To the Graduate Council:

I am submitting herewith a thesis written by Catherine M. Grello entitled "Pledges of abstinence: An analysis of Pledge Keepers and Pledge Breakers " I have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Counselling.

Teresa A. Hutchens, Ph. D., Major Professor

We have read this thesis
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Deborah P. Welsh, Ph. D., Committee Co-Chair

William A Poppen, Ph. D.

Accepted for the Council:

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Dean of The Graduate School

Pledges of Abstinence:

An analysis of Pledge Keepers and Pledge Breakers

Thesis for the

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Degree

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Catherine M. Grello

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Abstract

Millions of US tax dollars are spent annually to fund abstinence only sexual education programs. These programs must adhere to strict federal guidelines to qualify for this funding. As part of some abstinence until marriage programs, adolescents may be requested to make a public pledge of sexual abstinence. This study examines the intra-individual characteristics and social contexts of adolescents who make public pledges of sexual abstinence and keep their pledge ("pledge keeper") and those who break them ("pledge breakers"). To examine the influence of the pledge the intra-individual and social contexts of "pledge keepers" were contrasted with non-pledging virgin cohorts and "pledge breakers" were compared with non-pledging non-virgin adolescents. It was found that adolescent "pledge keepers:" expressed higher levels of religiosity; were younger; were less likely to be involved in a romantic relationship; were more closely monitored by their parents; had more communication with their parents; had fewer friends who participated in risk behaviors; and lived in more suburban middle class communities when they were compared -to "pledge breakers." "Pledge keepers" and non-pledging virgins were found similar in most aspects except that "pledge keepers" were significantly more religious. "Pledge breakers" and non-pledging non-virgins were found quite similar.

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Chapter1

Introduction

Americans tend to view adolescent sexuality as problem behavior. It is often qualified as deviant and pathological and is typically classified by research with other "risk behaviors" such as delinquency and substance use and abuse (Costa, Jessor, Donovan, & Fortenberry, 1995; Ku, Sonenstein, & Pleck, 1993a). The majority of American adolescents experience the transition from emerging sexual awareness to sexual intercourse before they graduate high school, and less than 20% remain virgins until marriage (Alan Guttmacher Institute, 1998; SEICUS, 1999). While many of these virgins have not participated in coitus, many of them have experienced other sexual behaviors including mutual masturbation, fellatio, and cunnilingus with a romantic partner (SEICUS, 1999).

Although sexual activity among older adolescents is common, sexual intercourse among young adolescents appears to be relatively low, with approximately 5-10% of females and 33% of males under the age of 15 having experienced coitus (Alan Guttmacher Institute, 1994; Sonenstein, Pleck, & Ku, 1989). Most sexually active youth do practice monogamy; however, they also typically experience a series of these monogamous relationships over time and can therefore accumulate several sexual partners before they marry (Alan Guttmacher Institute, 1994). Regardless of age, race, or gender, sexual activity with multiple partners and without using condoms increases vulnerability for pregnancy and sexually transmitted disease (Brewster, 1994; Kirby,

1997; Ku, Sonenstein, & Pleck, 1993b) and perhaps it is this misfortune that is the undeniable problem with sexual activity not the behavior itself.

In light of the current human immunodeficiency virus (HIV) and acquired immune deficiency syndrome (AIDS) pandemic and the grave estimates of teenage pregnancy, adolescent sexuality has been a legitimate concern in American society. The U.S. Centers for Disease Control (CDC) states that as of 1993, 20% of the documented AIDS cases have occurred among youth between the ages of 13 to 18 years of age (Eng & Butler, 1997; Hutson, Martin, & Foulds, 1990). Furthermore, 50% of AIDS and HIV cases among young adults were contracted between the ages of 15 and 24 years of age (Goldsmith, 1993). AIDS has become the sixth leading cause of death for adolescents between the ages of 15-24 years old (Alan Guttmacher Institute, 1994).

Pregnancy statistics are equally alarming; in 1995, nearly one million teenage girls became pregnant; of those who became pregnant approximately 41% terminated their pregnancies with abortion (Van den Bossche & Rubinson, 1998). Although proportionately, adolescent pregnancy rates have decreased, primarily because of increased contraception use and abstinence, teenage pregnancy continues to be a "national problem" (CDC, 1997). The United States has the highest rate of teenage pregnancy and sexually transmitted diseases among industrialized nations (Jones et. al, 1986; McDevitt, 1996). These figures have prompted the U.S. Federal Government to take aggressive action in developing prevention strategies (Kirby, 1997; Wilcox & Wyatt, 1997). The most prominent of these initiatives have been revisions of the sexual education programs in American public schools.

