaluate faith-based sexual education programs to determine the programs' effectiveness in safeguarding youth against the negative consequences of unsafe sex.

According to the Centers for Disease Control (CDC), 47.8% of American high school students have had sexual intercourse (CDC, 2008). This is a figure that varies by age, gender, and ethnicity with older, male, and African American and Hispanic youth reporting higher rates of sexual activity than their younger, female, and Caucasian counterparts. Of the sexually active students, 7.1% became sexually active before the age of 13, and 14.9% have already had four or more sexual partners. This precocious sexual activity is particularly worrisome given the association between early sexual debut, increased number of lifetime partners, involvement with risky partners, decreased condom use, negative attitudes regarding condoms, and sexual involvement while under the influence of substances (Furstenberg, Herceg-Baron, Shea, & Webb, 1984; O'Donnell, O'Donnell, & Stueve, 2001; Sandfort, Orr, Hirsch, & Santelli, 2008).

Currently, the only way to protect against the contraction and spread of STDs among the sexually active is long-term, consistent condom use (National Institute of Allergy and Infectious Diseases, National Institute of Health, & Department of Health and Human Services, 2001). Over the past two decades, condom use among young people has been increasing, with 61.5% of high school students reporting that they or their partner used a

condom at their last sexual intercourse experience (CDC, 2008). Yet many adolescents still do not use condoms consistently. For example, adolescents' reports of having used a condom at last intercourse ranged from 54.2-69.2% across state surveys and 57.0-74.3% across local surveys. Additionally, consistent group differences in condom use have emerged with younger, male, and African American individuals reporting higher rates of condom use than their older, female, and Caucasian or Hispanic counterparts (CDC, 2008). Thus, despite the trend toward having safer sex, many adolescents still do not consistently use condoms throughout their lives, which leaves them vulnerable to contracting STDs or having unwanted pregnancies.

While the average age of sexual debut is comparable in the United States and other developed nations, American adolescents experience more negative health outcomes than do their international counterparts. For example, adolescents initiate intercourse at approximately 16-17 years of age in United States, France, Sweden, Germany, and the Netherlands (Abma-Sonenstein, 1998; Bozon, 2003; Darroch, Singh, & Frost, 2001; Durex, 1998; Rademakers, 1998). Yet American adolescents are significantly more likely to become teenage mothers than are European adolescents; the teenage birth rate in the United States is 4-8 times that of French, Swedish, German, or Dutch teens (Gianotten, 1998; Darroch et al., 2001; Department for Economic and Social Information and Policy Analysis 1993, 1996a, 1996b; Lawlor & Shaw, 2004; Ventura, Martin, Curtin, & Mathews, 1998). American adolescents also are at significantly higher risk for contracting STDs and HIV. When compared to other industrialized nations, America has the highest rate of AIDS per capita, with approximately 3-12 times as many documented cases as in Western European countries (World Health Organization, 1997). Furthermore, in the United States, half of all new HIV

infections occur in people under the age of 25 (White House Office of National AIDS Policy, 2000). American adolescents also are more vulnerable to a variety of STDs. In fact, in 2000, adolescents acquired one-half of all new STDs, which was approximately 9.1 million new STD infections (Weinstock, Berman, & Cates, 2004). While directly comparable estimates for all STDs are not available, American adolescents have incidence rates of chlamydia and gonorrhea in excess of 2-20 times those of adolescents in developed European countries (Panchaud, Singh, Fievelson, & Darroch, 2000). Given these statistics, considerable attention has been focused on determining why American adolescents experience more negative consequences than their international peers.

Sexual Education

International comparisons. The low rates of pregnancy and STDs among adolescents in European nations frequently have been attributed to the comprehensiveness of their sexual education programs (e.g., Berne & Huberman, 1999; Ponton & Judice, 2004). Berne and Huberman (1999) researched the sexual education programs of the Netherlands, Germany, and France, and they articulated some clear differences between these programs and those in the United States. The first overarching difference is that in these countries, adolescent sexuality is viewed as a normative part of development that is addressed non-judgmentally. Given this perspective, sexual education focuses on personal responsibility and making informed choices. Often the goal of European sexual education programs is not explicitly to impart facts but rather to start a dialogue about sex (Gianotten, 1995). For example, in the Netherlands, there are no restrictions on the topics that teachers can address (Ketting & Visser, 1994), so the students' questions guide the discussions, with topics such as masturbation and homosexuality openly discussed. Since communication is highly

emphasized, Dutch educational leaders have designed a CD for use in sexual education that features various vignettes and scenarios, and teachers often utilize the CD to facilitate role plays and to strengthen negotiation skills (Braeken, 1998). Furthermore, sexual education is viewed as an ongoing process beginning in preschool and continuing throughout the entirety of one's education, although it tends to be concentrated in the middle and secondary school years (Caron, 1998). Additionally, European sexuality education is not addressed as a subject in isolation; rather it is integrated, whenever it is relevant, into other subjects such as biology, literature, and social studies (Paulussen, Kok, Schaalma, & Parcel, 1995). Finally, education efforts are collaborative and frequently involve the school, community officials, reproductive health clinicians, and media campaigns (Berne & Huberman).

Sexual Education in the United States

Public support. In the United States, there is widespread support for the implementation of comprehensive sexual education (Albert, 2004; Dailard, 2001; National Public Radio, Kaiser Family Foundation, & Kennedy School of Government, 2004). For example, in a nationally representative survey of 1,001 parents of 7th through 12th grade students, 90% indicated that they believed it was important that sexual education be taught in schools, while only 7% did not want this subject taught to their children (NPR et al., 2004). While many parents thought that abstinence should be stressed, 67% of parents believed that the federal government should fund comprehensive programs that include information about contraceptives; furthermore, the majority of both parents and adolescents did not believe that taking this approach would send a mixed message about sex (Albert, 2004; Dailard, 2001). Parents were supportive of education programs targeting junior high and high school students that would cover “controversial” topics, such as STDs (98%), conception (96%),

contraceptive use and access (87%), abortion (85%), masturbation (77%), homosexuality (73%), and oral sex (71%). Additionally, 71% of parents indicated that teens should be able to get birth control pills from medical professionals without parental consent (NPR et al., 2004). Furthermore, students wanted more information than they were receiving about sexuality (Dailard, 2001). Approximately half of the students indicated that they wanted more information regarding the appropriate actions to take if they were raped or sexually assaulted, where and how to get tested for STDs, and how to communicate with their partner about having safe sex. Other concerns included gaining more information about how to use and access birth control, as well as how to cope with the pressure to have sex. However, many of the school-based sexual education programs do not address these important topics or do so very briefly, which ultimately leaves many adolescents' unprepared and at a distinct disadvantage when they do initiate sexual activity.

The Role of Politics in Sexual Education

The federal government provides considerable financial support for abstinence-only sexual education programs. In 1996, the federal government revised the Welfare Reform Act, which established the first national policy for sexual education and designated \$250 million for abstinence-only education over a five-year period (Berne & Huberman, 1999). The abstinence-only education programs are based on the rationale that abstinence is the only way to achieve absolute protection against pregnancy and STDs (Thomas, 2000), although many have suggested that the governmental policies have been enacted to promote a conservative moral agenda as well (Bay-Cheng, 2003; Berne & Huberman, 1999; Dailard, 2002). All programs receiving federal assistance are required to comply with a narrow eight-point definition of abstinence-only education. This definition, frequently referred to as

Section 510 (Social Security Administration, 1996), states that abstinence-only programs must explicitly teach that there are social, psychological, and health benefits of abstinence, sexual activity is only acceptable within a marriage, and abstinence is the only certain way to protect against pregnancy and disease. Additionally, the definition states that abstinence programs must adhere to the premise that premarital sex is likely to lead to psychological and physical harm and that out-of-wedlock pregnancy likely results in harm to the child, parents, and society. While originally programs did not have to stress all eight points equally, no information could be provided that was inconsistent with any of the points. This meant that contraceptives could not be discussed, unless it was to focus on the deficits or inefficiencies. However, in 2000, due to conservative Congressional members' concerns that Section 510 money was funding programs that were not adhering strictly to the aforementioned guidelines, Congress created a third abstinence-only program called the Special Projects of Regional and National Significance (SPRANS) program, which created more stringent rules. Specifically, SPRANS requires programs to target 12-18 year olds, to teach *all* eight points of the definition equally, and not to provide contraceptive information to adolescents even if the program is funded with non-federal money (Dailard, 2002). Since these laws have been enacted, federal abstinence-only funding has increased from \$60 million in fiscal year 1998 to \$168 million in fiscal year 2005 (Santelli et al., 2006). However, there appears to be a growing dissatisfaction with these federal regulations, as 23 states and the District of Columbia have declined the federal abstinence-education grants (Boonstra, 2009).

Current Sexual Education Programs

Abstinence-only. Despite significant federal funding for abstinence-only sex education, few rigorous evaluations have been conducted on the effectiveness of these

programs. Kirby (2001), however, has conducted a systematic review of sexual education programs. To be included in the review, the studies had to meet six criteria: (1) conducted in 1980-present, (2) conducted in the U.S. or Canada, (3) targeted 12-18 year olds, (4) used an experimental or quasi-experimental design, (5) had a sample size ≥ 100 , and (6) measured impact on sexual behavior. Only three studies of abstinence-only programs met these criteria. The first study compared the impact of three abstinence-only curricula on the behaviors of junior high and high school students one year after implementation of the programs. The results revealed that none of the programs had any impact on the students' initiation of sex, neither delaying nor hastening the event (Weed, Olsen, DeGaston, & Prigmore, 1992). The second study investigated the impact of the *Stay SMART* program on adolescents' sexual activity and substance use and found that the program did not significantly influence the frequency of adolescents' sexual activity (St. Pierre, Mark, Kaltreider, & Aikin, 1995). The third study employed a rigorous methodological design, using random assignment, a very large sample size, and multiple post-tests, to examine the effects of the *Postponing Sexual Involvement* program used statewide in California. Yet the results revealed that the program had no impact on adolescents' initiation or frequency of sex or the number of sexual partners (Kirby, Korpi, Barth, & Cagampang, 1997). Based on these studies, Kirby (2001) concluded there was no scientific evidence to suggest that abstinence-only programs hasten or delay sexual activity. However, he cautioned about making premature generalizations given the paucity of current research. Similarly, Manlove and colleagues (2004) conducted a more recent review of the literature utilizing comparable inclusion criteria to those of Kirby, and they too agreed that there is no conclusive evidence

regarding the effectiveness of abstinence-only programs at delaying sexual intercourse based, in part, on the diversity in abstinence-only programs and lack of rigorous research.

In 1999, Mathematica Policy Research, Inc. was commissioned by the U.S. Department of Health and Human Services to assess the effectiveness of the abstinence-only programs. The ensuing study (Trenholm et al., 2007) compared four well-implemented and replicable abstinence-only programs from separate geographical regions. Middle school students were randomly assigned to participate in the abstinence-only program at their school or the control group and were enrolled for three consecutive years from 1999-2001. Outcome data were collected from 2,057 adolescents in 2005-2006. The results revealed that none of the four programs had a significant impact on adolescents' sexual activity; when adolescents who received abstinence-only education were compared to their control peers, their average age of sexual debut, number of sexual partners, and rates of unprotected sex were nearly identical. While many health educators have expressed concern that the exclusion of contraceptive information in abstinence-only programs may place adolescents at greater risk for having unprotected sex (Kirby, 2001), both groups had comparable rates of unprotected sex. When the groups were collapsed, 47% of sexually active adolescents indicated inconsistent condom use. Therefore, while abstinence-only programs may not place adolescents at additional risk for non-condom use, these programs certainly do not help promote safe sex. Additionally, the abstinence-only group was significantly more likely than the control group to indicate that condoms are never effective at protecting against STDs, which could dissuade them from future condom use. Thus, even the most recent and rigorous evaluations of abstinence-only programs suggest that they are not effective in delaying sexual activity.

Comprehensive sexual education. Investigations regarding the effectiveness of comprehensive sexual education programs have produced some encouraging results (Kirby, 2001; Manlove et al., 2004). While definitions can vary slightly among researchers, comprehensive sexual education programs are typically those that promote abstinence as the safest method to prevent pregnancy and STDs but also discuss the full range of benefits and risks of contraceptive methods, including condoms. In Kirby's (2001) previously described review, he identified 28 studies of the effectiveness of comprehensive sexual education programs that met his inclusion criteria. The results revealed that, contrary to concerns that talking openly with adolescents about sex and condoms will encourage them to engage in sexual activity, comprehensive sexual education programs do not hasten the onset of sexual activity, increase its frequency, or increase the number of sexual partners. Interestingly, several of the reviewed studies indicate just the opposite; nine of the 28 studies demonstrated that the comprehensive programs delayed intercourse. Additionally, 5 out of 19 programs decreased the frequency of sex, 3 out of 10 decreased the number of sexual partners, 10 out of 18 increased condom use, and 4 out of 11 increased contraceptive use. Similar results were obtained in Manlove and colleagues' (2004) more recent review of the sexual education literature. Of the 15 programs that were evaluated with an experimental design, 7 demonstrated that the programs delayed sexual debut, and 4 were associated with either decreases in sexual activity or increases in contraceptive use. Additionally, of the 6 programs evaluated using quasi-experimental designs, all were associated with delays in sexual debut, and 3 were associated with increased contraceptive use. Thus, this literature suggests that well-designed and implemented comprehensive sexual education programs can have a positive influence on the sexual activity of adolescents.

Given that all comprehensive sexual education programs are not equally effective, there have been attempts to identify similarities among the successful programs. Kirby (2001) outlined several characteristics that effective programs share, the first of which is that these programs focused on a limited number of concrete behavioral goals, such as delaying sexual debut or increasing condom use. The successful programs took a clear stance on the desired behavior of the adolescents and frequently reiterated that message. For example, the programs clearly advocated that delaying sex or consistent condom use was the desired choice over unprotected sex. Another key aspect was that successful programs were designed using an established theoretical basis about the antecedents of risk-behaviors, and subsequent activities were aimed at reducing those risks. The social and peer pressure to have sex was specifically addressed; youth were provided with facts indicating that many young people do not have sex, and many who do have sex use condoms. Accurate factual information also was given regarding the risks associated with sexual activity and methods for avoiding pregnancy and STDs. A novel aspect of successful programs was a focus on equipping young people with communication, negotiation, and refusal skills regarding sex and contraceptive use through the use of modeling, role-plays, and didactic activities that directly involved the youth and attempted to personalize the information. Effective programs also carefully tailored the curriculum to the age, sexual experience, and culture of the students. Different approaches were taken with non-sexually active, sexually active, and high-risk students. Consideration also was given to how the programs were implemented. For example, the length of the program was very important, with programs that lasted less than 14 hours tending to be ineffective. Finally, the leaders of successful programs received training and believed in the messages that they were conveying.

Sexual Development

A necessary precursor to designing effective sexual education programs is gaining a more comprehensive understanding of the factors that contribute to normative sexual development. Utilizing normative sexual development as a framework enables researchers to begin to highlight diverging developmental trajectories that could lead to risky behavior and potential negative health outcomes. Unfortunately, the majority of the research to date has focused on the etiology of adolescents' risky sexual behaviors, which has led to the misconception that all adolescent sexual behavior is inherently problematic (Kotchick, Shaffer, Forehand, & Miller, 2001). This problematic perspective on adolescent sexuality continues to be reflected in the conservative federal sexual education regulations (Bay-Cheng, 2003), even though adolescent experts advocate for a more holistic and positive view of adolescent sexuality (Haffner, 1995). Second, prior literature has tended to focus on individual-level characteristics that contribute to adolescents' sexual activity and decision-making (Kotchick et al., 2001). While individual characteristics are certainly important, this focus ignores the complexity of sexual development. Encouragingly, more recent literature has begun to expand its focus to attempt to capture sociocultural factors that contribute to sexual development, although much of this research has proceeded in a haphazard, atheoretical way (Kotchick et al.).

In an effort to provide a comprehensive conceptual framework with which to understand sexual development, Kotchick and colleagues (2001) have proposed utilizing a multisystemic perspective. This perspective is strongly informed by Bronfenbrenner's Ecological Systems Theory (1979, 1989), which posits that one's behavior is influenced by the dynamic interplay of multiple systems, including both macro-level (e.g., sociocultural

factors) and micro-level (e.g., individual and familial factors) systems. According to the multisystemic perspective, adolescent sexual development is primarily influenced by the individual, familial, and extrafamilial systems. While larger sociocultural influences such as race or socioeconomic status are recognized, it is thought that these factors act through the micro-level systems. Kotchick and colleagues hypothesize that adolescents have both risks and resources in their individual, familial, and extrafamilial systems. These systems are thought to dynamically interact, and the risks and resources of one system can either safeguard against or increase vulnerability to the risks and resources of others systems. Thus, these systems can have both direct and indirect effects on adolescents' sexual development.

The Individual System

In an effort to gain a greater understanding of the broad array of factors contributing to adolescent sexual development, Kirby (1999) conducted a review of 250 studies and subsequently identified more than 100 antecedents to sexual behavior that ranged from community-level to individual-level factors. The most commonly cited individual-level factors included biological antecedents, ethnicity, attachment to and success in school, attachment to religious institutions, problem or risk-taking behaviors, emotional distress, sexual abuse history, characteristics of relationship with partners, and sexual beliefs, attitudes, and skills. While an in-depth overview of each of these factors is beyond the scope of the present paper, a brief summary of the major findings is provided.

Biological antecedents. Puberty is a maturational stage during which young people become capable of sexual reproduction (Greenberg, Bruess, & Haffner, 2002). The stage is characterized by fluctuations in hormones, which lead to the development of secondary sexual characteristics and ultimately the onset of sexual activity. There is both individual

and group variability in the timing of pubertal initiation, with girls typically beginning puberty between ages 10-11 and boys beginning between ages 12-14 (Greenberg et al., 2002). During this time, hormonal fluctuations are not only preparing the body for sexual maturity, but also are thought to contribute to the development of sexual interest. For example, in a study of 8th-10th grade students, androgen levels were a strong predictor of both the motivation to engage in sexual behaviors and the actual behaviors in which adolescents had engaged (Udry, Billy, Morris, Groff, & Raj, 1985; Udry, Talbert, & Morris, 1986). Yet adolescents engaged in sexual activity in a socially sanctioned manner progressing from less intimate activities (i.e., kissing) to more intimate activities (i.e., sexual intercourse), which suggests that hormones set the stage for sexual interest or motivation, but subsequent sexual activity is influenced largely by the sociocultural context.

Ethnicity. Consistent ethnic differences in adolescent sexual behavior also have been documented (CDC, 2000, 2004, 2006, 2008). For example, in a nationally-representative study of youth behavior, African American adolescents were more likely to be sexually active, were younger at sexual debut, and had higher numbers of sexual partners than Caucasian or Hispanic adolescents (CDC, 2006). Given these differences, there has been a focus on developing causal explanations. Sociological theories have suggested that sexual risk behavior is influenced by a combination, and often a dynamic interplay, of socioeconomic factors, such as neighborhood context, family structure, class position, and race (Brewster, 1994; Furstenberg, Morgan, Moore, & Peterson, 1987; Ku, Sonenstein, & Pleck, 1993). The sociological research suggests that youth's socialization process is shaped by differential access to economic and organizational resources. According to Wilson's (1987, 1991) financial deprivation hypothesis, the economic climate in many major cities has

led to high concentrations of economically disadvantaged minority individuals living in segregated communities. The communities often have limited access to well-paying jobs or opportunities for educational advancement. Thus, this creates large networks of people who are unemployed, underemployed, school dropouts, and/or single parents (Wilson, 1991). In this context, positive role models and parental supervision often are limited. Therefore, these circumstances can create a climate in which sexual activity is not unexpected and even may be a normative behavior in which to engage to achieve social status or financial benefits (Brewster, 1994). That said, it is important to note the within-group variability that exists in any racial or ethnic group. No one factor appears to have a linear relationship with adolescents' sexual behavior; rather, the aforementioned sociocultural factors have a complex interactional effect (Ramirez-Valles, Zimmerman, & Newcomb, 1998).

Attachment to organizations. Adolescents' attachment to school appears to have a protective function, such that those with greater school attachment engage in less risky sexual behaviors (Kirby, 2002). Considerable research also has demonstrated that future educational aspirations are associated with a variety of safe sexual behaviors (Blum, Buehring, & Rinehart, 2000; Halpern, Joyner, Udry, & Suchindran, 2000; Manlove, 1998; Moore, Manlove, Gleib, & Morrison, 1998; Pleck, Sonenstein, & Swain, 1988). For example, in a nationally representative study of 7th-12th grade students, educational aspirations (i.e., high expectations of going to college) were associated with a delay in sexual activity (Halpern et al., 2000). Not only were students with high educational goals engaging in their first sexual intercourse experience later, but they were delaying a wide range of noncoital sexual activities, such as kissing and handholding as well. Additionally, there is some

evidence to suggest that educational aspirations are associated with increased condom use (Pleck et al., 1988) and decreased premarital pregnancies (Moore et al., 1998).