Historically, the content of sexual educational curricula in the United States has mirrored the political climate of the society. When the social milieu is liberal, so too is the sexual education curricula; when the political atmosphere is conservative, the content of sex education is typically reflective (Maddock, 1997). In today's conservative political atmosphere, federal, state, and local government agencies designate millions of dollars annually for abstinence-until-married and abstinence-only educational programs for American adolescents (Berne & Huberman, 1999; Wilcox & Wyatt, 1997). Unfortunately, the efficacy of such programs in the prevention or postponement of sexual activity has received little empirical support (Berne & Huberman, 1999; Kirby, et. al, 1994, Kirby & Coyle, 1997; Wilcox & Wyatt, 1997). Quite the contrary, the few formal evaluations demonstrate that "abstinence-until-married" and "abstinence-only" education programs are typically impotent (Wilcox, Limber, O'Bierne, & Bartels, 1996). These abstinence programs follow a basic format that emphasizes austere Christian dogma and offers little if any information on fertility health and contraception. When information on contraception is imparted, the information tends to be misleading and inaccurate (Eisenman, 1994; Trudell & Whatley, 1991; Whatley & Trudell, 1993).

A component that has been recently added takes the abstinence notion a step further by compelling adolescent students to sign a commitment to remain a virgin until marriage. When program participants sign their vow, the pledges are then publicly displayed. One such pledge program, "True Love Waits," has received national media attention and is supported by numerous conservative Christian organizations (Lifeway Christian Resources, 1999). The proponents of curricula such as "True Love Waits"

suggest that sexual relationships occurring outside of marriage are sinful and those individuals who experience non-marital sex will likely experience a lifetime of guilt, shame, pestilence, and possibly even death (Anderson & Park, 1995; Evans, 1995; Lifeway Christian Resources, 1999; Speck, 1989). Virginity pledges are becoming quite the vogue and are being affirmed and supported by popular new music celebrities, such as Jessica Simpson (Simpson & Friedman, 2000) and the rap group "DC Talk" (Lifeway Christian Resources, 1999), thus appealing to a extensive audience of young adolescent girls and boys. Research on programs that incorporate virginity pledges is scarce.

Using data from the National Longitudinal Study of Adolescent Health (Add Health), Bearman and Brückner (1999a), evaluated adolescents who signed pledges of virginity. They have shown that adolescents who made abstinence pledges were *34% less* likely to experience sexual intercourse than non-pledging adolescents had been. However, the sexual postponement effects of pledging were found to be highly dependent on the age of the adolescent and the number of adolescent peers within the social context who took that same pledge. The peer context of the individual appears to influence the effectiveness of the pledge. Bearman and Brückner (1999a) reported that when the adolescent social group is comprised of too few pledgers or too many pledgers the power of the pledge was found to be neutralized. In other words, sexual education programs such as "True Love Waits" (Lifeway Christian Resources, 1999) may be more appropriate when delivered to small groups of youth, such as religious youth associations, rather than school-wide or district-wide audiences. Furthermore, because age is the primary predictor of sexual transition (e.g. Brewster, 1994; Miller, Norton, Fan, &

Christopherson, 1998), it would therefore be expected that younger adolescents are less likely to be sexually active than older adolescents regardless of pledge status.

Bearman and Brückner (1999a) concluded that the pledge works best when virginity has a powerful personal meaning for the pledger. The investigators assumed that students who pledged had "*decided* to pledge." In school-wide programs, this may not necessarily be true and may explain the effect of too many pledgers reducing the potency of the pledge. Adolescents may feel compelled into signing a vow that is meaningless to them. They may already be sexually active and not signing would be a public admission of their private sexual status, therefore they sign the pledge to avoid public humiliation. Furthermore, one can not assume that an adolescent who did not pledge had chosen not to pledge, rather non-pledging adolescents may not have had the opportunity to pledge and therefore not making a public pledge of sexual abstinence may not have been a decision. The majority of high school adolescents will transition to sexual activity before they graduate (Alan Guttmacher Institute, 1994) and in most instances, this will be the result of a personal decision. However, there will be a minority of students who do choose remain virgins until married whether they have signed a pledge or not (Alan Guttmacher Institute, 1994). What is it about these individuals that brings such profound personal value to their sexual status? Is it simply pledging virtue or is the decision to abstain based on intrinsic values influenced by the individual's social environment, that have been groomed and shaped over time? If the motivation is intrinsic, how do social contexts affect these attitudes?

Rostosky, Welsh, Neiderjohn, Galliher, & Grello (1998) qualitatively analyzed adolescent conversations of moral dilemmas, the investigators identified two distinct styles of sexual decision-making, "Resisters" and "Managers." "Resisters" demonstrated strong religious attitudes and viewed premarital sexuality as "sinful" and "immoral." 'Resisters' valued virginity, abstinence, and sexual purity. They believed that sexual intercourse between two married persons was sacred and they looked forward to sharing "God's gift" with their future husband or wife on their wedding night (Rostosky, Welsh, Neiderjohn, Galliher, & Grello, 1998; Rostosky, Welsh, & Grello, 1999).

Rostosky and colleagues (1998; 1999) had each of the subject couples discuss a scenario in which a high school girl and her boyfriend engage in a variety of sexual behaviors from kissing to sexual intercourse in the girl's home while her parents are away. The target adolescent couples (N=30) were allotted 11 minutes during which they discussed their moral beliefs regarding premarital sexual behaviors. Qualitative analysis of the target couples conversations revealed that "Resister's" tended to blame the scenario couple's transgression on external circumstances, such as, "It is the parent's fault, they should not have left their daughter home alone for the evening." Conversely, the "Managers" viewed premarital intercourse as permissible if the partners "loved each other" and if the individuals were "mature," "responsible," and "prepared" (Rostosky, Welsh, Neiderjohn, Galliher, & Grello, 1998; Rostosky, Welsh, & Grello, 1999). "Managers" believed that premarital sexual intercourse was acceptable under the right conditions. The present study expects that the commitment to virginity expressed by the "Resisters" will be quite similar to that of the "pledge keepers" because like "Resisters,"

"pledge keepers" will have a profound and intrinsic value on virginity. "Managers" and "pledge breakers" utilize a cost/benefit analysis process when making the decision to engage in coitus. They base their decision to have intercourse on a number of factors that include maturity and preparedness. "Managers" view coitus as a pleasurable expression that can be shared between two individuals who are in love, but not necessarily married (Rostosky, Welsh, Neiderjohn, Galliher, & Grello, 1998; Rostosky, Welsh, & Grello, 1999).

The choices to abstain or transition to sexual intercourse appears to be based on personal philosophies. Although researchers have identified several antecedent factors correlated with abstinence and transition, no single factor determines sexual decision making. Rather, sexual values develop from a lifetime of social influences from the community in which the child develops, the home in which the child grows, and the peers with whom the child socializes. The complex interplay of these multiple social contexts has shaped the sexual attitudes of the individual. Figure 1 illustrates the intricate interchange of an individual and his or her social contexts.

Using multivariate analysis of variance (MANOVA), analysis of variance (ANOVA), and chi-square (χ^2), this study will examine these social contexts individually as well as any interaction the contexts may have with gender. Each context will be constructed with variables that are recognized as predictors of sexual abstinence or transition. The family construct will include variables measuring parental religiosity (e.g. Thornton & Camburn, 1987), parental control (e.g. Hanson, Myers, & Ginsburg, 1987), the quality of the parent-child relationship (e.g. Miller, Norton, Curtis, Hill,

Schvaneveldt, & Young, 1997), the parent respondent's belief about their own child's sexual behavior, (e.g. Sucoff, Shew, Beuhring, & Blum, 1999) the parent's comfort in discussing sexual issues with their child (e.g. Pereklita & Sputa-Somers, 1999) and parental marital status (e.g. Thornton & Camburn, 1987). Peer context will be constructed with the quality of the peer relationship, peer closeness, and peer risk behaviors such as cigarette smoking, alcohol use, and substance use (e.g. Costa et. al, 1995). The community context will include variables that measure the physical condition of the neighborhood (e.g. Billy, Brewster, & Grady, 1994). Intra-individual factors will also be constructed with variables that measure daily activities (e.g. Miller, Sabo, Farrell, Barnes, & Melnick, 1998), the individual's own sexual attitudes (e.g. DeLameter & MacCorquodale, 1979), academic grade point average (e.g. Hess, Gass, & Scher, 1999), academic expectations (e.g. Lauritsen, 1994), and personal religiosity (e.g. Thornton & Camburn, 1989). (for a complete list of variables, see Appendix A)