Similarly, attachment to one's faith or religiosity has begun to emerge as a factor that has a possible protective quality against engaging in risky sexual behaviors. In fact, several studies to date have documented that adolescents whose faith is of great importance are less likely to engage in sexual intercourse (Bingham & Crockett, 1996; Crockett, Bingham, Chopak, & Vicary, 1996; Halpern et al., 2000). Since religiosity is central to the present study, it will be discussed in greater detail in a latter portion of this paper.

Problem behaviors. The existing literature has documented a strong, consistent correlation between a variety of externalizing behaviors, including precocious sexual activity, substance abuse, delinquency, and conduct or attentional problems (Jessor & Jessor, 1977; Slutske et al., 1998; Young, Stallings, Corley, Krauter, & Hewitt, 2000). According to problem behavior theory (Jessor & Jessor, 1977), these activities and behaviors may constitute a single syndrome of problem behavior in adolescence. Subsequent research has provided substantial support for the notion of a problem behavior syndrome with a higher-order factor, often called unconventionality, consistently found to account for the covariation among problem behaviors (Donovan & Jessor, 1985; Donovan, Jessor, & Costa, 1988; Jessor, Donovan, & Costa, 1991; Jessor, Turbin, & Costa, 1998). Consistent with this perspective, several personality factors have been investigated as common predictors of externalizing behaviors. The personality characteristic that has received the most attention to date is sensation-seeking, which Zuckerman (1994, p. 27) has defined as "the seeking of varied, novel, complex, and intense sensations and experiences, and the willingness to take physical, social, legal, and financial risks for the sake of such experience." Research has

documented a positive relationship between sensation-seeking and risky externalizing behaviors, such that adolescents who score higher on personality measures of sensation-seeking report more involvement in a wide range of risky behaviors (Brown, DiClemente, & Park, 1992; Neumark-Sztainer, Story, French, & Resnick 1997; Zuckerman & Kuhlman, 2000). It is hypothesized that this relationship exists because some individuals have a biosocial predisposition toward greater stimulation (Zuckerman & Kuhlman, 2000), which appears to peak in adolescence (Zuckerman, 1994), although the reason for this remains unclear.

Emotional distress. There appears to be an association between adolescents' experience of emotional distress and their level of sexual activity. For example, a positive link between depression, suicidal ideation, suicide attempts, and risky sexual activity has been documented, such that as emotional distress increases, so too does risky sexual activity (Brooks, Harris, Thrall, & Woods, 2002; King et al., 2001; Rector, Johnson, & Noyes, 2003). Using a nationally representative sample of adolescents, Hallfors and colleagues (2004) documented that adolescents who engage in risky sexual activity were significantly more likely to experience depression, suicidal ideation, or suicide attempts than their peers who engaged in low risk sexual activity. Yet it still remains unclear whether depression increases one's likelihood of engaging in risky behaviors, or if risky behaviors increase one's vulnerability to developing emotional distress.

Sexual abuse history. A history of sexual abuse also is associated with risky sexual behaviors. Much of the existing sexual abuse literature has focused exclusively on the experiences of adolescent girls. Adolescent girls who have been sexually abused are more likely to experience early sexual debut, unprotected sexual intercourse, multiple sexual

partners, and pregnancy than similar aged, non-abused peers (Brener, McMahon, Warren, & Douglas, 1999; Fergusson, Horwood, & Lynskey, 1997; Nagy, DiClemente, & Adcock, 1996; Rickert & Wiemann, 1998). There are a much smaller number of studies that have compared the effects of sexual abuse on both adolescent boys' and girls' sexual activity; those that do exist have generally yielded conflicting results regarding whether adolescent boys and girls differ in their tendency to externalize or internalize (Chandy, Blum, & Resnick, 1996; Erickson & Rapkin, 1991). To investigate this topic more thoroughly, Raj, Silverman, and Amaro (2000) utilized a representative sample of 9th-12th grade boys and girls to determine the effects of sexual abuse, defined as having experienced any sexual contact against one's will, on the adolescents' subsequent sexual activity. Results revealed that sexually abused girls were more likely than their non-abused peers to have experienced earlier sexual debut, to have had three or more sexual partners, and to have been pregnant. Similarly, sexually abused boys were more likely than their non-abused peers to have had multiple sexual partners and to have gotten someone pregnant.

Relationship characteristics. Simply being involved in dating or a romantic relationship makes it more likely that adolescents will be sexually active, because dating affords potential opportunities for sexual contact (Small & Luster, 1994). In fact, in a study utilizing data from a nationally representative sample of adolescents, Blum, Buehring, and Rinehart (2000) documented that the single best predictor of having had sexual intercourse was whether the adolescents had had a romantic relationship in the 18 months prior to the study. Regardless of gender or race, adolescents who had a romantic partner were more likely to have engaged in sexual intercourse than single adolescents. Additionally, the characteristics of adolescents' romantic partners, namely age, are emerging as important

variables. In a study of 6th grade students, youth who had partners who were two or more years their senior were over 30 times more likely to have had sex and were more likely to have experienced unwanted sexual advances than their peers (Marin, Coyle, Gomez, Carvajal, & Kirby, 2000).

Sexual attitudes and beliefs. Perhaps one area that has received the most attention to date is the extent to which adolescents' sexual attitudes and beliefs influence their subsequent sexual behavior. The Health Belief Model (Becker, 1974; Janz & Becker, 1984; Rosenstock, 1966; Rosenstock, 1974), Theory of Planned Behavior (Ajzen, 1988; Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975), and Social Cognitive Theory (Bandura, 1986) all utilize various sexual attitudes and beliefs to predict adolescents' behavior. An overarching finding of this literature is that adolescents who hold more permissive attitudes about sexual behavior are more likely to report greater involvement in sexual activity (Plotnick, 1992; Winslow, Franzini, & Hwang, 1992), particularly risky sexual behaviors such as having multiple sex partners and using condoms inconsistently (Basen-Engquist & Parcel, 1992; Levinson, Jaccard, & Beamer, 1995) than their more conservative peers. Additionally, adolescents who perceive more social and personal costs to sex are more likely to abstain than their peers who perceive sex to be of social and personal benefit (Blum et al., 2000). Furthermore, those youth who hold more favorable attitudes about condoms, particularly that condoms do not decrease sexual pleasure, are more likely to report more consistent rates of condom use throughout their lives (Boone & Lefkowitz, 2004).

The Familial System

The family system is another realm that is thought to influence the nature of adolescents' sexual developmental path. The family variables that most frequently are

identified are divided into two categories: family structure variables and family process variables.

Family structure variables. The structure of adolescents' families, whether in terms of socioeconomic status (SES), education, or number of caregivers, appears to have an impact on adolescents' sexual development. Several studies have documented that parental income is associated with adolescents' rates of sexual activity, such that adolescents from higher income families postpone sexual initiation longer than their lower income peers (Blum et al., 2000; Lammers, Ireland, Resnick, & Blum, 2000). It is typically thought that increased financial resources allow parents to monitor their children and their behavior more thoroughly. Similarly, parental educational level, which is often thought of as a proxy for SES, has a negative association with sexual activity (Santelli, Lowry, Brener, & Robin, 2000; Small & Luster, 1994). For example, in a national study of 14-17 year olds, adolescents whose parents were college graduates were 2.5 times less likely to have engaged in sexual intercourse than adolescents whose parents did not graduate from high school (Santelli et al., 2000). Additionally, family structure can influence adolescents' sexual activity in either positive or negative ways, with adolescents from two-parent homes at a decreased likelihood of having yet become sexually active when compared to similar aged peers from one-parent homes (Blum et al., 2000; Lammers et al., 2000; Santelli et al., 2000).

Family process variables. There also is much interest in determining how the quality of the parental-child relationship impacts adolescents' sexual development. According to attachment theory (Bowlby, 1973, 1980, 1969/1982), a caregiver's attentiveness to an infant's needs influences the subsequent infant-caregiver bond, such that an appropriately responsive caregiver causes the child to feel safe and secure. This leads the

child to develop positive working models, or mental schema, of both self and important others. With regard to sexual relationships, a weak parent-child attachment is associated with negative outcomes, such as early sexual debut and an increased number of sexual partners (Dittus & Jaccard, 2000; Smith, 1997; Walsh, 1993). Similarly, parenting style also appears to have an important impact on adolescents' sexual development. An authoritative parenting style, characterized both by warmth and the enforcement of clear boundaries, is associated with adolescents who delay sexual activity; conversely, a permissive parenting style, characterized by indulgence and neglect, and an authoritarian parenting style, characterized by strictness and over-control, are both associated with adolescents who engage in early sexual activity (DeVore & Ginsburg, 2005; Huebner & Howell, 2003; Thorton, 1990). Additionally, communication between parents and adolescents has been shown to impact adolescents' sexual behavior, such that more parental communication is associated with less risky behaviors, including reduced number of sexual partners (Aspy et al., 2007; Holtzman & Rubinson, 1995). That said, all forms of communication are not equal; communication appears to be beneficial when developmentally appropriate information is conveyed in a comfortable, skilled, and open manner (Whitaker, Miller, May, & Levin, 1999). Parental communication about sex appears to be effective because it makes parents the source of sexual information, reinforces parental values, and buffers adolescents from peer pressure (Whitaker & Miller, 2000).

The Extrafamilial System

The extrafamilial system encompasses the broader environmental realms in which adolescents interact. While environment is certainly important, it is arguably the least studied of the three ecological systems (Kotchick et al., 2001). Within this domain, the

existing literature has largely focused on peer influences and, to a lesser extent, community variables.

Peer influence. There is substantial evidence documenting the influence of peer norms and attitudes on adolescents' subsequent sexual behavior (Buhi & Goodson, 2007; Catania et al., 1989; DiClemente, 1990, 1991; Romer et al., 1994). It is important to note that peers can have either positive or negative effects. For example, DiClemente (1991) documented that youth who perceived their peers to be supportive of condom use were five times more likely to use condoms consistently than were their counterparts who did not perceive peer support. Conversely, the negative effects of association with delinquent peer groups, including early sexual intercourse, have been widely established (Rowe, Rogers, & Meseck-Bushey, 1989; Whitbeck, Yoder, Hoyt, & Conger, 1999). Specifically, with regard to peer norms, if adolescents perceive that most of their peer group is sexually active, they are more likely both to intend to and subsequently to engage in sexual intercourse (Kinsman, Romer, Furstenberg, & Schwartz, 1998). Furthermore, the perception that one's peers are sexually active is related more strongly to an individual's subsequent sexual behavior than are the peers' actual behaviors (Cvetkovich & Grote, 1980). Therefore, simply believing that one's peers are sexually active, regardless of whether they are, may cause an adolescent to be more likely to initiate sexual activity.

Community. While much attention has been focused on individual-level factors associated with adolescents' sexual activity, a small but growing interest has been dedicated to evaluating community-level factors. Community variables appear to influence adolescent sexuality by shaping adolescents' access to opportunities for future social mobility, by providing or limiting access to reproductive services and information, and by providing

access to particular types of potential sexual partners (Billy, Brewster, & Grady, 1994). Adolescents living in neighborhoods with higher divorce, unemployment, and crime rates are more likely to initiate sexual activity at an early age (Brewster, Billy, & Grady, 1993; Brewster, 1994; Billy et al., 1994). Conversely, adolescents who live in neighborhoods with higher income rates, more neighborhood monitoring by community members, and more clinics are more likely to delay sexual activity (Brewster et al., 1993; Small & Luster, 1994).

Why Focus on Religion?

While there are many contributing factors to adolescents' sexual development, there are unique reasons for specifically focusing on the impact of religion. First, religion is a socialization agent much like parents or peers, but it has received considerably less attention (Regnerus, 2007). Organized religions have a powerful ability to establish norms and then to reinforce these normative beliefs and values by differentially promoting and sanctioning certain actions. Religious institutions also create religious communities that share these values, and the religious communities can exert a level of social control on the individual members' behaviors. Secondly, sexuality is of particular relevance to religious institutions, as most religious traditions specifically address human sexuality in their respective doctrines (Regnerus, 2007). Therefore, by addressing sexuality, religious traditions are recognizing the importance of sexuality as a human experience and consequently its relevance to one's spiritual and religious life. Furthermore, many religious traditions approach sexuality from a positive perspective, which is a marked departure from sociocultural tendencies to pathologize sexuality. Finally, religious institutions are not subject to federal sanctions on sexual education programming, which allows them to address sexuality in a comprehensive

way that integrates and contextualizes sexual decision-making into a larger faith-guided framework.

Religiosity

Adolescent sexuality is a complex phenomenon that clearly is influenced by a wide variety of biological, social, and cultural factors. In Kirby's (1999) previously described effort to identify important antecedents of adolescent sexual behavior, he created a category that he called "attachment to religious institutions," which encompassed a variety of aspects of religiosity. This study highlighted the apparent protective value of religiosity, as it was associated with a later sexual debut and lower number of sexual partners regardless of whether it was measured at the community, family, or individual level (Rostosky, Regnerus, & Wright, 2003). Despite the assumed importance of religiosity, there have been few theory-guided and empirically tested attempts to determine the mechanism by which it acts on sexual activity. However, consistent with an ecological framework (Perkins, Luster, Villarruel, & Small, 1998) or a "socialization influence framework" (Wallace & Williams, 1997), religion has been conceptualized as one socialization force among other forces present at the individual, familial, and extrafamilial levels. It is possible that religion acts at one or several of these levels. For example, one's sexual decisions could be influenced by his or her own personal religious beliefs, those of his or her parents, those of peers, or those of the wider sociocultural milieu.

The personal importance of religion in the lives of adolescents is a question that has garnered much interest in recent years. Currently, almost all American adolescents believe in God or a universal spirit, and approximately 90% of adolescents identify with a particular religious denomination (Gallup & Bezilla, 1992; Rostosky, Wilcox, Wright, & Randall,

2004). Approximately two-thirds of adolescents indicate that their religion is very or pretty important to them. While those who ascribe great importance to their religion are spread across a variety of denominations, they tend to cluster among theologically conservative, Pentecostal, and sectarian traditions (Smith, Faris, Denton, & Regnerus, 2003). Two-thirds of adolescents also indicate that they pray on either a daily or weekly basis (Smith et al., 2003), and half of all adolescents participate in their religious organizations through church/religious attendance, participation in the youth group, or both (Smith, Denton, Faris, & Regnerus, 2002). While religion appears to be important for the majority of adolescents, some group differences have emerged (Smith et al., 2003). For example, girls are more likely than boys to state that their religion is important to them and to pray more frequently. African American adolescents also attribute greater importance to their faith and pray more frequently than their Caucasian, Asian, or Hispanic counterparts. Additionally, youth from Southern regions in the U. S. report higher levels of religiosity than similar youth in North Central, Western, and Northeastern regions.

Not only do adolescents feel that religion is important in their lives, in general, but religiosity appears to have an impact on adolescents' sexual activity. Religiosity has been measured in several ways, one of which is dependent on whether individuals identify with a particular religious affiliation. Studies have begun to document an association between having a conservative religious affiliation and a delay in sexual debut. For example, using data from the National Longitudinal Survey of Youth, Beck, Cole, and Hammond (1991) demonstrated that Caucasian adolescents affiliated with institutionalized religious sects (e.g., Jehovah's Witness, Mormon, etc.) were less likely than adolescents from mainline Protestant denominations (e.g., Presbyterian, Lutheran, etc.) to have become sexually active over the

course of a four-year period of time. Female adolescents who belonged to the Baptist faith and male adolescents who belonged to a fundamentalist denomination (e.g., Church of Christ, United Brethren in Christ, etc.) both were less likely than adolescents from mainline Protestant denominations to have experienced sexual debut. Similarly, Bearman and Brückner (1999), using data from the National Longitudinal Study of Adolescent Health, documented that adolescents who identified as Catholics or conservative Protestants were less likely to have initiated sexual activity over an 18-month period than their mainline Protestant counterparts.

Frequency of church attendance is another commonly used measure of religiosity that has had a demonstrated association with adolescent sexual activity. To investigate the impact of adolescents' religious practices and beliefs on their sexual attitudes and behaviors, Wilcox, Rostosky, Randall, and Wright (2001) conducted a review of the literature published in peer-reviewed journals on these topics from 1980-2000. In their review, which identified 25 studies that utilized church attendance as a measure of religiosity, the overarching finding was that more frequent church attendance was associated with less permissive attitudes about sex. Additionally, among Caucasian adolescent boys and adolescent girls of any ethnic background, religious attendance was associated with a delay in sexual debut. Furthermore, once adolescents initiate sexual activity, greater church attendance was associated with less frequent sexual activity and greater contraceptive use among males but less contraceptive use among females.

Despite the historical tendency to measure religiosity using single item constructs, there is evidence to suggest that a multidimensional conceptualization of religiosity is more appropriate (Batson & Ventis, 1982; Gorsuch, 1984; Hood, Spilka, Hunsberger, & Gorsuch

1996). Although many studies exploring adolescent religiosity and sexuality have yet to employ a multidimensional measure of religiosity, it appears the recent research endeavors are moving in that direction. For example, Bearman and Brückner (2001) utilized a religiosity composite that included frequency of prayer, religious attendance, and importance of religion. Utilizing a nationally representative sample of 7-12th grade students, they found that adolescents who had higher levels of religiosity were more likely to delay sexual activity; this finding held across gender and Caucasian, Asian, and Hispanic ethnic groups. Similarly, in another nationally representative study, adolescents with higher religiosity (i.e., composite of importance of religion and church attendance) were less likely to become sexually active over a two-year period of time (Hardy & Raffaelli, 2003). Additionally, a distinction has been made between public and private religiosity. Nonnemaker, McNeely, and Blum (2003) investigated how public religiosity, defined as frequency of church attendance and youth group participation, and private religiosity, defined as frequency of prayer and importance of religion, impact adolescents' sexual activity. They found that although public and private religiosity were associated with delayed sexual debut, only public religiosity was associated with history of pregnancy and use of contraceptives at sexual debut. Taken collectively, this literature demonstrates the importance of assessing multiple dimensions of religiosity, and it suggests that religiosity may serve as a protective factor in adolescents' sexual experiences.

Faith-Based Sexual Education Programs

Faith-based sexual education is an intriguing area of study that has only begun to be investigated. Faith-based institutions are uniquely positioned to provide sexual education programs, in part because they are not subject to the federal guidelines that are imposed on

school-based sexual education efforts. Additionally, the literature has demonstrated a clear relationship between adolescents' religiosity and their sexuality. Furthermore, religious institutions have long been involved in community outreach, specifically working with youth (Whitehead, 2001). Thus, pairing religious institutions and sexual education programs appears to be a potentially successful merger, which the National Campaign to Prevent Teen Pregnancy (2001) has recognized. Preliminary investigations have suggested that some of religious institutions' strengths may be in their ability to address sex within a loving, mutual, relational, responsible, and committed framework, to place sex within a moral context, and to provide a connection with supportive adults (Whitehead, 2001).

Despite the potential of faith-based sexual education efforts, few have gained much public attention. One notable exception is the True Love Waits program, a Christian movement that was originally developed by Southern Baptists to help encourage and support adolescents to abstain from sexual activity until they are married (Whitehead, 2001). Adolescents are encouraged to make a "virginity pledge" in which they state their commitment to remaining abstinent until marriage. This pledge may take the form of a written contract or a public declaration. Since this movement began in 1993, it has become widespread across various communities. True Love Waits often organizes mass rallies in which speakers discuss the benefits of abstinence and encourage teens to take a pledge. The movement has attempted to create a teenage subculture in which virginity is popularized. However, it remains controversial and has a large number of critics.

While the benefits of abstinence have been extolled by programs like True Love Waits, there has been concern that abstinence does not provide certain protection against pregnancy and STDs, because so many adolescents fail to remain abstinent. Abstinence has

begun to be evaluated in the same way as other contraceptive methods, comparing the theoretical efficacy of the method when used perfectly to the actual effectiveness of the method as used in common practice (Haignere, Gold, & McDanel, 1999; Pinkerton, 2001; Trussell, 2004). One way in which the “actual” effectiveness of abstinence has been investigated is through the study of virginity pledges (Bearman & Brückner, 2001; Brückner & Bearman, 2005). It has been estimated that approximately 2.5 million adolescents have made public virginity pledges, which have been associated with delays in sexual debut up to 18 months when compared to non-pledgers (Bearman & Brückner, 2001). However, the majority of pledgers, up to 88%, did engage in premarital sex. Furthermore, pledgers who became sexually active were significantly less likely to use contraception than non-pledger peers, and the two groups had similar rates of STDs, although pledgers were less likely to have been tested. These findings led Brückner and Bearman (2005) to conclude that the positive effects of virginity pledges disappear by the end of the teenage years and that pledges of abstinence are not an effective way of protecting against STDs. Yet the virginity pledge movement represents only a small segment of the wider spectrum of faith-based sexual education programs about which strikingly little is known.