The National Longitudinal Study of Adolescent Health (Add Health), is a dataset designed to assess the behaviors of American adolescents. Add Health was designed to allow investigators to examine adolescent health related behaviors and the influences of the multiple contexts in which adolescents live (Blum & Rinehart, 1997). Using Wave I and II of the Add Health data (Udry, 1998), this investigation will attempt to distinguish between those who sign the virginity pledge and keep it, "pledge keepers," and those who sign the pledge and break it, "pledge breakers." The subset of Wave I of the Add Health dataset used for this project yields 6,605 nationally representative adolescents in grades 7-12 and Wave II yields 4833 adolescents. Wave II has fewer respondents because

adolescents who were high school seniors in Wave I were not included in the Wave II collection unless they had a sibling participating in the data collection (Tabor, personal communication, April 27, 2000). The Wave I subset renders 835 adolescents who replied "yes" when, asked, "Have you ever taken a written or public pledge to remain a virgin until marriage?" (Udry, 1998).

This investigation will explore the possible contextual conditions that may contribute to the commitment of making a virginity pledge. The present investigation will compare "pledge keepers" and "pledge breakers." In addition, "pledge breakers" will be contrasted with "non-pledging non-virgins" (NPNV) and "pledge keepers" will be compared with non-pledging virgins (NPV) to ascertain if the public pledge of sexual abstinence has any influence on their virginity status.

Chapter 2

Review of the Literature

Adolescents do not typically develop in isolation; they are exposed to multiple social contexts, all of which likely influence their decision to abstain or transition to sexual intercourse. Much of the previous research on adolescent sexual behavior has concentrated on the identification of various antecedents or "risk" factors. While some of these influences certainly appear to contribute to an increased vulnerability to disease or pregnancy (Ku, Sonenstein, & Pleck, 1993b), many more of these factors are involved in the fundamental decision of whether to become sexually active in the first place. This paper examined the family, peer, and community contextual variables, as well as the

intra-individual characteristics on the adolescent's decision to abstain or transition to sexual intercourse. A discussion of the literature on the relationship between each of these contexts and intra-individual factors and sexual behavior follows.

History of Social Policy and Sexual Education in America

Sexual morality is a socially constructed phenomenon that reflects the culture, political, and religious beliefs of the social majority. It is often the prevalent opinion, which ordains what sexual behavior is acceptable, and what is pathological. From the moment the Europeans stepped foot on this continent, they have sought to impose their moral views on all its citizens (Maddock, 1997; Wilcox & Wyatt, 1997). Early settlers found Native Americans to be primitives who needed the White man's sagacity to be "Godly." Appraising the sexual beliefs and behaviors of the Native Americans as salacious, the early settlers attempted to impose their morality on all citizens. Anyone, native or otherwise, who did not conform to the majority's moral beliefs, was subject to persecution, conviction, and punishment for "moral crimes"(Maddock, 1997).

As Americans migrated west, contradictions of morality flourished. While sexual purity was publicly acknowledged, brothels and sexual slavery was rampant. With the dawning of the Industrial Revolution, Victorian values became deeply embedded in the lives of the educated and privileged and thus became the norms of American culture. These attitudes stressed individualism, the Christian work ethic, and stern gender scripts. Public discussion of sexuality was strictly taboo. Parents were expected to teach their children only what was proper and children were expected to comply with these instruction (Maddock, 1997).

Formal sexual education emerged as a result of mass urbanization and the social construction of the adolescent life cycle during the late nineteenth century. Churches and quasi-religious organizations such as the YMCA and YWCA developed the earliest of these interventions (Reiss & Reiss, 1990). These associations promoted programs that centered on personal, social, and moral "hygiene"; sexuality was perceived as dirty and abstinence was considered pure. The American Society for Social and Moral Prophylaxis was founded in an effort to develop a national sexual education curriculum (Reiss & Reiss, 1990). The earliest of these programs were puritanical and autocratic; they exhorted only the grievous results of sexual expression (Maddock, 1997).

Around the turn of the century, early feminists such as Margaret Sanger proposed the notion of sexuality as legitimate for purposes other than procreation. Sanger was the first to publicly promote birth control as an alternative for women so that they, like men, could enjoy the physical pleasure of coitus. Her ideas were vehemently rejected, and the major focus of sexual education continued to be problem-centered, aimed at combating prostitution, illegitimacy, and sexually transmitted diseases, predominately syphilis and gonorrhea (Maddock, 1997).