Cultural Values Regarding Sexuality

Much of the controversy over sexual education programs stems from the divergent cultural views regarding adolescent sexuality. In a study of the sexual values of twenty-four countries, Americans held strongly divergent views regarding premarital sex, with some strongly approving and others strongly disapproving (Widmer, Treas, & Newcomb, 1998). However, Americans collectively hold strikingly conservative views about premarital and teenage sex when compared to their European counterparts. Despite these conservative

views, American culture is one in which the glamorization of teenage sexuality is widespread. The mass media is a major source from which adolescents receive much of their information and messages about sexuality (Steyer, 2002). Recent investigations of media portrayals of sex indicate that 77% of prime time television programs contain sexual content, and among top ranked teen programs, shows that contain sexual content have an average of approximately 6.7 sex-related scenes per hour (Kaiser Family Foundation, 2005). Thus, the discrepancy between individuals' sexual values and the values presented in the wider sociocultural context leads to confusion regarding whether adolescent sexuality is a normative experience. This confusion is evidenced in the dissension regarding what type of sexual education programming to implement. On the one hand, the federal government has implemented abstinence-only education, which presupposes that adolescent sexuality is non-normative. Conversely, both developmental experts and the United Nations view comprehensive sexual education and access to reproductive services as a necessity for adolescents, as well as a human right, which suggests that they have adopted a normative perspective of sexuality (Haffner, 1995; Office of the United Nations, 1996). Thus, whether adolescent sexuality is viewed as a normative phenomenon influences not only the type of sexual education programs that are implemented but also the specific goals of these programs and how the programs' efficacy is evaluated. Within the academic community there is a paradigmatic shift occurring toward viewing adolescent sexuality as a normative experience, and this shift is beginning to be mirrored by health educators as they grapple with how to develop programs with goals that are truly relevant to adolescents' needs and experiences.

Present Study

Little is known about many of the faith-based sexual education initiatives sponsored by religious organizations. Yet these sexual education programs appear promising given the documented association between religiosity and adolescents' sexual behaviors, especially when this is coupled with religious organizations' unique ability to reach a large segment of the adolescent population in a setting that is not subject to governmental guidelines. Thus, the present study sought to expand the existing literature by evaluating sexual education programs that were run by local churches, synagogues, and religious organizations. This study attempted to move beyond the investigation of the virginity pledge movement to capture more accurately the types of programs that exist by comparing conservative sexual education programs whose goal was to promote abstinence and purity until marriage with more liberal sexual education programs whose goal was to provide comprehensive sexual education programs within a religious context. Not only were abstinence only and comprehensive programs compared, but within each program, adolescents' sexual attitudes, beliefs, and behaviors were compared before and after completing the program.

Hypotheses

Aim 1. The first aim of this study was to evaluate each of the programs' ability to achieve its stated goals by comparing adolescents' responses before and after completion of the program. Hypothesis 1 was that among adolescents from religious organizations utilizing abstinence only programs, there would be comparably low rates of sexual activity before and after the completion of the sexual education program. Hypotheses 2-4 were that adolescents who have completed abstinence-only programs would have less permissive attitudes about sex, more negative expectations about sex, and more negative beliefs about condoms than

their pre-program attitudes, expectations, and beliefs. For adolescents from religious organizations utilizing comprehensive sexual education programs, Hypothesis 5 was that there would be comparable levels of sexual activity among adolescents before and after completion of the program. Additionally, Hypotheses 6-7 were that after completion of the comprehensive sexual education programs, adolescents would have more positive beliefs about condoms and greater sexual self-efficacy than they did prior to beginning the comprehensive programs.

Aim 2. The second aim of this study was to compare the effects of the abstinence-only and comprehensive programs. Hypothesis 8 was that the average age of sexual debut would be older among adolescents from abstinence-only programs than adolescents from comprehensive programs. Hypotheses 9-10 were that, among the sexually active, adolescents from comprehensive programs would report more positive emotions following their first sexual experience and higher rates of contraceptive use when compared to adolescents from abstinence-only programs. Hypotheses 11-13 were that, among virgins, adolescents from abstinence only programs would have more negative expectations about sex, would report an older age at which they anticipate becoming sexually active, and would endorse more rule-bound, external reasons for avoiding sexual activity than virgins from comprehensive programs.

Methods

Data collection. The present study represents a follow-up to a qualitative investigation that sought to determine whether local churches and synagogues offered a sexual education program, and if so, what the program addressed (Freedman-Doan et al., 2007). More specifically, the purposes of this original qualitative study were to determine

whether local churches and synagogues had a sexual education program, the degree to which it was formalized, the specific goals of the program, the specific content areas that were discussed, what prompted the development of the program, and what the youth response had been (Please see Appendix A for the full questionnaire). In the initial study, 185 religious institutions were identified that were within a 25-mile radius of Ypsilanti and that identified as either Mainline Protestant, Evangelical Protestant, Catholic, or other Liberal (e.g., Jewish, Unitarian Universalists). Of these, only religious institutions that had 300 or more members were included in the study, because it was determined that smaller churches/synagogues were unlikely to have youth programming. Seventy-three churches and synagogues participated in the study, and of those, 48 churches/synagogues had some type of sexual education program, although they varied widely with regard to level of formalization. The churches and synagogues that had formal sexual education programs were recontacted for participation in this study. They also were asked to identify any other churches and synagogues that may have had a similar program.

Initially, 18 of the 48 churches from the prior qualitative study were contacted, because they had formal and regularly occurring programs that would be appropriate for a program evaluation. Of those, 3 agreed to participate in the present study. Of the remaining 15 congregations, 9 did not respond to phone calls or emails inviting them to participate, 3 declined, 2 were not conducting the program this year, 1 program indicated that the youth were too young to participate in the study (i.e., under 13 years old), and 1 program initially agreed but then ultimately declined prior to data collection. The search radius then was increased to an approximately 50-mile radius around Ypsilanti, and religious schools were contacted along with churches and synagogues. An additional forty-seven religious

organizations (i.e., churches, synagogues, and religious schools) were contacted. Of these, 3 organizations participated in the present study (for a total of 6 organizations). Ten organizations declined participation. Thirty-two organizations did not return phone calls or emails inviting them to participate, and two organizations were too small or simply did not have a program.

Once a religious leader agreed to participate in the study, written consent was obtained from the parents of the youth. The consent was obtained in one of two ways, depending upon the religious organizations' procedures. Some organizations required parents to attend an informational meeting before their child began the sexual education programs. In this scenario, the researcher attended this meeting and obtained the parents' written consent directly. For organizations that did not have parental meetings, the religious organization assisted by sending home a letter explaining the study and a consent form to the parents of youth who were eligible to participate in the program. These signed consent forms were brought to the data collection by the youth.

Once consent was obtained from the religious organizations and from the parents, the researcher attended the religious organizations' youth program to survey the youth. First, they were presented with an assent form detailing the study and informing them about the voluntary nature of the study, confidentiality, and the risks and benefits of participation. Only those youth who gave their assent completed the survey. The survey was a paper-based questionnaire that was administered in the church, synagogue, or religious school. Youth were spread out throughout the room to maximize privacy while completing the survey. The survey was tailored so that if the participant was sexually active, he or she received questions regarding those experiences. However, if the participant was not sexually active, he or she

was directed past those questions. Additionally, to maximize confidentiality, participants were assigned identification numbers, which appeared on the questionnaire that each completed. A master list of participant's names and ID numbers is kept in a locked file cabinet in the dissertation chair's office and in a password protected computer file. Complete surveys are also kept in a locked file cabinet. Upon completing each portion of the survey, each participant received a \$10 gift card, for a total of \$20 if they completed both the pre- and post-survey.

Participants. The present study was approved by the Eastern Michigan University Human Subjects Committee on July 18, 2008, and reapproved on July 18, 2009. Participants in this study ranged from ages 13-18 years old with an average age of 15.5 years ($SD = 1.54$). They were surveyed prior to beginning a sexual education program at their church, synagogue, or religious school and again after completion. One hundred twenty-eight ($N = 128$) participants completed the pre- and post-tests. Nineteen participants (15%) were male and 109 participants (85%) were female. In an effort to maximize the small sample size, male participants were retained despite representing a small proportion of the overall sample; the possible limitations of this will be addressed in the discussion section. With regard to race/ethnicity, there were 99 (77%) Caucasian, 8 (6%) African American, 5 (4%) Asian/Pacific Islander, 5 (4%) Hispanic/Latino/Latina, 5 (4%) Bi/Multiracial, and 6 (5%) Other identified participants. With regard to socioeconomic status, one (1%) participant indicated, "We have barely enough to get by." Twenty-three (18%) participants indicated, "We have enough to get by, but no more." Sixty-six (52%) participants indicated, "We definitely have enough of everything." Thirty-one (24%) participants indicated, "We have

plenty of extras but no luxuries.” Seven (5%) participants indicated, “We have plenty of luxuries.”

Participants were divided into three groups depending upon the content and length of the program they attended. Abstinence-only programs were defined as programs that reported promoting abstinence and/or purity as one of the main goals and did not discuss contraceptives. Comprehensive programs had a variety of goals but must discuss contraceptives and other health-related information. Programs were classified as long or short based on Kirby’s (2001) finding that programs under 14 hours tended to be ineffective. Thus, this led to the three groups: comprehensive-long programs ($n = 43$), comprehensive-short programs ($n = 66$), and abstinence-only short programs ($n = 19$).

Preliminary analyses were conducted to determine whether the participants who attended the three program types differ on demographic variables. There are not group differences across programs with regard to race and SES. The sample is overwhelming female ($n = 109$, 85% vs. $n = 19$, 15% male). A chi-square analysis revealed gender differences across programs, $\chi^2(2, n = 128) = 19.82, p < .001$. Among the comprehensive-long, comprehensive-short, and abstinence only-short programs, the gender breakdown was 95% female vs. 5% male, 88% female vs. 12% male, and 53% female vs. 47% male, respectively. A one-way analysis of variance revealed age differences across programs, $F(2, 125) = 77.23, p < .001$. A Tukey post-hoc analysis revealed that all the programs significantly differed by age with the comprehensive-long participants being oldest ($M = 17.05, SD = 1.00$) followed by the abstinence only-short participants ($M = 15.78, M = 1.43$) followed by the comprehensive-short participants ($M = 14.52, SD = .93$). The implications of

these age and gender differences among the groups will be addressed in the discussion section.

Measures

Youth minister survey. Please see Appendix B for the full survey. The youth minister (or whoever administered the sexual education program) was asked to fill out a brief survey regarding the goals of the sexual education program. The goals included in the survey reflect those goals that were listed by the ministers during the initial qualitative study (Freedman-Doan et al., 2007). Additionally, using Kirby's (2001) guidelines regarding the distinguishing features of effective sexual education programs as a basis, the youth ministers were asked questions regarding length of the program, the types of topics that were covered, if relevant information was provided to both sexually active and inactive students, and whether the leaders were formally trained. The information provided by the youth leader, namely the goals and length of the program, were used to classify the programs into comprehensive and abstinence-only programs as defined by Kirby (2001).

Youth questionnaire. Please see Appendix C for the individual items that compose each scale or construct.

Demographics. Basic demographic questions regarding age, gender, ethnicity, and family socioeconomic background were included.

Religiosity. Four standard questions regarding frequency of prayer, frequency of church attendance, importance of religion, and involvement in church groups were included. These items were used as single items. The Religious Commitment Inventory (RCI; McCullough, Worthington, Maxey, & Rachal, 1997) also was included. This is a 17-item scale with an internal consistency reliability of .94 (McCullough et al., 1997). Three new

items were included that were designed specifically for use in this study. These items were: I employ my religious or spiritual beliefs as a basis for how to act and live on a daily basis, I am a religious person, and I am a spiritual person.

A direct oblimin maximum likelihood factor analysis was conducted on the 17 items from the RCI and the 3 items that were specifically designed for this study to ensure that the factor structure held for this sample. A direct oblimin maximum likelihood factor analytic strategy was selected based on research (Costello & Osborne, 2005) that has suggested that this is a more applicable strategy than other factor analytic procedures (e.g., the frequently used principal components factor analysis with varimax rotation) for social science research in which the resulting factors are likely to be correlated. Initially, a four-factor solution emerged without a clear structure matrix. However, 13 of the 20 items loaded on one factor. Another direct oblimin maximum likelihood factor analysis was conducted with one forced factor, and absolute values of less than 0.30 were suppressed. All but one item loaded (Please see Appendix D for factor table). This same procedure was then repeated with the same items from the Time 2 administration of the survey, and all 20 items loaded on the single forced factor (Appendix D). Given this finding and the fact that the one item that did not load in the Time 1 data was an original item from the previously validated RCI scale, all 20 items were retained in one Religiosity Scale. To ensure adequate reliability, alpha values were conducted for the Time 1 ($\alpha = .93$) and Time 2 ($\alpha = .94$) Religiosity Scale and are presented in Table 1. Finally, to maintain adequate sample size, participants must have completed 80% of the items in the Religiosity Scale to be included in the subsequent analyses.

Attitudes about sex. The Brief Sexual Attitudes Scale was used, which consists of twenty-three Likert-type questions that comprise four subscales (Brief SAS; Hendrick, Hendrick, & Reich, 2006). The Permissive subscale has an alpha value of .93 and contains ten items that address the acceptability of casual sex (Hendrick et al., 2006). The Birth Control subscale has an alpha value of .84 and contains three items that assess whether birth control is considered part of responsible sexual experiences (Hendrick et al., 2006). The Communion subscale has an alpha value of .71 and contains five items that assess the degree to which sex is viewed as a special, loving act (Hendrick et al., 2006). The Instrumentality subscale has an alpha value of .77 and contains items that assess the extent to which sex is perceived as a primarily physical act (Hendrick et al., 2006).

To ensure that the underlying four factor structure of the Brief Sexual Attitudes Scale held for the present sample, factor analyses were conducted. Using the Time 1 data, a direct oblimin maximum likelihood factor analysis was conducted on the 23 items that comprise the Brief SAS. Initially, a six-factor solution emerged; the structure matrix resembled that of the factor structure from the originally validated measure, although there were some individual item inconsistencies. Another direct oblimin maximum likelihood factor analysis was conducted, and four factors were forced. The items loaded reasonably well, with all but two items loading as expected (Please see factor table in Appendix E). These procedures were then repeated with the Time 2 data. Initially, a five-factor solution emerged with all but two items loading as expected. Then another direct oblimin maximum likelihood factor analysis was conducted with four factors forced, which resulted in the expected structure matrix (Appendix E). Given that the Brief SAS has been previously validated and the factor structure held with the Time 2 data in the present study, it was decided to utilize the four

factors as intended in the subsequent analyses. To ensure the reliability of these scales, internal consistency reliability values were calculated and are presented in Table 1. All of the scales had acceptable alpha values. Additionally, to maintain adequate sample size, participants must have completed 80% of the items in each of the four subscales to be included in the subsequent analyses.

To further assess sexual attitudes, eight Likert-type questions were adapted from the National Survey of Adolescents and Young Adults: Sexual Health Knowledge, Attitudes and Experiences (Hoff, Greene, & Davis, 2003), and six Likert-type questions were specifically designed for this study. These questions addressed perceptions of oral sex, including whether oral sex constitutes “sex,” religious perspectives on sexual activity, reasons for abstinence, and perceived pressure to have sex. These items are presented in Appendix C.

The psychometric properties of the questions from the National Survey of Adolescents and Young Adults were not available. To determine the factor structure of these items and the six items designed for this study (14 items in total), a direct oblimin maximum likelihood factor analysis was computed using Time 1 data. A four-factor solution emerged (See Appendix F). The factors appeared to assess attitudes about oral sex, attitudes about the acceptability of premarital sex, reasons for abstinence, and attitudes regarding the pressure to have sex/the inevitable nature of premarital sex. Another direct oblimin maximum likelihood factor analysis was computed using Time 2 data. Initially a five-factor solution emerged. A four-factor solution was then forced (Appendix F), and the items loaded in a similar fashion to the Time 1 data, although there were a few inconsistencies. It was decided to retain three of the four factors; the “Reasons for Abstinence” scale was dropped as these items did not really reflect attitudes about sex, and reasons for abstinence are assessed utilizing a separate

scale later in the analyses. Alpha values were computed for each of the remaining three scales. The “Pressure to Engage in Sex” scale was dropped due to low reliability ($\alpha = .57$ at Time 1 and $\alpha = .59$ at Time 2). The alpha values for the Attitudes about Oral Sex and Acceptability of Premarital Sex Scales were adequate and are presented in Table 1.

Expectancies about sex. Eight Likert-type questions were adapted from the National Longitudinal Study of Adolescent Health (Add Health; Bearman, Jones, & Udry, 1997). The questions addressed participants’ views on the potential outcomes of sex, including greater status, increased attractiveness, parental disappointment, and guilt.

The psychometric properties of these questions from ADD Health were not available. As such, factor analyses were conducted in an attempt to determine whether these items hung together as a single scale. Using the Time 1 data, a direct oblimin maximum likelihood factor analysis was conducted, and a three factor solution emerged. While the factor structure was not clearly discernable, it appeared that items were loading according to positive and negative expectations. As such, a second direct oblimin maximum likelihood factor analysis was conducted with two forced factors. The factor structure that emerged was consistent with positive and negative expectations about sex (Please see Appendix G). This procedure was repeated with the Time 2 data. The results of the direct oblimin maximum likelihood factor analysis with two forced factors were consistent with positive and negative expectations about sex (Appendix G). To assess the reliability of these scales, alpha values were computed. Ultimately, the Negative Expectations scale was dropped due to poor reliability ($\alpha = .50$ for Time 1 and $\alpha = .55$ for Time 2). The Positive Expectations had acceptable reliability ($\alpha = .70$ for Time 1 and $\alpha = .71$ for Time 2) and was retained for subsequent analyses.

Beliefs about condoms and sexually transmitted diseases. Eleven Likert-type questions were drawn from the National Survey of Adolescents and Young Adults: Sexual Health Knowledge, Attitudes (Hoff et al., 2003), and they addressed issues regarding the effectiveness of condoms, the embarrassment of obtaining condoms, the difficulty of discussing condoms/STDs with partners, how STDs are spread, and the health effects of STDs.

The psychometric properties of these items were not available from the National Survey of Adolescents and Young Adults. As such, factor analyses were conducted using the present sample in an attempt to determine the underlying factor structure of the items. Using Time 1 data, a direct oblimin maximum likelihood factor analysis was conducted, and four factors emerged without a discernable structure matrix. It was decided to re-run the factor analysis with two forced factors, as the items assess both beliefs about condoms and STDs. The items that loaded on one factor appeared to assess factual knowledge about condoms and STDs; however, when the alpha value was calculated for this tentative scale it was quite poor ($\alpha = .24$). The relationship among the items that loaded on the second forced factor was less clear. This same procedure was repeated using the Time 2 data. Again, a four-factor solution emerged without a discernable structure matrix. When two factors were forced, the items assessing factual knowledge about STDs and condoms tended to load on one factor, while items addressing embarrassment or difficulty preparing for sexual encounters loaded on the other factor. Alpha values were calculated for each factor; the embarrassment items had an alpha value of .64, while the factual items had an alpha value of .28. Given the lack of consistency of these items within and between the two administrations of the survey, it was decided to drop this scale. However, individual item analyses were conducted.

Sexual behaviors. Standard questions regarding whether adolescents have engaged in a variety of sexual behaviors ranging from hand-holding to sexual intercourse were included. These questions were modeled after those asked in the Add Health survey (Bearman et al., 1997). Those who had not engaged in any given behavior were asked to estimate the age at which they anticipate that they may engage in this behavior or they could indicate that they never want to try it. Additionally, standard questions were included regarding number of sexual partners and contraceptive use, as well as reasons for becoming sexually active.

For sexual activity, a summative scale was created. If a participant had engaged in a particular behavior, this was coded as 1. If the participant had not engaged in the behavior, this was coded as a 0. These individual items were then summed together to create one sexual activity scale that ranged from 0-7. The behaviors included holding hands, kissing, touching a partner under his/her clothes, touching a partner's genitals, receiving oral sex, giving oral sex, and sexual intercourse. Please see Table 2 for descriptives.

Contraceptive use was assessed at the most recent intercourse experience and over the past 12 months. Participants were asked to check each form of birth control that they had used (condom, birth control pills, birth control shot/patch/ring, emergency contraception/morning after pill, rhythm method/natural family planning, and pulling out). A summative scale was created that assigns one point to each of the following contraceptive methods that were used; there are two scales, one for recent intercourse and one for the past twelve months. Additionally, a second "effective" contraceptive use scale was created. Participants were assigned a point only if they reported using a condom, birth control pills, birth control shot/patch/ring, and emergency contraception/the morning after pill. Thus the

scale ranges from 0-4. The rhythm method/natural family planning and “pulling out” were not included in the “effective” contraceptive scale, as neither are reliable forms of pregnancy and/or STD protection. An “effective” contraceptive scale was created for most recent intercourse and over the past 12 months. Please see Table 2 for descriptives.

Feelings after sexual debut. The sexually active participants were asked to indicate how they felt after their first sexual intercourse experience. Sorenson (1973) found significant gender differences in the types of feelings that adolescents experience subsequent to their first sexual intercourse experience. The possible emotions were adapted from Sorenson’s work and included emotions such as excited, fulfilled, guilty, and scared. Fourteen emotions were included that were rated on a 5-point Likert-scale. Items were coded such that a response of 5 indicated more negative emotion, while a response of 1 indicated a more positive emotion.

To determine the underlying factor structure of these items, two direct oblimin maximum likelihood factor analyses with two forced factors were conducted for the Time 1 and Time 2 data. The solution matrix that emerged was not clearly interpretable and did not suggest the presence of two subscales that assess positive and negative emotions. This is likely due to the complex nature of feelings subsequent to first intercourse, as individuals are likely to have both positive and negative feelings. As such, these items were used individually in subsequent analyses rather than in one scale.

Sexual self-efficacy. The Contraceptive Self-Efficacy Instrument (Levinson, 1986) contains questions regarding sexually active participants’ ability to consent or to refuse sex and to plan to use contraceptives. This is an 18-item scale using a 5-point Likert scale. It has previously been shown to have a Cronbach’s alpha value of .73 (Levinson, 1986). It also has

been shown to have an underlying four factor structure; these factors appear to assess planning for sex, assuming person responsibility for sex, asserting one's desire not to have sex, and feelings of arousal (Levinson, 1986). The Contraceptive Self-Efficacy was modified slightly for the present study. For example, two items were dropped as they were redundant with other items ("Even if my partner can talk about sex, I can't tell my partner how I really feel about sexual things" and "If my partner and I were getting turned on sexually and I don't want to have sex, I could easily tell him/her NO and mean it"). Additionally, two questions regarding specific contraceptive methods that are no longer used or are used extremely infrequently among adolescents were removed, and one item regarding going to a clinic and/or drugstore to obtain birth control was added; there were a total of 15 items used in the present study.

Factor analyses were conducted to determine whether the previously validated subscales held for the present study. Using Time 1 data, a direct oblimin maximum likelihood factor analysis was conducted. A five-factor solution emerged without a discernable structure matrix. The factor analysis was then repeated with four forced factors; however, the structure matrix differed from what was previously reported by Levinson (1986). Another direct oblimin maximum likelihood factor analysis was conducted using Time 2 data. A four-factor solution emerged, but this too was different from what had been established previously (Levinson, 1986). These differences may be attributed to the small sample size and the modifications that were made to the scale for the present study. However, previous research (e.g., Levinson, Wan, & Beamer, 1998) has suggested that the Contraceptive Self-Efficacy Instrument may be most useful when used as a total item set, and subsequent analyses are conducted at the individual item level. As such, this is how the scale

was used in the present study. Additionally, alpha values were computed for the 15-item scale to ensure reliability and are presented in Table 1. Finally, to maintain sample size, participants must have completed at least 80% of the items to have been included in subsequent analyses.

Reasons for abstinence. Youth who were not sexually active were asked to indicate reasons for their decisions. These questions were designed specifically for this study, and they included reasons such as not feeling ready, religious beliefs, health concerns, and external sanctions. There were 19 questions using a 5-point Likert response scale.

Factor analytic strategies were used in an attempt to determine the underlying factor structure of the items. One item (“My partner doesn’t want to”) was not included in these analyses, as its inclusion severely limited sample size (participants were directed to skip this question if they did not have a partner, and a majority of the participants did indeed skip the item). A direct oblimin maximum likelihood factor analysis was conducted on the 18 items from Time 1. A four-factor solution emerged. Items citing religious reasons for abstinence tended to cluster on one factor, while items that assessed other reasons for abstinence (e.g., personal and external reasons) were distributed across the other three factors. The factor analysis was then repeated with three and then two forced factors. Neither of the resulting factor solutions provided a clearer picture of the underlying structure matrix. Another direct oblimin maximum likelihood factor analysis was conducted using the Time 2 data. A four-factor solution emerged; however, the structure matrix was dissimilar to that produced using the Time 1 data. Namely, the religious reasons for abstinence were spread across the four factors. The factor analysis was repeated, forcing three then two factors, but this did not elucidate a clearer structure matrix. As such, it was decided to conduct item level analyses.

Table 1

Reliability of the Scales

Scale	N	Mean	SD	Alpha	Alpha(Standardized)
Religiosity2 (T1, RCI)	116	2.93	.83	.93	.93
Religiosity2 (T2, RCI)	122	2.94	.88	.94	.94
Brief SAS: Permissive Subscale (T1)	120	4.19	.73	.90	.90
Brief SAS: Permissive Subscale (T2)	125	4.26	.72	.91	.91
Brief SAS: Birth Control Subscale (T1)	127	2.24	1.04	.88	.89
Brief SAS: Birth Control Subscale (T2)	127	2.22	1.06	.91	.91
Brief SAS: Communion Subscale (T1)	123	2.63	.75	.69	.70
Brief SAS: Communion Subscale (T2)	127	2.21	.70	.68	.70
Brief SAS: Instrumentality Subscale (T1)	122	3.43	.68	.68	.69
Brief SAS: Instrumentality Subscale (T2)	127	3.61	.68	.73	.73
Attitudes about Oral Sex (T1)	127	3.55	.83	.70	.70
Attitudes about Oral Sex (T2)	126	3.62	.87	.77	.77
Attitudes Re: Acceptability of Premarital Sex (T1)	127	2.45	1.10	.86	.86
Attitudes Re: Acceptability of Premarital Sex (T2)	125	2.10	1.13	.86	.87
Positive Expectations about Sex (T1)	127	3.07	.74	.69	.70
Positive Expectations about Sex (T2)	128	3.03	.76	.71	.71
Contraceptive Self-Efficacy (T1)	21	3.87	.53	.74	.76
Contraceptive Self-Efficacy (T2)	27	3.96	.60	.81	.83

Table 2

Descriptive Data for the Sexual Activity and Contraceptive Use Scales

Scale	N	Mean	SD
Sexual Activity T1	121	2.91	2.29
Sexual Activity T2	127	3.17	2.39
Contraceptive Use Past 12 months T1 (all methods)	20	2.70	1.03
Contraceptive Use Past 12 months T2 (all methods)	26	2.69	1.05
Contraceptive Use Past 12 months T1 (effective methods)	21	1.67	.73
Contraceptive Use Past 12 months T2 (effective methods)	26	1.69	.84
Recent Contraceptive Use T1 (all methods)	21	1.62	.59
Recent Contraceptive Use T2 (all methods)	27	1.63	.74
Recent Contraceptive Use T1 (effective methods)	21	1.05	.59
Recent Contraceptive Use T2 (effective methods)	27	1.07	.62

Statistical Analyses

The first aim of the study was to evaluate the abstinence-only and comprehensive programs' ability to achieve their stated goals by comparing the sexual activity, sexual attitudes, and sexual self-efficacy of adolescents before and after completion of the program. Chi-squares, paired t-tests, and descriptive analyses, where appropriate, were used to compare group differences (e.g., pre and post) across the aforementioned factors. The second aim of the study was to compare the effects of abstinence-only and comprehensive programs. Chi-squares and analyses of variance (ANOVA), where appropriate, were used to compare the rates of sexual activity of adolescents from abstinence-only and comprehensive program. ANOVAs also were used to compare the reasons for abstinence of virgins from the abstinence-only and comprehensive programs. The third aim was exploratory and post-hoc in nature. ANOVAs were used to assess group differences in post program sexual attitudes. Additionally, ANCOVAs were used to determine the extent of the influence of the type of program that was attended on sexual attitudes and behaviors after the effects of religiosity and age were controlled.

Results

Aim 1: Within Group Analyses

Abstinence only-short program.

Sexual activity. The first goal was to determine whether completion of the abstinence-only program would have an effect on behavior. A paired t-test revealed that participants who took an abstinence-only sexual education program did not have significantly different rates of sexual activity before ($M = 2.53$, $SD = 2.18$) and after ($M = 2.47$, $SD = 2.24$) completion of the program, $t(16) = .29$, $p = .77$. Interestingly, participants reported slightly less sexual activity after completing the program than they did prior to the program. This is an unusual finding given that once one has engaged in a given sexual behavior (e.g., kissing), there is no opportunity to no longer have kissed another person. Possible explanations for this discrepancy in reporting will be addressed in the discussion section. Additionally, descriptive analyses were conducted for each specific sexual behavior (Table 3). Seven separate McNemar's chi-squares, one for each of the sexual behaviors, were conducted, and each was non-significant for pre-post program changes.

Table 3

Frequency of Sexual Behaviors Pre and Post Abstinence-Only Program Completion

Outcomes	Pre-Program		Post-Program	
	n	%	n	%
Held hands				
Yes	16	84	15	79
No	3	16	4	21
Kissed				
Yes	13	68	13	68
No	6	32	6	32
Touched under clothes				
Yes	6	35	7	37
No	11	65	12	63
Touched genitals				
Yes	4	24	6	32
No	13	76	13	68
Received oral sex				
Yes	3	17	2	11
No	15	83	17	89
Gave oral sex				
Yes	4	22	4	21
No	14	78	15	79
Sexual intercourse				
Yes	4	21	4	21
No	15	79	15	79

Attitudes. The next goal was to determine the effect of the program on participants' attitudes. A paired t-test analysis revealed a significant difference in the participants' ratings of the Communion scale, $t(18) = 3.08, p < .01$. This is a scale that assessed the specialness attached to sexual activity. After completing the program, participants believed sex was more special ($M = 2.00, SD = .74$) than they did prior to the program ($M = 2.43, SD = .81$). Three additional paired t-tests revealed that there were not significant differences in the participants' permissive/conservative attitudes about sex, birth control, or the physical nature of sex. No significant differences were found with regard to participants' expectations about sex, attitudes about oral sex, or attitudes about premarital sex. Eleven separate paired t-tests were conducted to assess any pre-post program changes in participants' knowledge of and beliefs about condoms and STDs. However, all eleven paired t-test were non-significant. Finally, there unfortunately were not enough sexually active participants ($n = 2$) to determine any information about the program's effect on participants' sexual self-efficacy.

Comprehensive-short programs.

Sexual activity. A paired t-test revealed that participants who took a comprehensive-short program had significantly different rates of sexual activity before and after completion of the program, $t(62) = -2.72, p < .01$. Participants reported having engaged in more sexual activity after completion of the program ($M = 2.17, SD = 1.71$) than they did prior to the program ($M = 1.90, SD = 1.56$). Descriptive analyses were conducted for specific sexual behaviors (Table 4). Seven separate McNemar's chi-squares, one for each of the sexual behaviors, were conducted. A McNemar's chi-square revealed a significant increase ($p < .05$) of an additional 9.4% of participants (for a total of 25% of participants) who reported

having touched a partner's genitals after completion of the program. The remaining six McNemar's chi-squares for the rest of the sexual behaviors were non-significant.

Table 4

Frequency of Sexual Behaviors Pre and Post Comprehensive-Short Program Completion

Outcomes	Pre-Program		Post-Program	
	n	%	n	%
Held hands				
Yes	53	82	57	86
No	12	18	9	14
Kissed				
Yes	39	60	41	62
No	26	40	25	38
Touched under clothes				
Yes	14	22	19	29
No	50	78	47	71
Touched genitals				
Yes	10	16	17	26
No	54	84	49	74
Received oral sex				
Yes	3	5	6	9
No	60	95	60	91
Gave oral sex				
Yes	4	6	5	8
No	59	94	61	92
Sexual intercourse				
Yes	2	3	4	6
No	61	97	62	94

Attitudes. With regard to attitudinal change, a paired t-test revealed that there was a significant difference in participants' responses to the Communion scale, $t(65) = 6.01, p < .001$. This demonstrates that the degree to which the participants felt that sex was a special act increased after completion of the program ($M = 2.25, SD = .74$) compared to their pre-program attitudes ($M = 2.81, SD = .78$). An additional paired t-test revealed a significant difference in participants' responses to the Instrumentality scale, $t(64) = -3.13, p < .01$. This shows that participants believed that sex is less about one's physical pleasure after completion of the program ($M = 3.52, SD = .69$) than they did prior to the program ($M = 3.29, SD = .62$). Two additional paired t-tests revealed that there were not significant differences in the degree to which participants held either permissive or conservative attitudes about sex or birth control. No significant differences were found with regard to participants' expectations about sex, attitudes about oral sex, or attitudes about premarital sex.

Eleven separate paired t-tests were conducted to assess any pre-post program changes in participants' knowledge of and beliefs about condoms and STDs. There was a significant difference in participants' beliefs regarding whether it would be worthwhile to have sex without using a condom, $t(65) = 2.05, p < .05$. Participants believed that sex without a condom would not be worth the risk to a greater degree after they completed the program ($M = 1.88, SD = 1.03$) than they did prior to program completion ($M = 2.24, SD = 1.31$). Additionally, participants were more likely to report that STDs have serious health consequences after completing the program ($M = 4.48, SD = .82$) than they did prior to completing the program ($M = 4.16, SD = 1.01$), $t(63) = -2.73, p < .01$. Finally, there

unfortunately were not enough sexually active participants ($n = 1$) to determine any information about the program's effect on participants' sexual self efficacy.

Comprehensive-long programs.

Sexual activity. A paired t-test revealed that participants who took a comprehensive-long program had significantly different rates of sexual activity before and after completion of the program, $t(39) = -2.54, p < .05$. Participants reported having engaged in more sexual activity after completion of the program ($M = 4.98, SD = 2.36$) than they did prior to the program ($M = 4.55, SD = 2.33$). Descriptive analyses were conducted for specific sexual behaviors (Table 5). Seven separate McNemar's chi-squares, one for each of the sexual behaviors, were conducted. A McNemar's chi-square revealed an increase that approached statistical significance ($p = .062$) of an additional 11.9% of participants (for a total of 50% of participants) who reported having engaged in sexual intercourse after completion of the program. None of the other McNemar's tests were significant.

Table 5

Frequency of Sexual Behaviors Pre and Post Comprehensive-Long Program Completion

Outcomes	Pre-Program		Post-Program	
	n	%	n	%
Held hands				
Yes	42	100	43	100
No	0	0	0	0
Kissed				
Yes	36	86	38	88
No	6	14	5	12
Touched under clothes				
Yes	31	72	32	74
No	12	28	11	26
Touched genitals				
Yes	26	60	28	65
No	17	40	15	35
Received oral sex				
Yes	19	45	22	52
No	23	55	20	48
Gave oral sex				
Yes	21	50	23	55
No	21	50	19	45
Sexual intercourse				
Yes	17	40	21	50
No	26	60	21	50

Age of sexual debut, frequency of sex, and type of partner. Initially, it was proposed to investigate between-group differences among sexually active participants. However, due to the low number of sexually active participants ($n = 22$ pre; $n = 27$ post) and the disproportionate distribution of these participants across groups ($n = 17$ pre and 21 post in the comprehensive-long group), within-group analyses were conducted for the comprehensive-long group only. Participants from the comprehensive-long program ($n = 21$) reported an average sexual debut at 16.19 years old ($SD = .87$) post program; this figure did not significantly differ from their pre-program reports. With regard to their sexual experiences in the past 12 months, 9% ($n = 2$) reported that they had had sex only one time, 48% ($n = 10$) reported that they had had sex more than once but with only one partner, and 43% ($n = 9$) reported that they had had sex more than once with difference people. On average, participants reported having 1.57 ($SD = 1.12$) sexual partners over the past 12 months. Frequency data regarding the type of partner with whom the participants had sexual intercourse are presented in Table 6. Most commonly, participants reported having sexual intercourse with a boyfriend or friend. In a minority of cases, participants reported having sex with a casual acquaintance or “other” person (generally an ex-boyfriend).

Table 6

Types of Sexual Partners Reported by Participants from the Comprehensive-Long Programs

Partner Type	Pre-Program		Post-Program	
	n	%	n	%
Boyfriend				
Yes	14	82	14	67
No	3	18	7	33
Girlfriend				
Yes	0	0	0	0
No	17	100	21	100
Friend				
Yes	5	29	9	43
No	12	71	12	57
Casual Acquaintance				
Yes	4	23	4	19
No	13	77	17	81
Other				
Yes	2	12	3	14
No	15	88	18	86

Reasons for first sexual intercourse. With regard to what motivated them to have sex for the first time, participants cited being in love (76%, n = 16) and feeling ready/mature (81%, n = 17) as the most important reasons. Other more moderately important reasons were feeling horny (43%, n = 9) and curiosity (48%, n = 10). Of note, 90% (n = 18) reported that their religious values were *unimportant* in guiding them to this decision; other *unimportant* factors included the influence of substances (72%, n = 15), fear of losing one's partner (81%, n = 17), peer pressure (71%, n = 15), partner pressure (76%, n = 16), desire to appear more attractive (81%, n = 17), force (95%, n = 20), and boredom (100%, n = 21).

Feelings after first intercourse. Participants reported a mix of strong feelings after their first intercourse experience. Participants were mostly likely to indicate that they felt close to their partner (M = 3.62, SD = 1.32) following their first intercourse, with 67% of participants indicating that they felt this quite a bit or a lot. The next most common feeling that participants reported was feeling scared/worried (M = 3.24, SD = 1.18); 43% of participants reported that they felt scared/worried quite a bit or a lot. Third most commonly, participants reported feeling mature (M = 3.19, SD = 1.17), with 43% indicating that they felt mature quite a bit or a lot. Fourth most commonly, participants reported feeling excited/happy (M = 3.10, SD = 1.22), with 48% of participants reporting that they felt excited/happy quite a bit or a lot. Interestingly, the least common feeling that participants endorsed was “content, because God understood that my partner and I loved each other” followed by “used,” “sexy,” and “insecure about the relationship.”

Contraceptive use over the past year. Participants' contraceptive use over the past 12 months was assessed. Two paired t-tests revealed no changes in the participants' contraceptive use pre- and post-program completion. With regard to contraceptive use in the

past 12 months, 95% ($n = 20$) of participants reported condom use, and of those 70% ($n = 14$) reported having used condoms at most or all intercourse experiences. Thirty-three percent ($n = 7$) of participants reported birth control pill use, and of those 86% ($n = 6$) reported using birth control pills at all intercourse experiences. Twenty-nine percent ($n = 6$) of participants reported having used the morning-after pill/emergency contraceptives, and 100% of these participants reported their usage as “some of the time.” Nineteen percent ($n = 4$) reported using the rhythm/natural family planning method, and of those 75% ($n = 3$) reported using it most or all of the time. Eighty-six percent ($n = 18$) of participants reported using the “pulling out” method, and of those 56% ($n = 10$) reported having used this method most or all of the time. On average, participants reported having used 2.62 ($SD = .97$) contraceptive methods over the past 12 months. When ineffective methods are not included (e.g., rhythm method and pulling out), the average declines to 1.57 ($SD = .81$) methods.

Contraceptive use at recent intercourse. With regard to contraceptive use at most recent intercourse experience, 71% ($n = 15$) used condoms, 29% ($n = 6$) used birth control pills, 57% ($n = 12$) used pulling out, and 5% ($n = 1$) used no birth control method. On average, participants reported having used 1.57 ($SD = .68$) contraceptive methods at their last intercourse experience. When ineffective methods are not included, the average declines to 1.00 ($SD = .55$) method.

Attitudes. The program’s effect on participants’ attitudes also was assessed. A paired t-test revealed a significant difference in the participants’ responses to the Communion scale, $t(42) = 2.32, p < .05$, such that participants’ reported believing that sex was more special after completing the program ($M = 2.22, SD = .59$) than they did prior to beginning the program ($M = 2.47, SD = .62$). Three additional paired t-tests revealed that there were no

significant differences in the degree to which participants held either permissive or conservative attitudes about sex, birth control, or the physical nature of sex. No significant differences were found with regard to participants' expectations about sex, attitudes about oral sex, or attitudes about premarital sex.

Eleven separate paired t-tests were conducted to assess any pre-post program changes in participants' knowledge of and beliefs about condoms and STDs. Participants were less likely to believe the statement "Unless I had a lot of sexual partners, I would not need to use condoms" after they completed the program ($M = 4.67$, $SD = .57$) than they did prior to the program ($M = 4.49$, $SD = .74$), $t(42) = -2.08$, $p < .05$. Participants also were less likely to believe that STDs can only be spread when symptoms are present after they completed the program ($M = 4.79$, $SD = .42$) than they were prior to the program ($M = 4.43$, $SD = .83$), $t(41) = -2.56$, $p < .05$. Additionally, participants were less likely to believe that they would know if someone they were dating had an STD after completing the program ($M = 4.24$, $SD = .76$) than they were prior to completing the program ($M = 3.79$, $SD = 1.12$), $t(41) = -3.11$, $p < .01$.

With regard to sexual self-efficacy, there was a low number of participants who were sexually active in this group ($n = 16$), and the paired t-test revealed no significant differences in participants' reported sexual self-efficacy before and after completion of the program. Item-level analyses were conducted to further investigate any pre-post program changes. Only one item that assessed the participants' ability to stop sexual activity if they did not want to have sexual intercourse was significant, $t(15) = 2.18$, $p < .05$. Interestingly, participants reported feeling less confident that they could stop sexual activity after

completing the program ($M = 3.81$, $SD = 1.28$) than they did prior to the program ($M = 4.38$, $SD = .96$).

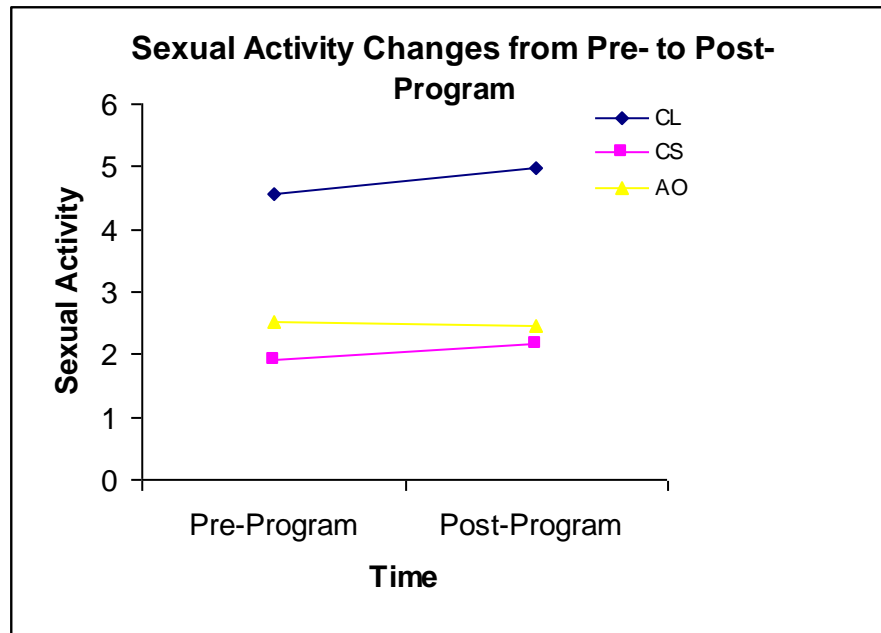
Aim 2: Between Groups Analyses

Sexual activity.

Sexual activity scale. It was hypothesized that the age of sexual debut would be older among participants from abstinence-only programs than participants from comprehensive programs. Unfortunately, given the low number of participants who were sexually active ($n = 27$) and the disproportionate distribution of these participants among the groups, this hypothesis could not be adequately assessed. Given the low number of participants who reported having engaged in sexual intercourse, the broader spectrum of sexual activity was explored. A summative sexual activity variable was created that included behaviors ranging from hand holding to sexual intercourse. It is important to note that there were significant group differences on this sexual activity scale prior to the program, $F(2, 118) = 24.45$, $p < .001$, with participants from the comprehensive-long program reporting having engaged in more sexual activity ($M = 4.61$, $SD = 2.33$) than their peers from either the comprehensive-short ($M = 1.90$, $SD = 1.56$) or abstinence-only ($M = 2.53$, $SD = 2.18$) programs. Post-program, a one-way ANOVA revealed that there continued to be significant differences among the participants from the three programs on this sexual activity, $F(2, 124) = 20.00$, $p < .001$. A Bonferroni post-hoc analysis demonstrated that the participants from the comprehensive-long program ($M = 4.83$, $SD = 2.40$) had engaged in significantly more sexual activity than participants either from comprehensive-short ($M = 2.26$, $SD = 1.79$) or abstinence-only-short programs ($M = 2.68$, $SD = 2.36$). To further investigate rates of sexual activity, a repeated measures ANOVA was conducted with program type as the independent

variable, and sexual activity at both Time 1 and Time 2 were the dependent variables. There were main effects for time, $F(1, 117) = 5.10, p < .05$, which indicates that sexual activity increased over time. There also were significant program differences with regard to sexual activity, $F(2, 117) = 25.06, p < .001$, which have been described above. However, there were not interaction effects for program type and time.

Figure 1



Specific sexual behaviors. Group differences also were assessed for each specific sexual behavior. Given that the groups differed in their rates of overall sexual activity even before beginning their respective program, the subsequent analyses only include those participants who reported that they had not engaged in the sexual behavior of interest pre-program. Chi-square analyses were conducted to determine whether the proportion of participants who remained abstinent versus those who engaged in the sexual behavior post-program differed from what would be statistically expected. Seven separate chi-squares were conducted for each sexual behavior (See Table 7 for frequency data). The chi-square was

significant for group differences with regard to kissing, $\chi^2(2, n = 38) = 6.44, p < .05$. More people from the comprehensive-long program ($n = 2$) reported kissing another person post-program than was expected by chance ($n = 0.5$). However, this difference, while statistically significant, does not appear to have much practical applicability. Another chi-square was significant for group differences in having received oral sex post-program, $\chi^2(2, n = 98) = 7.79, p < .05$, with participants from the comprehensive-long program reporting having received oral sex with greater frequency ($n = 5$) than was expected by chance ($n = 1.8$). Finally, there were significant group differences in having engaged in sexual intercourse, $\chi^2(2, n = 102) = 8.83, p < .05$. Again, participants from the comprehensive-long program reported having engaged in sexual intercourse with greater frequency ($n = 5$) than was expected by chance ($n = 1.8$).

Table 7

Observed and Expected Data for Types of Sexual Activity Across All Three Programs After Completing Program

Behavior Observed (Expected)	Comprehensive- Long		Comprehensive- Short		Abstinence-Only Short	
	<u>No</u>	<u>Yes</u>	<u>No</u>	<u>Yes</u>	<u>No</u>	<u>Yes</u>
Hand Holding	0	0	9 (9.6)	3 (2.4)	3 (2.4)	0 (0.6)
Kissing*	4 (5.5)	2 (.5)	25 (23.9)	1 (2.1)	6 (5.5)	0 (.5)
Touching Under Clothes	10 (10.5)	2 (1.5)	44 (43.8)	6 (6.2)	10 (9.6)	1 (1.4)
Touching Genitals	15 (15.2)	2 (1.8)	48 (48.2)	6 (5.8)	12 (11.6)	1 (1.4)
Receiving Oral Sex*	18 (21.1)	5 (1.9)	57 (55.1)	3 (4.9)	15 (13.8)	0 (1.2)
Giving Oral Sex	18 (19.7)	3 (1.3)	57 (55.2)	2 (3.8)	13 (13.1)	1 (.9)
Sexual Intercourse*	21 (24.2)	5 (1.8)	60 (56.8)	1 (4.2)	14 (14)	1 (1)

* $p < .05$

Feelings after sex and contraceptive use. It was hypothesized that among participants who had engaged in sexual intercourse, participants from comprehensive programs would report more positive feelings after their first intercourse experience and would reported greater contraceptive use than would their peers from abstinence-only programs. Given the low number of sexually active participants ($n = 27$), group comparisons could not be made. Since the majority of the sexually active participants were from the comprehensive long programs ($n = 21$), within-group analyses were conducted and presented with the Aim 1 findings.

Virginity.

Attitudes. Among virgins, it was hypothesized that participants from abstinence-only programs would have more negative expectations about sex than would their peers from comprehensive programs. However, a one-way ANOVA was non-significant for group differences with regard to expectations about sex. It also was hypothesized that participants from abstinence-only programs would report an older anticipated age of sexual debut, but a one-way ANOVA was non-significant for group differences on this factor.

Reasons for abstinence. Individual item-level analyses were conducted to determine whether there were group differences in the specific types of reasons that participants gave for remaining abstinent (See Table 8 for group means and standard deviations for each item). A one-way ANOVA was significant for group differences to the response, “I don’t feel I’m emotionally ready,” $F(2, 94) = 3.99, p < .05$. A Bonferroni post-hoc analysis revealed that participants from the comprehensive-short program were significantly more likely to indicate that not feeling emotionally ready was a reason for their abstinence than were their peers from the comprehensive-long program.

Table 8

Descriptive Data for Reasons for Abstinence Across All Three Programs

Reasons	Comprehensive-Long			Comprehensive-Short			Abstinence-Only Short		
	n	M	SD	n	M	SD	n	M	SD
Not emotionally ready	21	3.05 ^a	1.43	61	3.92 ^a	1.24	15	3.33	1.35
Abstinence promise/pledge	21	2.14 ^b	1.46	61	3.18 ^b	1.64	15	3.87 ^b	1.41
Loss of self respect	21	2.24 ^b	1.37	61	3.59 ^b	1.49	15	3.60 ^b	1.55
Loss of partner's respect	21	1.76 ^b	1.14	60	2.93 ^b	1.42	15	3.67 ^b	1.59
Loss of the church's respect	21	1.95 ^c	1.36	61	3.15 ^c	1.59	14	4.57 ^c	.85
Loss of friends' respect	21	1.62 ^d	1.02	61	2.87 ^d	1.51	15	3.73 ^d	1.39
Abstaining until marriage	21	2.86 ^e	1.65	61	3.61	1.62	15	4.4 ^e	1.18
Violates relationship with God	20	2.90 ^d	1.62	61	3.57 ^d	1.62	15	4.73 ^d	.59
Violates religious values	20	3.25 ^d	1.62	61	3.64 ^d	1.60	14	4.86 ^d	.53
Not old enough	20	2.70 ^d	1.63	61	4.08 ^d	1.28	15	4.2 ^d	1.21

^a Significant difference between the comprehensive long and comprehensive short programs

^b Significant difference between the comprehensive long and the other two programs

^c Significant differences between all three groups

^d Significant difference between the abstinence-only group and the other two groups

^e Significant difference between the abstinence-only and comprehensive-long group

A one-way ANOVA was significant for group differences to the response, “I promised/pledged not to,” $F(2, 94) = 5.75, p < .01$. A Bonferroni post-hoc analysis revealed that participants from the comprehensive-long program were significantly less likely than their peers from either the comprehensive-short or the abstinence-only programs to indicate that having made a virginity promise pledge was a reason for their abstinence.

A one-way ANOVA was significant for group differences to the response, “I would lose self-respect,” $F(2, 94) = 6.95, p < .01$. A Bonferroni post-hoc analysis revealed that participants from the comprehensive-long program were significantly less likely than their peers from either the comprehensive-short or the abstinence-only programs to indicate that anticipating a loss of self-respect was a reason for their abstinence.

A one-way ANOVA was significant for group differences to the response, “I would lose the respect of my partner,” $F(2, 93) = 8.99, p < .001$. A Bonferroni post-hoc analysis revealed that participants from the comprehensive-long program were significantly less likely than their peers from either the comprehensive-short or the abstinence-only programs to indicate that anticipating a loss of their partner’s respect was a reason for their abstinence.

A one-way ANOVA was significant for group differences to the response, “My church leaders or church community would lose respect for me,” $F(2, 93) = 13.64, p < .001$. A Bonferroni post-hoc analysis revealed that participants from the abstinence-only programs were significantly more likely to report that anticipating a loss of respect from their church community was a reason for their abstinence than were either participants from the comprehensive-short or comprehensive-long programs. Additionally, participants from the comprehensive-short program were more likely to indicate this as a reason for abstinence than were their peers from the comprehensive-long programs.

A one-way ANOVA was significant for group differences to the response, “My friends wouldn’t respect me,” $F(2, 94) = 10.73, p < .001$. A Bonferroni post-hoc analysis revealed that participants from the comprehensive-long programs were significantly less likely to indicate that an anticipated loss of respect of friends was a reason for their abstinence than were their peers from either the comprehensive-short or the abstinence-only programs.

A one-way ANOVA was significant for group differences to the response, “I am waiting until marriage,” $F(2, 94) = 4.30, p < .05$. A Bonferroni post-hoc analysis demonstrated that participants from the abstinence-only program were significantly more likely to indicate that they were waiting to have sex until marriage than were their counterparts from the comprehensive-long programs.

A one-way ANOVA was significant for group differences to the response, “It violates my relationship with God to have sex before marriage,” $F(2, 93) = 6.39, p < .01$. A Bonferroni post-hoc analysis demonstrated that participants from the abstinence-only program were significantly more likely to indicate that they believed that premarital sex violated their relationship with God than were either their counterparts from the comprehensive-long or comprehensive-short programs.

A one-way ANOVA was significant for group differences to the response, “It’s against my religious values to have sex before marriage,” $F(2, 92) = 5.07, p < .01$. A Bonferroni post-hoc analysis demonstrated that participants from the abstinence-only program were significantly more likely to indicate that they believed it was against their religious values to engage in premarital sex than were either their counterparts from the comprehensive-long or comprehensive-short programs.

A one-way ANOVA was significant for group differences to the response, “I don’t feel old enough yet to have sex,” $F(2, 93) = 8.64, p < .001$. A Bonferroni post-hoc analysis revealed that participants from the comprehensive-long programs were significantly less likely to report that their age (i.e., feeling too young) was a reason for their abstinence than were either participants from either the comprehensive-short or the abstinence-only programs.

Aim 3: Exploratory Post-Hoc Analyses

Between group analyses.

Sexual attitudes. The post-program sexual attitudes of the participants were compared. Four separate one-way ANOVAs were conducted, one for each factor of the Brief SAS instrument (i.e., Permissive, Birth Control, Communion, and Instrumentality scales). All four of these ANOVAs were non-significant for group difference, which indicates that participants from the three groups did not differ on the extent to which they held permissive sexual attitudes, viewed birth control as part of responsible sexuality, perceived sex as a special act, or perceived sex as a physical act. Additionally, three separate one-way ANOVAs were conducted on the participants’ positive expectations of sex, attitudes regarding oral sex, and attitudes regarding premarital sex. All three ANOVAs were non-significant for group differences. Attitudes regarding oral sex approached significance, $F(2, 124) = 3.02, p = .052$. A Bonferroni post-hoc analysis revealed that participants from the abstinence-only short program tended to hold less permissive attitudes about oral sex than did their peers from either the comprehensive-short or comprehensive-long programs; this difference approached statistical significance ($p = .066$ & $.074$, respectively).

Beliefs about condoms. Item-level analyses were conducted to assess for group difference in participants' attitudes and beliefs about condoms. A one-way ANOVA was significant for group differences with regard to the belief that buying condoms would be embarrassing, $F(2, 125) = 5.81, p < .01$. A Bonferroni post hoc analysis revealed that participants from the comprehensive-long program were significantly more likely to disagree that buying condoms would be embarrassing than were their peers from either the comprehensive-short or abstinence-only short programs (See Table 9 for descriptives). A one-way ANOVA was significant for group differences with regard to the belief that it would be difficult to discuss condoms with a partner, $F(2, 125) = 10.19, p < .001$. A Bonferroni post hoc analysis revealed that participants from the comprehensive-long program were significantly more likely to disagree that it would be difficult to discuss condoms with their partner than were their peers from either the comprehensive-short or abstinence-only short programs.

Table 9

Descriptive Data for Beliefs About Condoms and STDs Across All Three Programs

Reasons	Comprehensive-Long			Comprehensive-Short			Abstinence-Only Short		
	n	M	SD	n	M	SD	n	M	SD
Buying condoms is embarrassing	43	3.21 ^a	1.19	66	2.48 ^a	1.11	19	2.42 ^a	1.26
Hard to talk with partner about condoms	43	4.21 ^a	.80	66	3.45 ^a	1.04	19	3.16 ^a	1.26
STDs only spread when symptoms are present	43	4.77 ^b	.43	65	4.12 ^b	1.01	19	4.42	.69
Would know if partner had an STD	43	4.21 ^b	.77	66	3.21 ^b	1.17	19	3.74	1.10
STDs do not have serious health effects	43	4.79 ^b	.41	66	4.47 ^b	.81	19	4.79	.42

^a Significant difference between the comprehensive long and the other two programs

^b Significant difference between the comprehensive long and the comprehensive short programs

Beliefs about STDs. Item-level analyses were conducted to assess for group difference in participants' attitudes and beliefs about STDs. A one-way ANOVA was significant for group differences with regard to the belief that STDs can only be spread when symptoms are present, $F(2, 124) = 8.21, p < .001$. A Bonferroni post hoc analysis revealed that participants from the comprehensive-long program were significantly more likely to disagree that STDs can only be spread when symptoms are present than were their peers from the comprehensive-short program (See Table 9 for descriptives). A one-way ANOVA was significant for group differences with regard to the belief that one would know if one's partner had a STD, $F(2, 125) = 12.04, p < .001$. A Bonferroni post hoc analysis revealed that participants from the comprehensive-long program were significantly more likely to disagree

that they would know if their partner had an STD than were their peers from the comprehensive-short program. A one-way ANOVA was significant for group differences with regard to the belief that STDs do not have serious health effects, $F(2, 125) = 3.90, p < .05$. A Bonferroni post hoc analysis revealed that participants from the comprehensive-long program were significantly more likely to disagree that STDs do not have serious health effects than were their peers the comprehensive-short program.

Effect of program attendance on outcomes.

Attitudes. It was attempted to determine whether post-program attitudes could be attributed to the type of sexual education program attended. However, given the complexity of factors that influence sexual attitudes, the goal of these analyses was to control for the effect of possible covariates while isolating the effect of the type of program attended. Four separate one-way between-groups analyses of covariance (ANCOVAs) were conducted for each scale of the Brief SAS instrument (i.e., Permissive, Birth Control, Communion, and Instrumentality scales). Program type was the independent variable (comprehensive-long, comprehensive-short, abstinence-only), and religiosity and age were entered as covariates. Religiosity and age were selected as covariates as both have demonstrated effects on adolescents' sexual attitudes. While other demographics also are likely important, the present groups did not statistically differ by race or SES. Additionally, the sample is overwhelmingly female, so gender was not addressed.

The first ANCOVA was conducted to determine whether permissive attitudes about sex differed by program type after the effects of religiosity and age were controlled. The results of this ANCOVA were non-significant (Table 10). While religiosity impacted permissive attitudes $F(1, 122) = 18.42, p < .01$, the type of sexual education program that

adolescents attended did not. Two additional ANCOVAS revealed that program type had a non-significant effect on the degree to which adolescents viewed birth control as part of responsible sexuality and perceived sex as a special act (Tables 11 and 12). Interestingly, for both of these outcomes neither covariate (i.e., age nor religiosity) was significant, which suggests that these particular attitudes may be influenced by other factors. The fourth ANCOVA also indicated that adolescents' attitudes regarding the physicality of sex did not significantly differ by program type; however, religiosity's effect on these attitudes did approach significance, $F(1, 121) = 3.50, p = .06$. Thus, these results suggest that some sexual attitudes may be impacted by religiosity; however, there do not appear to be program-specific effects.

Table 10

Test of Between-Subjects Effects on Permissive Attitudes about Sex with Age and Religiosity as Covariates

Source	Type III SS	df	MS	F	Sig	Partial Eta Squared
Corrected Model	9.57 ^a	4	2.39	5.20	.01	.15
Intercept	9.57	1	9.57	20.79	.01	.15
Religiosity	8.48	1	8.48	18.42	.01	.13
Age	.44	1	.44	.95	.33	.01
Program Type	.76	2	.38	.83	.44	.01
Error	56.17	122	.46			
Total	2357.07	127				
Corrected Total	65.73	126				

^aR squared = .15

Table 11

Test of Between-Subjects Effects on Birth Control Attitudes with Age and Religiosity as Covariates

Source	Type III SS	df	MS	F	Sig	Partial Eta Squared
Corrected Model	3.15 ^a	4	.79	.70	.59	.02
Intercept	9.13	1	9.13	8.09	.01	.06
Religiosity	.53	1	.53	.47	.50	.01
Age	2.37	1	2.37	2.10	.15	.02
Program Type	.75	2	.37	.33	.72	.01
Error	137.72	122	1.13			
Total	759.67	127				
Corrected Total	140.87	126				

^aR squared = .02

Table 12

Test of Between-Subjects Effects on Attitudes Regarding the Specialness of Sex with Age and Religiosity as Covariates

Source	Type III SS	df	MS	F	Sig	Partial Eta Squared
Corrected Model	1.45 ^a	4	.36	.75	.56	.02
Intercept	5.34	1	5.34	11.07	.01	.08
Religiosity	.08	1	.08	.16	.69	.01
Age	.41	1	.41	.85	.36	.01
Program Type	.74	2	.37	.77	.47	.01
Error	58.87	122	.48			
Total	672.14	127				
Corrected Total	30.32	126				

^aR squared = .02

Table 13

Test of Between-Subjects Effects on Attitudes Regarding the Physicality of Sex with Age and Religiosity as Covariates

Source	Type III SS	df	MS	F	Sig	Partial Eta Squared
Corrected Model	2.62 ^a	4	.66	1.43	.23	.05
Intercept	5.92	1	5.92	12.90	.01	.10
Religiosity	1.60	1	1.60	3.50	.06	.03
Age	.01	1	.01	.01	.91	.01
Program Type	.48	2	.24	.52	.59	.01
Error	55.50	121	.46			
Total	1692.52	126				
Corrected Total	58.12	125				

^aR squared = .05

Three additional ANCOVAs were conducted to determine whether adolescents' positive expectations about sex, attitudes about oral sex, and attitudes about premarital sex differed by program type after the effects of religiosity and age were controlled. All three ANCOVAs revealed that these attitudes did not significantly differ by program type. With regard to positive expectations about sex, neither program type nor the covariates emerged as significant (Table 14). However, for attitudes about oral sex and attitudes about premarital sex, both age and religiosity were statistically significant (Table 15 and 16).

Table 14

Test of Between-Subjects Effects on Positive Expectations about Sex with Age and Religiosity as Covariates

Source	Type III SS	df	MS	F	Sig	Partial Eta Squared
Corrected Model	2.76 ^a	4	.69	1.21	.31	.04
Intercept	9.72	1	9.72	17.03	.01	.12
Religiosity	1.27	1	1.27	2.22	.14	.02
Age	1.37	1	1.37	2.41	.12	.02
Program Type	.69	2	.35	.60	.55	.01
Error	69.60	122	.57			
Total	1234.94	127				
Corrected Total	72.35	126				

^aR squared = .04

Table 15

Test of Between-Subjects Effects on Attitudes about Oral Sex with Age and Religiosity as Covariates

Source	Type III SS	df	MS	F	Sig	Partial Eta Squared
Corrected Model	12.49 ^a	4	3.12	4.69	.01	.13
Intercept	13.52	1	13.52	20.31	.01	.14
Religiosity	7.19	1	7.19	10.81	.01	.08
Age	2.54	1	2.54	3.82	.05	.03
Program Type	3.09	2	1.55	2.32	.10	.04
Error	80.53	121	.67			
Total	1750.56	126				
Corrected Total	93.02	125				

^aR squared = .13

Table 16

Test of Between-Subjects Effects on Attitudes about Premarital Sex with Age and Religiosity as Covariates

Source	Type III SS	df	MS	F	Sig	Partial Eta Squared
Corrected Model	24.88 ^a	4	6.22	5.58	.01	.16
Intercept	.15	1	.15	.14	.71	.01
Religiosity	20.32	1	20.32	18.23	.01	.13
Age	4.87	1	4.87	4.37	.04	.04
Program Type	5.10	2	2.55	2.29	.11	.04
Error	134.89	121	1.12			
Total	722.03	126				
Corrected Total	159.77	125				

^aR squared = .16

Sexual activity. Finally, an ANCOVA was used to determine whether the amount of sexual behavior in which adolescents had engaged differed depending upon the sexual education program that they attended after the effects of religiosity and age were controlled. The ANCOVA revealed that program type was not statistically significant (Table 17). However, age was significant and religiosity approached statistical significance.

Table 17

Test of Between-Subjects Effects on Sexual Behavior with Age and Religiosity as Covariates

Source	Type III SS	df	MS	F	Sig	Partial Eta Squared
Corrected Model	267.71 ^a	4	66.93	17.93	.01	.37
Intercept	39.08	1	39.08	10.47	.01	.08
Religiosity	12.54	1	12.54	3.36	.07	.03
Age	87.45	1	87.45	23.42	.01	.16
Program Type	3.56	2	1.78	.48	.62	.01
Error	451.79	121	3.73			
Total	1983.00	126				
Corrected Total	719.50	125				

^a R squared = .37

Discussion

Review of Findings

Aim 1. The first aim of this study was to determine the impact of each program by comparing participants' pre- and post-program attitudes and behaviors (Please see Table 18 for a summary of Aim 1 findings). It was hypothesized that participants from all of the programs would have comparably low levels of sexual activity before and after program completion (Hypotheses 1 & 5). Participants from abstinence-only programs did not show any pre-post program changes in reported sexual activity. This finding is consistent with other research that has demonstrated that highly religious teens tend to delay intercourse (Hardy & Raffaelli, 2003). Interestingly, participants from both comprehensive short and long programs reported an increase of sexual activity from pre- to post-program completion. However, this finding must be interpreted with caution, as the changes in sexual activity are slight increases and the participants from the comprehensive long and short programs were surveyed over a longer period of time than were participants from the abstinence-only short programs. Furthermore, prior research has demonstrated that comprehensive sexual education programs do not hasten the onset of sexual activity, increase its frequency, or increase the number of sexual partners (Kirby, 2001). As such, the increase in sexual activity for both the comprehensive-long and short programs may be an artifact of time rather than a result of program attendance. Additionally, the abstinence-only group was significantly more religious than the other groups, which also may help to explain why sexual activity remained stable for this group and not the others.

Table 18

Summary of Aim One Findings Across All Three Groups

Outcomes	Comprehensive-Long	Comprehensive-Short	Abstinence-Only
Sexual Activity	↑	↑	
Touching Genitals		↑	
Intercourse	↑		
Attitudes			
Sex is special	↑	↑	↑
Sex is physical		↓	
Sex w/o a condom is worthwhile		↓	
Do not need to use condoms unless one has many partners	↓		
STDs only spread when symptoms are present	↓		
Would know if partner had a STD	↓		
STDs have serious health consequences		↑	

Changes in participants’ attitudes also were assessed. It was hypothesized that participants from abstinence-only programs would have less permissive attitudes about sex, more negative expectations about sex, and more negative beliefs about condoms after completing the sexual education program (Hypotheses 2-4). These hypotheses were based on prior literature documenting a positive association between religiosity and conservative sexual attitudes (Wilcox et al., 2001). Of note, none of these hypothesized changes occurred. This is likely due to the fact that participants from the abstinence-only programs tended to hold rather conservative views about casual sex from the outset; thus, it is not particularly surprising that these views remained stable after completing a short abstinence-only

education program. With regard to attitudinal change, what was observed was an increase in the degree to which participants reported believing that sex is special after having completed the abstinence-only program. Interestingly, participants from both the comprehensive-short and long programs also reported an increase in the degree to which they believed that sex is special after completion of their respective programs. Additionally, participants from the comprehensive-short program also had a pre-post program decrease in the degree to which they believed that sex is a largely physical act. Thus, it would seem that one of the unique strengths of faith-based sexual education programs is its ability to communicate a message regarding the sanctity of sex, which is consistent with the often-cited Christian view of sex as a gift from God and sex as both a spiritual and physical act (Macknee, 2002). Finally, it was hypothesized that participants from comprehensive programs would have more positive beliefs about condoms and greater sexual self-efficacy after program completion (Hypotheses 6-7). Participants from both comprehensive-short and long programs showed a positive pre-post program change with regard to their beliefs and knowledge about condoms and STDs. This finding is consistent with expectations, as prior research has demonstrated that faith-based programs can increase health-related knowledge (DeHaven, Hunter, Wilder, Walton, & Berry, 2004). Unfortunately, self-efficacy could only be assessed within the comprehensive-long group due to the low numbers of sexual active participants, and there were no significant pre-post program changes.

Aim 2. The second aim of this study was to compare the effects of the abstinence-only and comprehensive programs. The first set of hypotheses (Hypotheses 8-10) were compared the age at sexual debut, emotions following first sexual intercourse, and contraceptive use of sexually active participants from the abstinence-only and comprehensive

programs. Due to the low number of sexually active participants, these comparisons could not be made. Rather, descriptive analyses were conducted for sexually active participants from the comprehensive-long program and are presented with the Aim 1 results.

The programs were compared using a summative sexual activity scale. Participants from the comprehensive-long program engaged in significantly more sexual activity than did their peers from either the comprehensive-short or abstinence-only short programs. This is an interesting finding when coupled with the fact that participants from both the comprehensive-short and long programs reported an increase in sexual activity from pre-program completion to post-program completion. Thus, it appears that while participants from the comprehensive-short program reported more sexual activity after they completed their program, this level of sexual activity was not significantly different than the participants from the abstinence-only program. The difference between the participants from the comprehensive-long programs and their peers likely is best explained by developmental differences. The participants from the comprehensive-long programs are significantly older ($M = 17.05$, $SD = 1.00$) than their peers from the comprehensive-short ($M = 14.52$, $SD = .93$) or abstinence-only short ($M = 15.58$, $SD = 1.43$) programs. Thus, the rates of sexual activity reported by the participants from the comprehensive-long program (40% sexually active at T1 and 50% at T2) appear developmentally appropriate and are consistent with national averages (CDC, 2008).

Additionally among virgins, it was hypothesized that participants from abstinence only programs would have more negative expectations about sex (Hypothesis 11), would report an older age at which they anticipate becoming sexually active (Hypothesis 12), and would endorse more rule-bound, external reasons for avoiding sexual activity (Hypothesis

13) than virgins from the comprehensive program. There were no significant program differences with regard to expectations about sex, which is in contrast to prior literature that has documented that religious teens held more negative expectations about sex than their less religious peers (Bearman & Brückner, 2001, 2005). However, if the prior finding that each program in the present study increased the degree to which sex was perceived as special is born in mind, then the present finding may reflect the programs' portrayal of sex in a positive light. It is possible that when sex is discussed in a positive way, then adolescents' expectations about sex also are more positive, even if sex is an activity that they intend to delay. Additionally, contrary to what was hypothesized, there were no program differences in the anticipated age of sexual debut ($M = 15.22$, $SD = 9.64$). Yet the standard deviation demonstrates that there was a wide variety of variability in participants' estimations of when they may become sexually active, which is understandable given that sexual debut is influenced by a variety of individual-level and environment-level factors (Buhi & Goodson, 2007; Rostosky et al., 2003). Therefore, program attendance may not have been influential enough to override within group variability and produce distinguishable group differences. Additionally, another compounding factor is that religiously conservative individuals are more likely to marry at a younger age than are their less conservative peers (Eucker & Stokes, 2008). Thus, from health promotion and risk-reduction perspectives, it becomes necessary to know not only age of sexual debut but also age of marriage, so that appropriate assessments of risk can be made.

Significant differences did emerge with regard to reasons for remaining abstinent. Consistent with expectations, participants from abstinence-only short programs were more likely to endorse the following reasons for abstinence than were their peers: anticipating a

loss of respect from church leaders and friends, waiting until marriage, believing that premarital sex violates one's relationship with God, believing that premarital sex is against one's religious values, and feeling too young. Interestingly, there is little research regarding adolescents' reasons for abstinence and virtually no research investigating religious teens' reasons for abstinence. When reasons have been explored, fear of negative consequences and belief that it is normative to delay are cited by adolescents as reasons why they have chosen to abstain from sex (Loewenson, Ireland, & Resnick, 2004). With regard to highly religious teens, particularly those from conservative religious traditions such as those who attended the abstinence-only programs in this study, it is likely that delaying sexual activity until marriage is a clearly articulated value within their religious and/or spiritual community. As such, it follows that teens from a religiously conservative background would cite reasons that are consistent with these religious norms and values to a greater degree than would teens from religious traditions that may hold a more liberal perspective on sexuality.

Aim 3 – exploratory post hoc analyses. While there were within-group pre-post program attitudinal changes, further analyses were conducted to determine whether there were any between-group differences in post-program attitudes. The results revealed that the three groups did not differ on the extent to which they held permissive sexual attitudes, viewed birth control as part of responsible sexuality, perceived sex as a special act, or perceived sex as a physical act. This is an interesting finding given that participants from all three sexual education programs showed significant pre-post program increases in the degree to which they believed that sex is a special act. Thus, it is possible that a particular strength of faith-based programs, regardless of the particular design of the program, is an ability to place sex within a special context.

To explore this hypothesis further, analyses of covariance were conducted to determine the degree to which program type contributed to post-program attitudes and behaviors after the effects of religiosity and age were controlled. Interestingly, program type had little, if any, effect on attitudes and behaviors. Religiosity and age did appear to impact select attitudes and behaviors. Thus, it is likely that the outcomes documented in this study are due, in part, to the protective effects of religiosity in general, rather than a result of having attended a faith-based sexual education program. This very question has been addressed by recent research on virginity pledges. Prior research (e.g., Bearman & Brückner, 2001, 2005) has documented that individuals who took a virginity pledge delayed sexual debut when compared to their non-pledge taking peers. However, recent research (Rosenbaum, 2009) has suggested that this difference may have been due to preexisting group differences, such as pledgers' higher levels of religiosity, rather than due to the virginity pledge. Using carefully matched sampling methods, Rosenbaum (2009) found that the sexual behavior of virginity pledgers did not significantly differ than that of their closely matched peers. Thus, this clearly illustrates that more rigorous research designs are needed to parse the effects of religiosity from specific program effects. This will be discussed in greater depth in subsequent sections.

Are Faith-Based Sexual Education Programs Effective?

Despite the fact that religiosity has a demonstrated effect on adolescents' sexual attitudes and behaviors (Bearman & Brückner, 1999; Bearman & Brückner, 2001; Beck et al., 1991; Hardy & Raffaelli, 2003; Nonnemaker et al., 2003; Wilcox et al., 2001), there remains a paucity of research on the effectiveness of faith-based sexual education programs. While effectiveness can be defined in different ways, an "effective" sexual education

program inherently is one whose outcomes are consistent with its previously established goals, such as promoting abstinence or increasing healthy sexual attitudes and behaviors. The results of this study appear somewhat consistent with this view. For example, participants who attended either the comprehensive-long or comprehensive-short groups showed pre-post program changes in their attitudes and beliefs about condoms and STDs, such that they began reporting more accurate knowledge regarding the health benefits of condoms and the transmission and effects of STDs. Another notable cross program effect was the pre-post program increase in the degree to which participants felt that sex is a special act. Also, participants of the comprehensive-short program reported a pre-post program decrease in the degree to which they perceived sex as a purely physical act. Given the religious framework of these sexual education programs, attitude changes such as these would likely be considered successful outcomes. Additionally, sexually inactive participants from the abstinence-only program were more likely than their comprehensive peers to cite reasons for remaining abstinent that are consistent with the tenets of an abstinence-only education program (e.g., waiting until marriage, believing that premarital sex violates one's relationship with God and/or religious values). Taken collectively, these results suggest that the programs in this study may have produced some modest effects consistent with their respective goals and religious perspectives. The results of this study appear consistent with other research such as Francis and Liverpool's (2009) recent review of four faith-based HIV prevention programs; outcomes included increased HIV testing, decreased number of sexual partners, decreased drug use, and increased knowledge about HIV.

However, when discussing the effectiveness of a program, it is also necessary to determine whether any changes can be attributed to program attendance rather than to other

factors. In an attempt to address this consideration in the present study, analyses of covariance were conducted to establish the impact of the type of program that adolescents attended on their sexual attitudes and behavior once the effects of religiosity and age were controlled. Interestingly, program type did not emerge as significant for any of the attitudes or sexual behaviors that were investigated. However, religiosity and age were significant for various attitudes and behaviors. Thus, it is possible that the pre-post program effects that were discussed above could simply be due to a combination of the effects of religiosity, demographics, and other variables rather than having attended a specific faith-based program. If this is accurate, it suggests that the programs were not particularly effective. However, another plausible explanation is that the three programs may not have differed widely enough from each other to produce program-specific effects on adolescents' attitudes and behaviors. Thus, an alternative explanation is that having attended any faith-based sexual education produced similar albeit rather modest effects. To truly determine program effectiveness, it becomes necessary to separate the effects of program attendance above and beyond religiosity.

Unfortunately, there are no studies of faith-based sexual education programs to date that are of sufficient methodological rigor that allow for the aforementioned types of analyses to be conducted. Recently, however, a randomized controlled clinical trial (Jemmott, Jemmott, & Fong, 2010) was conducted comparing the efficacy of an abstinence-only and comprehensive sexual education program over a 24-month period of time. Six hundred sixty-two (662) African American 6th and 7th grade students were randomly assigned to an abstinence-only, safe sex only, comprehensive, or health promotion (e.g., control) group. The participants' sexual activity was assessed at baseline and 3, 6, 12, 18, and 24 months

post-program. The results revealed that participants in the abstinence-only group delayed sexual intercourse relative to their other peers, and participants in the comprehensive group had fewer partners when compared to the control group. It was concluded that theoretically driven abstinence-only programs can be effective and may be one important way of addressing adolescent sexuality. While this was not a study of faith-based programs, many faith-based organizations do wish to take an abstinence-only approach. Thus, this research suggests that under certain conditions this approach can be effective in delaying sexual activity, and thus, greater attention must be paid to determining what conditions are necessary for a program to be efficacious.

Challenges Associated with Researching Faith-Based Programs

Throughout the course of this research project, several challenges arose, particularly with regard to recruiting and retaining religious organizations that were interested and willing to participate in the study. While there may have been some unique aspects of the present research that made recruitment quite effortful, prior literature suggests that conducting scientific research within religious contexts is a process that is commonly met with some degree of challenge (Chatters, Levin, & Ellison, 1998). Possible explanations for these challenges will be explored, and strategies for coping with these challenges will be offered.

Conflict between science and religion. The relationship between science and religion is one that has been historically fraught with much tension. While a complete review of the relationship between science and religion is beyond the scope of this paper, a few of the landmark disagreements will be reviewed in an attempt to highlight the adversarial relationship that science and Judeo-Christian religious traditions have had throughout much of history. Perhaps one of the most famous examples of this strained relationship is reflected

in the clash between Galileo and the Roman Catholic Church. Galileo's scientific discoveries supported the Copernican hypothesis that the sun is the center of the universe, which inherently challenged the infallibility of the Scripture that placed the earth at the center of the universe (Rudavsky, 2001). Galileo's continued support of Copernicanism and thereby continued challenge of Scriptural infallibility ultimately led to his excommunication from the Church (Rudavsky, 2001). Thus, these events illustrate a deep-seated conflict between scientific inquiry and religious authority that has existed since the Scientific Revolution.

Within the context of the history of the United States, this conflict has been exemplified in the debate between whether to teach creationism or evolution in schools. In the early 1900s, some of the textbooks that were used in public schools began to include information on evolution, and many states responded by banning the teaching of evolution (Pennock, 2002). In 1925, the famed *Scopes* trial occurred, which alleged that Scopes had violated the Butler Act in Tennessee by teaching evolution to his students (Pennock, 2002). Scopes was found guilty and antievolutionary laws were in existence until 1968, when they were overturned by the U.S. Supreme Court (Pennock, 2002). However, the debate has continued, with state laws being created in the 1970s requiring equal emphasis on Biblical explanations of creation, although these laws also were eventually overturned (Pennock, 2002). Since then, proponents of creationism have lobbied for the addition of disclaimers on textbooks regarding the theoretical nature of evolution. In fact, as recently as 2005, a lawsuit was filed against the Cobb County School District in Georgia for requiring evolutionary disclaimers in their textbooks (Matsumura & Mead, 2007). Thus, this demonstrates that

presently there continue to be difficulties merging scientific discoveries with fundamentalist interpretations of the Bible.

Within the realm of sexual health, there also exists tension between efforts to promote safe sex and religious prohibitions against contraceptives, although these prohibitions vary somewhat depending upon the specific religion in question (Schenker, 2000). Nowhere are these tensions more salient than in the efforts to slow the growing HIV/AIDS pandemic. In 2008, approximately 33.4 million people were living with HIV, and 67% of those people lived in Sub-Saharan Africa where HIV is the leading cause of death (USAID, 2009). The Catholic Church has garnered much criticism for its continued stance against using condoms, particularly given the Church's growing influence with ever increasing numbers of followers in Africa (Scalise & Bognolo, 2005). It has been suggested that this stance has led to misinformation regarding the efficacy of condoms in slowing the spread of HIV and given reluctant condom-users an excuse not to use protection, which has ultimately contributed to an increasing death toll (Arie, 2005). Yet there is some suggestions that the tide may be turning, albeit slowly. A prominent pontifical theologian has acknowledged that while sexual intercourse can lead to conception, it also is through this act that HIV could be transmitted, a disease which ultimately leads to one's death (Arie, 2005). Thus, religious leaders appear to be grappling with how best to protect the sanctity of life.

Culture of mistrust. Given the often antagonistic relationship that science and religion have had throughout history, this has led to a sense of mistrust and misunderstanding by both parties (Chatters et al., 1998). The worldviews of each have been pitted against one another and made to seem mutually exclusive. Particularly within the realm of public health, religion has often been viewed as a hurdle with which to contend, rather than an asset to

promoting health (Chatters et al., 1998). Psychology has tended to suffer from the same narrow view of religion as has the wider scientific field. The relationship that psychology has had with religion has been a unidirectional one. Religion has been approached in three different ways: as an object to be studied, as an enterprise that could benefit from being educated by psychological principles, or as a tradition needing reform (Jones, 1994). Taking any of these approaches, psychology is left unaffected by religion and in the self-awarded power position. Given these dynamics, conducting psychological research within a religious context is a rather difficult undertaking that is quite often met with religious skepticism and concern regarding the researcher's motivations (Chatters et al., 1998; Markens, Fox, Taub, & Gilbert, 2002).

Evidence from the present study. The recruitment and retention of religious organizations to participate in the present study proved to be met with substantial difficulty, which is thought to be due, at least in part, to skepticism and mistrust. This is perhaps most clearly illustrated with one religious institution who invited the researcher to attend a parental meeting to discuss the study. The parents were quite concerned about how the survey data would be used and with whom it would be shared; several parents expressed concerns with how their sexual education program would be portrayed and whether this would be shared with the media. Despite these reservations, some parents consented to allow their children to participate. However, the day prior to conducting the survey, a religious official contacted the researcher and asked her not to come based on parents' continued concern. Interestingly, the religious official noted that the organization was intrigued by the idea of surveying the youth and now had plans to conduct internal research. Thus, it appears that participating in research was perhaps less of a concern than was having that research conducted by an

external entity. This concern about outside evaluation was a theme that was echoed throughout the data collection process with a variety of organizations and ultimately limited the number of participants.

Ethical issues. Ethical issues may arise when health education efforts are conducted within a faith context (Chatters et al., 1998). Access to accurate sexual health information has been recognized as a basic human right that is fundamental to the overarching right to the best standard of health possible (Freedman, 1995). According to United Nations' guidelines, children and adolescents should have access to reproductive health services, HIV/AIDS education, and prevention methods such as condoms. Additionally, the UN states that young people should be able to access developmentally appropriate information both in and out of school, so they can approach their sexuality in a positive and responsible manner (The Office of the United Nations, 1996). While religious organizations also are invested in the health of their congregants, different values and goals may guide the inclusion or exclusion of specific sexual content. Thus, it is possible that religious organizations may not discuss sensitive issues, may focus exclusively on abstinence rather than providing comprehensive education, and may not view their youth as sexually-active or at risk of experiencing negative sexual outcomes (Francis & Liverpool, 2009). Given that health professionals' ethics and religious organizations' values may sometimes differ, it poses difficulties to negotiating successful partnerships.

Impact of ethical issues on the present study. The goal of this study was to compare comprehensive and abstinence-only faith-based sexual education programs, which inherently proved problematic. The measure that was used in this study was designed to encompass a wide spectrum of sexual attitudes and behaviors with the understanding that not all programs

would address all of this content. However, it is ideal to have all participants complete the same items so that accurate comparisons can be made. Unfortunately, the breadth and depth of the survey ultimately limited the number and types of participants who were recruited. It was exceedingly difficult to recruit participants from more religiously conservative, often fundamentalist, organizations that tended to use abstinence-only programs. Interestingly, several abstinence-only programs expressed considerable interest in participating in the project but ultimately declined after viewing the survey. Many cited concerns that the questions were beyond the maturity and experience level of their youth, would give the youth ideas or encourage them to engage in behaviors, or were simply in conflict with their values. Additionally, it was not uncommon for religious leaders to ask if the survey could be abbreviated for their youth, with more sexually detailed questions eliminated, or ask to only administer the survey to older adolescents, despite the survey's IRB approval for use with 13-18 year olds. Thus, it appears that the one-size-fits-all approach of the measure may have alienated some the religious organizations.

Implications for the Design of Increasingly Effective Sexual Education Programs

Political climate. In thinking of how to design increasingly effective sexual education programs, one must also consider the wider, current sociopolitical climate. Despite significant federal funding for abstinence-only education programs, there is growing evidence of their ineffectiveness and a growing trend toward states' rejection of these federal finances to implement abstinence-only programs (Boonstra, 2009). In the midst of this mounting evidence against and apparent growing dissatisfaction with abstinence-only regulations, Americans also have elected a new president, President Barack Obama. Advocates have been eagerly anticipating what President Obama may do with regard to

sexual education funding, and in December of 2009, President Obama signed a new teen pregnancy initiative into law that has eliminated the need to adhere to the restrictive 8-point abstinence-only definition (Boonstra, 2010). Seventy-five million dollars has been allocated to the replication of programs that have been rigorously tested and proven to decrease teen pregnancy or risk factors associated with it, and at least \$25 million (and up to \$39.5 million) has been allocated to research new promising programs (Boonstra, 2010). Interestingly, the newly signed health care law has allocated another \$75 million for “personal responsibility education,” which discusses both abstinence and contraception; an additional \$25 million has been allocated for innovative programs (Landau, 2010). Yet the health care law also renews funding for abstinence-only programs, \$50 million per year for the next 5 years (Landau, 2010). This has many advocates upset as it continues to fund programs that do not have demonstrated effectiveness and therefore seems in contrast to the desire to fund evidenced-based programs (Boonstra, 2010). Thus, it will be interesting to observe if and how the ongoing political climate and the anticipated changes to the health care law affect the funding for sexuality education. Nonetheless, there does appear to be a growing political awareness of the need for more comprehensive and innovative approaches to sexuality education, and this awareness currently is being backed by federal funding, which makes the development and implementation of new programs an increasing possibility.

Benefit of partnerships between science and religion. Despite the challenges that have been cited between the scientific and religious arenas, partnerships between health professionals and religious organizations are quite promising, given the documented positive effect that religion has on health in general (Koenig, McCullough, & Larson, 2001; Levin, 2001) and sexual activity in particular (Bearman & Brückner, 1999; Wilcox et al., 2001). In

addition to this positive association, religious organizations often play an integral role in the community and are regarded with great respect and authority. Similarly, religious leaders have great credibility with their congregants, making them ideal leaders of health programs, and health professionals possess the health knowledge and program development expertise that religious leaders often lack (Reinert, Campbell, Carver, & Range, 2003). Religious organizations also are able to reach wide segments of the population who might have difficulty accessing health promotion programs that are provided in more traditional settings, and many religious organizations already have a variety of youth programming, which could provide an ideal forum in which to reach adolescents (Reinert et al., 2003). Thus, it is clear that religious leaders and health professionals have complementary skills and assets that can form the basis of a very collaborative and fruitful partnership.

How to form fruitful partnerships. The literature suggests that the most fruitful partnerships between health professionals and religious organizations result from considerable time, effort, and investment by both parties (Campbell et al., 2007; Chatters et al., 1998; Francis & Liverpool, 2009; Reinert et al., 2003). Given the mistrust that has existed and continues to exist, significant effort must be made to foster a spirit of collaboration and a sense of working together toward a common goal, rather than imposing a goal onto the religious organization (Campbell et al., 2007). One main way to foster this spirit of collaboration is to have both health professionals and representatives of the religious community involved in every step of the process from the sexual education program design, development, implementation, and evaluation (Campbell et al., 2007; Francis & Liverpool, 2009). Additionally, it also is often quite beneficial for health professionals to become integrated and known within the religious community; this may take the form of attending

religious services, participating in community events, holding meetings to discuss the sexual education program, or being available and responsive to the needs and requests of the religious organization and community (Campbell et al., 2007). Thus, successful partnerships appear to necessitate a commitment to establishing and maintaining an active presence within a religious community and actively seeking to include the religious representation throughout all aspects of programming.

Programming considerations. It has been recommended that one way to begin fostering a collaborative spirit is to conduct a needs assessment with representatives from the religious organization with whom health professionals are partnering (Campbell et al., 2007; Chatters et al., 1998; Francis & Liverpool, 2009). This is a crucial first step, as it allows health professionals an opportunity to learn directly from religious leaders about the concerns and needs of the religious community, which will ultimately inform the goals of the sexual education program. Obviously, different religious organizations will have various levels of comfort with regard to specific sexual content (e.g., birth control, abortion, LGBT issues). Health professionals need to demonstrate a willingness to understand the perspective from which religious organizations are coming. However, it also may be incumbent upon health professionals to provide information regarding the prevalence of risk behaviors among adolescents, possible negative outcomes resulting from engaging in these risk behaviors, and the relevance to adolescents within the religious community (Schulenberg, Maggs, & Hurrelmann, 1997). It has been suggested that possible ways to address religious organizations' reluctance to discuss sensitive sexual issues is for health professionals to provide information on how religious leaders could initiate a discussion of these topics with their youth; health professionals could discuss the health components of these topics, while

religious leaders discuss the topic within a faith context; or health professionals could provide referral resources to youth who would like information on these topics, while religious leaders focus on topics that are consistent with their faith (Thomas, Quinn, Billingsley, & Caldwell, 1994). Thus, as the community's needs are being assessed and program goals are being determined, it is necessary to maintain an open and collaborative stance, as well as a willingness to compromise.

Once the community's needs and program goals have been established, consideration must be given to the design and implementation of a program. Kirby's (2001) findings regarding the commonalities among effective sexual education programs have been reviewed in a previous section of this paper and are generally thought to be applicable to faith-based programs; however, leader training and program duration are particularly relevant considerations for faith-based programs and will be highlighted.

Evidence has suggested that faith communities would prefer programs to be delivered by a member of their community (e.g., youth leader, pastor, etc.), rather than an outside health expert (Campbell et al., 2007). This is understandable given the credibility of these leaders, as well as the evidence suggesting that faith communities are likely to be more receptive to program messages that are drawn from religious tenets or scriptural passages versus those based solely on medical recommendations (Campbell et al., 2007). Thus, the role of the health professional may be to train religious leaders and even older adolescents to deliver programs to their community that incorporate both faith and health information (Campbell et al., 2007; Francis & Liverpool, 2009; Reinert et al., 2003). Interestingly, in talking with youth leaders for the present study, very few had any formal training in sexuality

or health education, which suggests the need for future partnerships between health professionals and religious leaders if increasingly effective programs are to be developed.

Additionally, prior research has suggested that sexual education programs that are shorter than fourteen hours in duration tend to be ineffective (Kirby, 2001). While some programs in the present study were quite extensive, the vast majority of the programs that were identified, regardless of whether they participated, were quite short in duration; often less than a few hours of sexuality information was provided. Certainly, one must be aware that the leaders of religious organizations have numerous commitments, and their resources could easily become overwhelmed by participating in a large-scale education program (Reinert et al., 2003). In fact, several religious leaders who were contacted for participation in this study indicated that they were having difficulty budgeting time for their sexual education program and some ultimately chose not to offer it. While time constraints are a reality in a religious organization, addressing adolescent sexuality in a cursory manner does not appear effective. Thus, health professionals may be in a position to provide information regarding the depth with which issues ideally would be addressed and to assist religious organizations in developing strategies to deliver this information in an efficient manner.

Example of a successful partnership. A recent pilot project was conducted to determine whether successful partnerships could be forged with faith-based organizations to implement an HIV-prevention program that targets African-American teens (Griffith, Campbell, Allen, Robinson, & Stewart, 2010). The overarching goal of the program, Your Blessed Health (YBH), was to foster an environment within these faith-based organizations that is open and accepting and promotes the discussion of HIV-related topics. The YBH program has resulted out of the work of the YOUR Center, which is a community

organization serving the Flint, Michigan, area since 1996. The YBH program seeks both to educate teens and to train faith leaders, in this study pastors' wives, to discuss HIV-related topics. Additionally, the YBH program is composed of a variety of different components, which allows the faith-leaders to choose those that they would like to use depending upon their particular religious beliefs or doctrine. There are five main components: (1) a ten-hour youth curriculum that addresses basic information about STDs and HIV/AIDS, sexual communication, and a personal sexual risk reduction plan; (2) a ten-hour training for adults about basic STD and HIV/AIDS information; (3) an initial sixteen-hour training and ongoing support for the faith-based leaders who will conduct the youth and adult training sessions; (4) church-wide educational activities to reduce the stigma associated with HIV/AIDS; (5) community-wide health fairs to increase HIV/AIDS awareness.

The pilot project was evaluated by asking participants drawn from 12 churches and two community settings to complete satisfaction surveys after each attended YBH event. Youth also completed pre-post program surveys regarding a variety of sexual health indices (e.g., sexual knowledge, risk behaviors, intentions to communicate with partner and practice safe sex); adults' pre-post surveys assessed sexual knowledge and attitudes. While the present research only reported process data, the results appear encouraging (Griffith et al., 2010). Over the course of the six-month pilot project, 245 teens attended the YBH program, and they were generally satisfied with the curriculum but wished that more peers had also attended. Based on qualitative feedback, they appeared to have learned more about sexual risk and the complexity of sexual relationships. It was hypothesized that more intensive training in communication and negotiation skills would be beneficial. Additionally, 151 adults attended the program and 55 faith-leaders were trained to administer the program. The

faith-leaders reported that they felt as if the training increased their sexual knowledge, facilitation skills, and comfort with sexual health topics. While faith-leaders typically felt quite comfortable providing basic information about HIV/AIDS, some were less comfortable with more taboo topics such as condom use and communication about sex. Several churches opted not to discuss condoms with their youth. Nonetheless, pastors' responses to the YBH program were favorable and many believed that the program had a positive impact on their congregation and increased their own comfort discussing HIV/AIDS in church. Finally, the church- and community-wide educational events reached an additional 662 and 720 people, respectively. Thus, in six months this program directly reached 1,833 individuals and was met with a largely positive response. This pilot study is quite encouraging, as it suggests that true partnerships can be formed, and these partnerships have the possibility of positively impacting a much wider segment of the population than would be possible in a singular endeavor.

Research considerations. Not only must more effective programs be developed, but these programs must be evaluated in a more thorough manner. It is promising to see that in Griffith and colleagues' (2010) pilot study, careful attention was given to the collection of outcome data, even though it is not yet available. However, in the most recent review of faith-based HIV prevention programs available (Francis & Liverpool, 2009), only four peer-reviewed articles were identified, two of which targeted adolescents. One of these articles did not provide clearly defined outcome measures, while the other did assess changes in behavior and knowledge but was based on a small sample ($N = 34$; Francis & Liverpool, 2009). Given that there is a paucity of outcome studies on faith-based sexual education programs, the majority of research recommendations come from outcome studies of general

health programs provided by faith-based organizations. These have called for more rigorous methodological designs, the assessment of practical, real world outcomes, and the assessment of long-term program effects (Campbell et al., 2007; DeHaven et al., 2004; Ferguson, Wu, Spruijt-Metz, & Dyrness, 2007). Additionally, it has been established that faith has positive effects on health (Koenig et al., 2001; Levin, 2001). Thus, it is necessary to determine whether program effects are due to the program or to the overarching effect of religiosity. Unfortunately, many studies have not assessed this difference and instead have treated faith as a contextual factor of the program rather than predictive of outcome (Ferguson et al., 2007). Thus, future studies would benefit from using methodological designs that either control for religiosity or use it as a predictor of outcomes. It is likely that religiosity may mediate or moderate program effects. As such, to the extent possible, larger samples should be recruited so that these possibilities can be appropriately assessed. Finally, research on sexuality is inherently sensitive and attempts should be made to maximize participants' privacy and comfort. This is particularly important for faith-based research, given that participants are being asked about their sexuality in the context of their faith and often while they are in their religious organization. Therefore, future studies may benefit from using computer-based surveys, as they have been shown to increase adolescents' reports of their sexual experiences (Millstein & Irwin, 1983).

Limitations of the Present Study

There are several limitations of the present study that must be addressed. First, this study is composed of a relatively small sample size, which poses several issues for consideration. Due to the small sample, programs of similar content and with similar goals were combined into the groupings of comprehensive-long, comprehensive-short, and

abstinence-only programs, which increases within-group variability. Ideally, individual programs would be compared, rather than aggregating similar programs together. While this was unavoidable, due to the lack of availability of large faith-based sexual education programs, it likely causes the unique program variability to be obscured. Similarly, there is no abstinence-only long program due to the lack of the availability of these programs and the difficulty associated with recruiting more conservative faith-based organizations that tend to utilize abstinence-only programs. As such, the impact of both program content and duration cannot be fully assessed or compared, because of the lack of this fourth grouping.

The use of a convenience sample also has contributed to considerable between-group variability. This research was highly dependent on the types of programs that were offered by local religious organizations and their willingness to participate in this study. As a result, there are considerable demographic differences among the groups. The sample is overwhelming female. As such, the findings of the present study may not be applicable to adolescent males and should be interpreted very cautiously. Furthermore, the results of this study may be more appropriately used to inform the development of sexual education efforts that target adolescent females rather than those designed for males or as co-educational programs. Additionally, the groups also vary with regard to age, sexual activity, and religiosity. The comprehensive-long program is significantly older, significantly more sexually active, and significantly less religious than the other groups. Thus, it is difficult to make accurate between-groups comparisons, as there are many potential sources of variability beyond the effects of the program. Additionally, since the sample is quite small, there would not be sufficient power to statistically control for these differences. Furthermore, it must be noted that many statistical analyses were conducted on a relatively

small sample. It is possible that this caused alpha inflation, thereby increasing the apparent significance of some of the findings. Given this and the aforementioned considerations, caution must be exerted when interpreting and applying the findings.

A significant proportion of the hypotheses in the present study were predicated on the assumption that it would be possible to recruit both abstinence-only programs and comprehensive programs in approximately equal proportions. Unfortunately, there was considerable difficulty in securing abstinence-only programs to participate in the present study. As such, the groups were very disproportional with regard to program type, and this necessitated a retooling of some of the hypotheses. It simply was not possible to conduct some of the comparisons between the two programs as was hoped. This was particularly true with regard to hypotheses regarding sexually active adolescents, as the overall number of sexually active participants was low, and these participants tended to be congregated in the comprehensive-long program. Given these difficulties, the richness of the results was somewhat less than was initially desired. Additionally, it must be considered that the programs that participated in this study may be different in some way than those that declined participation. A plausible assumption is that the programs that participated may be on the more liberal end of their particular religious denomination or faith continuum. Thus, this could account for some of the lack of differences in program outcomes, as the programs may not adequately represent the spectrum of existing faith-based sexual education programs.

Finally, the present study is based on self-report data that were gathered in the participants' church, synagogue, or religious institution. As with any self-report data, there are several sources of possible methodological error. Perhaps the most salient type of error

for the present study would be due to the effects of the social desirability bias. The participants in this study can be assumed to be relatively religious adolescents simply by virtue of the fact that they are attending a faith-based sexual education program provided by their religious institution. It certainly is possible that physically completing the survey in their church, synagogue, or religious institution could cause the participants to censor their reported attitudes and behaviors, particularly in response to questions regarding sexual attitudes and behavior. This possibility was anticipated and several measures were taken to minimize the effect of the setting on the participants' responses. The youth leader was not present in the room in which they were completing the survey. The assent form ensured the participants that their responses would not be shared with anyone, including the youth minister, parents, or friends, and the participants also were reminded of this verbally when completing the assent form. However, it is still possible that some of the participants may have had concerns about the privacy of their answers, which may have caused them to be less forthcoming in their responses. Interestingly, participants from the abstinence-only programs reported slightly less lifetime sexual activity after completing their program than they did prior to program completion, although this difference did not reach statistical significance. Thus, one possible explanation for this unusual discrepancy is that after attending the program, the participants may have felt that it was less socially acceptable to have engaged in certain behaviors and may have censored some of their responses. Given this possibility, in future studies it will be very important to make every effort to reduce the effects of the social desirability bias.

Directions for Future Research

Faith-based sexual education programs are a promising way to reach a wide segment of youth within a meaningful context. While faith-based programs are not a replacement for other types of education efforts, they do have unique strengths that complement a holistic approach to sexuality and wellness. To date, there unfortunately has been little systematic or rigorous research of existing faith-based programs, and the present study was conducted in an effort to move this research agenda forward. Future research endeavors would benefit from a more systematic approach to identifying and evaluating the internally developed faith-based programs of religious organizations that exist currently. Yet, arguably, some of the most promising sexual education programs are likely to result from partnerships between health professionals and religious organizations, as each party has distinctive but complementary skills and areas of expertise. These partnerships must be predicated on a spirit of collaboration and mutual respect, which ultimately may lead to the development of increasingly effective programs. Future research should seek to employ more rigorous methodological designs so that the real-world effectiveness, long-term sustainability, and effects of programmatic components including religiosity can be appropriately assessed. Furthermore, continued attention must be paid to diversity of adolescents' needs so that future sexual education programs can be tailored properly to the community they are serving.

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APPENDICES

Appendix A: Telephone Interview from Initial Qualitative Study

Hi, my name is _____. I'm a psychology graduate student at EMU and we are beginning a project looking at different programs addressing teenage sexuality and relationship issues in the church. Can I ask you some questions? *If no...* When would be a better time / Can you direct me to someone who could best answer my questions?

If yes: I would like to ask you some brief questions about the program you have in your church on teen sexuality and relationships. We know quite a bit about public school sex education programs and their effectiveness, but we know much less about these programs within religious institutions. We are calling various churches in the area of many denominations to find out what kinds of programs there might be in the various churches. The interview should only take about 10-15 minutes. We will compile our information for research purposes now and in the future. No person's or churches name would ever be used in the dissemination of our findings; we might report denomination (e.g., Lutheran) and size/composition of the congregation, but we would disguise location. Your participation is strictly voluntary and you can refuse to answer any questions. There are no risks or benefits to you for participating in this study. Your verbal consent to proceed serves as a waiver of signed informed consent.

Does the church use a particular program to address teenage sexuality and relationships?

Tell me about the program you use. What are the goals of the program?

Does the program have a name and is it available for purchase so we can get more information about it?

How old are the kids in the program?

Who administers the program? For example, Sunday school director, youth pastor, etc.

How long is the program?

Is attendance required for confirmation/first communion/church membership?

Are parents involved? To what degree?

Do you know of any other denominations that use this program?

How many years have you been doing this program?

What has been your experience with the program?

How many youth are typically in attendance?

What do you feel has been the youth response?

How concerned are you about the sexual behaviors of the youth in your church? What specific behaviors are you concerned about?

Should the church be the place where adolescents learn information about sexual behavior?

Why or why not?

If not the church, where should they get this information?

If in the church, what information should they get?

(If not mentioned, find out if birth control information should/should not be given in the church)

This next question might be a bit difficult to answer, but we're testing out how well the item works. On a scale of 1 to 10, with 1 being most liberal and open to interpretation and 10 being most conservative (a literal interpretation), where would you place your congregation in terms of its interpretation of scripture/religious doctrine?

1	2	3	4	5	6	7	8	9	10
Most								Most	
Liberal/open to interpretation								conservative/literal interp	

I have just a couple questions about the size and composition of your church:

What is the average size of your Sunday worship attendance?

How many members do you have? Who does this include? How do you define membership?

How many family units?

What is the approximate racial composition of your church?

Do you have any idea about the SES of your congregation?

Appendix B: Youth Minister Survey

We would like to gather some additional information regarding the sexual education program at your church.

Using the following scale, please circle the number that correctly describes the extent to which the following statements reflect the goals of your sexual education program

1 2 3 4 5
 Not at all a goal Somewhat a goal One of the most important goals

The goal of the sexual education program at my church is to:

		Not at all a goal		Somewhat		One of the most important
1) Enhance the moral and spiritual decision-making of the youth. (e.g., religious values guide life decisions, use religion as a basis for how to act)	1	2	3	4	5	
2) Enhance the health-focused or practical decision-making of the youth. (e.g., providing factual information about birth control, STDs, and/or pregnancy so that youth can make informed decisions)	1	2	3	4	5	
3) Increase the youths' comfort discussing sex with adults.	1	2	3	4	5	
4) Increase the youths' comfort discussing sex with their partner.	1	2	3	4	5	
5) Teach youth about healthy relationships and the role of sex in them. (e.g., respecting one's partner and his/her boundaries, communication)	1	2	3	4	5	
6) Encourage youth to remain pure and abstinent in regard to sexual issues.	1	2	3	4	5	
7) Promote sexuality as a positive gift from God.	1	2	3	4	5	
8) Teach youth to think about sex within the context of spirituality. (e.g., using religion/spirituality to guide sexual decision-making)	1	2	3	4	5	
9) Other (please describe)	1	2	3	4	5	

10) Please rank the **top 3 goals** of the program, with 1 indicating the most important goal and 3 indicating the third most important goal.

- _____ Enhance the moral and spiritual decision-making of the youth.
- _____ Enhance the health-focused or practical decision-making of the youth.
- _____ Increase the youths' comfort discussing sex with adults
- _____ Increase the youths' comfort discussing sex with their partner.
- _____ Teach youth about healthy relationships and the role of sex in them.
- _____ Encourage youth to remain pure and abstinent in regard to sexual issues.
- _____ Promote sexuality as a positive gift from God.
- _____ Teach youth to think about sex within the context of spirituality.
- _____ Other (i.e., the other goal that you have indicated)

11) Please indicate the topics that are covered or the types of information that are provided in your sexual education program. (Check all that apply)

- _____ Physical changes (such as puberty)
- _____ Dating and/or romantic relationships
- _____ Social or peer pressure to have sex
- _____ Facts about how many youth actually have sex, whether they use contraceptives, etc.
- _____ Sexually transmitted diseases (STDs)
- _____ Pregnancy
- _____ Contraceptives (i.e., where to get, how to use)
- _____ Contraceptives (i.e., failure rates)
- _____ How to communicate with a partner about sex
- _____ Use of role-plays or activities to help youth practice their communication, negotiation, or refusal skills regarding sex
- _____ Moral or spiritual values about sex

12) Does your program provide information that is relevant to both sexually active and non-sexually active youth?

- _____ Yes (please explain)
- _____ No

13) How long is your program? (Please indicate number of days and hours – e.g., 6 meetings, 1.5 hrs each)

_____ meeting(s) _____ hour(s) each time

14) What prompted you to develop/adopt the program? (check all that apply)

- Some youth were not considering the spiritual aspects of sex
- Youths' widespread involvement in oral sex or youth did not seem to consider oral sex to be "sex"
- Promiscuity
- Youth appeared not to be aware of the consequences of sex
- Youth appeared to be emotionally unprepared for sex
- Youth appeared to be pressured by friends/media/partners to be sexually active
- Other (please explain)

15) Do you or the other program leaders receive any formal training about youth sexuality and/or sexual education?

Yes (please explain)

No

16) Please think back to the goals of the program that you previously listed. To what extent do you personally believe in the messages/goals that the program is conveying?

- Completely believe in the messages
- Mostly believe in the messages
- Somewhat believe in the messages
- Slightly believe in the messages
- Do not believe in the messages at all

Appendix C: Scales with Individual Items

Religiosity (standard questions)

1. In the past 12 months, how often did you attend religious services? (1) once a week, (2) once a month or more, but less than once a week, (3) less than once a month, (4) never
2. How important is religion to you? (1) very important: (4) not important at all
3. How often do you pray? (1) at least once a day, (2) at least once a week, (3) at least once a month, (4) less than once a month, (5) never

Religiosity (RCI + 3 Questions designed for this study) (1) not at all true: (5) completely true

1. I am concerned that my behavior and speech reflect the teachings of my religion.
2. I make financial contributions to my religious organization.
3. I often read books and magazines about my faith.
4. I spend time trying to grow in understanding of my faith.
5. I have personally tried to convert someone to my faith.
6. I talk about religion with my friends, neighbors, or fellow workers.
7. Religion is especially important to me because it answers many questions about the meaning of life.
8. My religious beliefs lie behind my whole approach to life.
9. I am willing to be persecuted for my religious beliefs.
10. My living environment (room, apartment, house, office,) reflects my religious beliefs (i.e., posters, plaques, bumper stickers).
11. I would publicly defend my religious beliefs.
12. It is important to me to conform to my religious standards of behavior.
13. I enjoy spending time with others of my religious affiliation.
14. Religious beliefs influence all my dealings in life.
15. It is important to me to spend periods of time in private religious thought and reflection.
16. I enjoy working in the activities of my religious organization.
17. I keep well informed about my local religious group and have some influence in its decisions.
18. I employ my religious or spiritual beliefs as a basis for how to act and live on a daily basis. (ADDED)
19. I am a religious person. (ADDED)
20. I am a spiritual person. (ADDED)

Brief Sexual Attitudes Scale: Permissive Subscale (1) strongly agree: (5) strongly disagree

1. I do not need to be committed to a person to have sex with him/her.
2. Casual sex is acceptable.
3. I would like to have sex with many partners.

4. One-night stands are sometimes enjoyable.
5. It is okay to have ongoing sexual relationships with more than one person at a time.
6. Sex as a simple exchange of favors is okay if both people agree to it.
7. The best sex is with no strings attached.
8. Life would have fewer problems if people could have sex more freely.
9. It is possible to enjoy sex with a person and not like them that much.
10. It is okay for sex to be just good physical release.

Brief Sexual Attitudes Scale: Birth Control Subscale (1) strongly agree: (5) strongly disagree

1. Birth control is part of responsible sexuality.
2. A woman should share responsibility for birth control.
3. A man should share responsibility for birth control.

Brief Sexual Attitudes Scale: Communion Subscale (1) strongly agree: (5) strongly disagree

1. Sex is the closest form of communication between two people.
2. A sexual encounter between two people in love is the ultimate human interaction.
3. At its best, sex seems to be the merging of two souls.
4. Sex is a very important part of life.
5. Sex is usually an intensive, almost overwhelming experience.

Brief Sexual Attitudes Scale: Instrumentality Subscale (1) strongly agree: (5) strongly disagree

1. Sex is best when you let yourself go and focus on your own pleasure.
2. Sex is primarily the taking of pleasure from another person.
3. The main purpose of sex is to enjoy oneself.
4. Sex is primarily physical.
5. Sex is primarily a bodily function, like eating.

Attitudes About Pre-Marital Sex (specifically designed for this study) (1) strongly agree: (5) strongly disagree

1. Because my body is a temple of God, I should wait to have sex until marriage.
2. It is against my religion to have sexual intercourse before marriage.
3. It is against my religion to have oral sex before marriage.
4. I am afraid that it would physically hurt me or my partner if we had sex. (*dropped*)
5. I would feel too self-conscious to have sex. (*dropped*)
6. I haven't found the right person to have sex with yet. (*dropped*)

Attitudes About Oral Sex (adapted from National Survey of Adolescents and Young Adults) (1) strongly agree: (5) strongly disagree

1. Once you have sex, it would be harder to say no the next time. *(dropped)*
2. If you have been dating someone for awhile, it is expected that you will have sex. *(dropped)*
3. There is peer pressure to have sex by a certain age. *(dropped)*
4. Oral sex is not really sex.
5. Oral sex is a safe alternative to sexual intercourse.
6. Oral sex is an acceptable moral alternative to sexual intercourse.
7. Waiting to have sex until you are married is a nice idea, but no one really does. *(dropped)*
8. I feel pressure to have sex. *(dropped)*

Expectancies about Sex (adapted from Add Health) (1) strongly agree: (5) strongly disagree

1. Having sex would give you a higher status in your peer group.
2. Having sex would cause your partner would lose respect for you. *(recoded in reverse order; This item was dropped from the scale to increase reliability)*
3. Having sex would give you a great deal of physical pleasure.
4. Having sex would make you more attractive to the opposite sex.
5. Having sex would cause you to feel guilty afterwards. *(recoded in reverse order; This item was dropped from the scale to increase reliability)*
6. Having sex would upset your parents. *(recoded in reverse order; This item was dropped from the scale to increase reliability)*
7. Having sex would make you feel closer to your partner.
8. It would be easy to talk with a partner about whether or not we should have sex. *(This item was dropped from the scale to increase reliability)*

Beliefs about Condoms/STDs (Adapted from the National Survey of Adolescents and Young Adults: Sexual Health Knowledge, Attitudes) (1) strongly agree: (5) strongly disagree

1. It would not be that big of a deal to have sex without a condom once in awhile.
2. Unless I had a lot of sexual partners, you would not need to use condoms.
3. Buying condoms would be embarrassing.
4. Condoms break a lot.
5. It would be hard to talk about condoms with a boyfriend/girlfriend.
6. Sex without condoms would not be worth the risk. *(recoded in reverse order)*
7. Unless I had sex with a lot of people, STDs are not something I would have to worry about.
8. STDs can only be spread when symptoms are present.
9. If someone I was dating had an STD, I would know it.
10. STDs are a nuisance, but they do not have any serious health effects.
11. It would be hard to bring up the topic of STDs with a partner.

Sexual Activity 1 = yes, 2 = no, recoded 1 = yes 0 = no

1. I have held another person's hand.
2. I have kissed another person.
3. My partner and I have thought of ourselves as a couple. (*dropped*)
4. I told other people that my boyfriend or girlfriend and I were a couple. (*dropped*)
5. I told my partner that I love him or her. (*dropped*)
6. My partner told me that he or she loved me. (*dropped*)
7. My partner and I talked about contraception. (*dropped*)
8. My partner and I touched each other under our clothing or with no clothes on.
9. My partner and I touched each others' genitals (private parts).
10. I received oral sex from my partner (receiving oral sex means when a person puts his/her mouth on your genitals).
11. I gave oral sex to my partner (giving oral sex means when you put your mouth on someone's genitals).
12. My partner and I had sexual intercourse (sexual intercourse means when a man puts his penis into a woman's vagina).

Reasons for Abstaining from Sex (specifically designed for this study) (1) not at all true: (5) completely true

1. I don't have a partner or haven't had the right relationship yet.
2. My parents won't let me date/go out with someone
3. My partner doesn't want to. (*If you don't have a partner, skip this question.*)
4. I don't have the opportunity; I have no privacy.
5. I am afraid of pregnancy or sexually transmitted diseases.
6. I am afraid my parents would find out.
7. I don't feel I'm emotionally ready.
8. I promised/pledged I would not.
9. My parents would be disappointed if they found out.
10. I wouldn't be good at it.
11. I wouldn't be able to get birth control.
12. I would lose self respect.
13. I would lose the respect of my partner.
14. My church leaders or church community would lose respect for me.
15. My friends wouldn't respect me.
16. I am waiting until marriage.
17. It violates my relationship with God to have sex before marriage.
18. It's against my religious values to have sex before marriage.
19. I don't feel old enough yet to have sex

Feelings After Sex (Adapted from Sorenson 1973) (1) not at all: (5) a lot/one of the strongest feelings

1. Guilty
2. Fulfilled (*recoded in reverse order*)

3. Inadequate
4. Excited/Happy (*recoded in reverse order*)
5. Confused
6. Mature (*recoded in reverse order*)
7. Scared/Worried
8. Insecure about the relationship
9. Proud (*recoded in reverse order*)
10. Slutty/dirty
11. Sexy (*recoded in reverse order*)
12. Close to my partner (*recoded in reverse order*)
13. Used
14. Content, because I knew that God understood my decision (*recoded in reverse order*)

Contraceptive Self-Efficacy Instrument (Levinson, 1986; Levinson, Wan, & Beamer, 1998) (1) *not at all true*: (5) *completely true*

1. When I am with my partner, I feel that I can always be responsible for what happens sexually with him/her.
2. When I have sex, I can enjoy it as something that I really want to do.
3. If my partner did not talk about the sex that was happening between us, I could not either. (*recoded in reverse order*)
4. When I think about what having sex means, I can't have sex so easily. (*recoded in reverse order*)
5. If my partner and I are getting "turned-on" sexually and I don't really want to have sex, I can easily stop things so that we don't have intercourse.
6. There are times when I could be so involved sexually or emotionally, that I could have sexual intercourse even if I weren't protected (using a form of birth control). (*recoded in reverse order*)
7. Sometimes I just go along with what my date wants to do sexually because I don't think I can take the hassle of trying to say what I want. (*recoded in reverse order*)
8. If there were a partner to whom I was very attracted physically and emotionally, I could feel comfortable telling him or her that I wanted to have sex with him or her.
9. I wouldn't use a birth control method if I thought my parents would find out. (*recoded in reverse order*)
10. It would be hard for me to go to the drugstore and buy birth control products such as condoms, the pill, etc. without feeling embarrassed. (*recoded in reverse order*)
11. It would be hard for me to go to a doctor or clinic to ask for birth control without feeling embarrassed. (*recoded in reverse order*)
12. If my partner and I were about to have sex, I could easily ask if we had protection (or tell him/her that I didn't).
13. If my partner and I were about to have sex, I could say NO if I was not able to talk about protection.
14. There are times when I should talk to my partner about using contraceptives, but I can't seem to do it in the situation. (*recoded in reverse order*)
15. Sometimes I end up having sex with a partner because I can't find a way to stop it. (*recoded in reverse order*)

Appendix D: Factor Table for Religiosity Scale

Items	Time 1	Time 2
Religious beliefs influence all my dealings in life	.83	.86
Religious beliefs serve as the basis for how to act on a daily basis	.82	.85
I spend time trying to grow in understanding of my faith	.79	.77
Religion is important to me because it answers many questions about the meaning of life	.76	.83
It is important for me to conform to religious standards of behavior	.76	.79
I am a religious person	.75	.78
It is important to me to spend time in private religious thought and reflection	.74	.74
My religious beliefs lie behind my whole approach to life	.68	.83
I enjoy spending time with others of my religious affiliation	.67	.74
I would publicly defend my religious beliefs	.66	.64
I often read books and magazines about my faith	.64	.62
I talk about religion with my friends, neighbors, or siblings	.63	.62
I am concerned that my behavior and speech reflect the teachings of my religion	.62	.67
My bedroom reflects my religious beliefs	.62	.61
I am a spiritual person	.61	.68
I am willing to be persecuted for my religious beliefs	.55	.53
I have personally tried to convert someone to my faith	.52	.45
I make financial contributions to my religious organization	.47	.45
I enjoy working in the activities of my religious organization	.45	.59
I am involved with my local religious youth group	*	.31

*Items that loaded less than 0.3 were suppressed

Appendix E: Factor Table for Brief Sexual Attitudes Scale

Items	Time 1				Time 2			
	1	2	3	4	1	2	3	4
A woman should share responsibility for birth control	1.01				.97			
A man should share responsibility for birth control	.84				.96			
Birth control is part of responsible sexuality	.66				.72			
Casual sex is acceptable		.85				.81		
Sex as a simple exchange of favors is okay		.84				.86		
One-night stands are sometimes enjoyable		.83				.92		
Life would have fewer problems if people could have sex more freely		.74				.47		.34
It is okay for sex to be just good physical release		.68				.78		
It is possible to enjoy sex with a person and not like them that much		.62				.63		
I would like to have sex with many partners		.62				.64		
The best sex is with no strings attached		.60				.45		
It is okay to have ongoing sex with more than one person at a time		.57				.54		
I do not need to be committed to a person to have sex with him/her		.52				.66		
Sex is primarily a bodily function like eating		.41		.30				.62
At its best, sex seems to be the merging of two souls			.71				.85	
A sexual encounter between two people in love is the ultimate human interaction			.66				.54	
Sex is usually an intensive almost overwhelming experience			.46				.60	
Sex is a very important part of life			.36				.43	
The main purpose of sex is to enjoy oneself				.64				.53
Sex is primarily the taking of pleasure from another person				.62				.42
Sex is primarily physical				.34				.67
Sex is the closest form of communication between two people				.33			.48	
Sex is best when you let go and focus on your own pleasure	*	*	*	*				.49

*Items that loaded less than 0.3 were suppressed

Appendix F: Factor Table for Attitudes Items Developed for this Study and Adapted from the National Survey of Adolescent and Young Adults

Items	Time 1				Time 2				
	1	2	3	4	1	2	3	4	
Oral sex is a safe alternative to sexual intercourse	1.03					-.34	.57		
Oral sex is an acceptable moral alternative to sexual intercourse	.44	-.30			-.37		.72		
Oral sex is not really sex	.32					-.47	.44		
It is against my religion to have sexual intercourse before marriage		.97			.99				
It is against my religion to have oral sex before marriage		.92			.91				
Because my body is a temple of God, I should wait to have sex until marriage		.49	.38		.62	.42			
I am afraid that it would physically hurt me or my partner if we had sex			.81		.32	.77			
I would feel too self conscious to have sex			.79			.75	.32		
I haven't found the right person to have sex with yet			.54			.56			
I feel pressure to have sex				.56			.38	.62	
Waiting to have sex until marriage is a nice idea, but no one really does				.55	*	*	*	*	
There is peer pressure to have sex by a certain age				.42			.35	.52	
If you have been dating for awhile, it is expected that you will have sex				.41				.30	
Once you have had sex, it is harder to say no the next time				.30	*	*	*	*	

*Items that loaded less than 0.3 were suppressed

Appendix G: Factor Table for Expectations about Sex

Items	Time 1		Time 2	
	1	2	1	2
Having sex would cause you to feel guilty afterwards	.99		1.00	
Having sex would upset your parents	.34		.44	
Having sex would cause your partner to lose respect for you	.33		.38	
Having sex would cause you to feel closer to your partner		.80		.70
Having sex would give you a great deal of physical pleasure		.72		.68
Having sex would make you more attractive to the opposite sex		.55		.60
Having sex would give you a higher status in your peer group		.35		.47
It would be easy to talk with a partner about whether or not we should have sex	*	*	*	*

*Items that loaded less than 0.3 were suppressed