After World War I and Sigmund Freud's theories of childhood psychosexual development, America experienced a surge in non-marital sexual activity and a concomitant increase in sexually transmitted diseases. Sexual education became somewhat less moralistic and more utilitarian as the framework shifted towards a psychological understanding. The acceptance of Freud's concept of sexual latency in childhood justified schools refraining from any involvement in sex education other than

providing fundamental biological information. Freud's assumptions of sexuality greatly influenced cultural constructions of "normal" and "abnormal" sexual expression (Maddock, 1997).

With the conclusion of World War II, Americans confronted several new issues: the importation of new sexually transmitted diseases; a massive population explosion; and an increase in divorce. "Family life" education programs emerged in an effort to address these issues (Maddock, 1997). Alfred Kinsey's research report on sexuality forced Americans to acknowledge that they were in fact a sexually active nation and that people did not always practice the puritanical sexual behavior they proclaimed (Kinesy, Pomeroy, & Martin,1948).

Sexual Education Programs and Social Policy.

Using euphemisms such as "Family Life Education," high schools and colleges began offering sexual education courses for students during the 1950s. These courses promoted family gender roles with an emphasis on middle class Christian values. These curriculums tended to provide minimal information on puberty or reproduction. While females typically received information on menstruation during their home economics classes, all other sex-related facts were kept to a minimum as normative sexuality was still a taboo topic of discussion (Maddock, 1997).

Prudish attitudes rapidly deteriorated during the sexual revolution of the 1960s. Young people no longer accepted the austere attitudes of society and began to openly

display their sexual diversity. This change in the acceptance of sexuality was reflected by modifications in public school sexual education programs. Masters and Johnson's (1966) research impacted the changing attitudes and expectations of the American culture considerably and non-marital sexual behavior become increasingly accepted (Masters & Johnson, 1966).

In 1964, SIECUS (Sex Information and Education Council of the United States) was created to aid in the development of officially sanctioned sexual education instruction for public schools. The focus of education was to increase knowledge of sexuality, development, physiology, reproduction, and STDs. The philosophy was that providing youth with accurate information would decrease adolescent sexual behavior (Kirby et al., 1994). The establishment of SIECUS was met with great opposition from Christian political organizations, such as the "Christian Crusade" and the "Moral Majority." These powerful associations took advantage of the prevailing political climate and intimated that sex education in public classrooms was a communist conspiracy (Breasted, 1970). Consequently, federal funding for sexual education programs rapidly diminished. Sexual education then became a political platform for right-wing extremists. Political and parental pressure was successful in the suspension or conservative modification of sex education programs in the public schools (Maddock, 1997; Schumm, 1995).

Despite political opposition, sex education programs quietly flourished in public schools during the 1970s. Curricula expanded through the 1970s and program titles no longer needed to be socially ambiguous to disguise the course content. Decision-making,

values clarification, contraception, and reproduction became common and accepted topics of instruction. Issues specific to women were introduced but generally only to girls (Maddock, 1997). Congress supported contraceptive services for sexually active youth and required Medicaid programs to provide family planning assistance to adolescents under Title X of the Public Health Services Act (1970). The agenda of the act was not so much to prevent adolescent pregnancy but to help alleviate the growing problem of poverty and welfare in the United States (Wilcox, 1999).

In 1976, the Alan Guttmacher Institute published a report on the increasing rate of pregnancy among adolescent girls (Alan Guttmacher Institute, 1976). In this report, adolescent pregnancy was referred to as an "epidemic," thus giving the problem a biological disease dimension. The same behavior that was considered healthy for adult married couples was an unhealthy and dangerous activity for non-married couples. Adolescent sexuality became a politicized problem of such enormous dimension that society believed it needed to be prevented and controlled (Petty, 1995; Rodgers, 1996; Welsh, Rostosky & Kawaguchi, 2000).

The election of a conservative political government during the 1980s again changed the fabric of public sexual education in the schools. Government support was controversial and funding continued to dwindle. Furthermore, there was an increase in the awareness of violent sexual behavior, as society began to acknowledge the existence of acquaintance rape and date rape (Maddock, 1997). The anti-abortion constituents stirred contention about Title X funded family planning clinics using government funds to provide abortions to unwed adolescent females (Wilcox, 1999). The identification of

HIV and AIDS meant that sexually transmitted diseases were no longer troublesome, but deadly (Maddock, 1997). While not completely accepted by society, homosexuality came out of the closet and into the forefront of mass media. These phenomena combined to cast sexuality as a negative practice and sexual education returned to a strong moralistic emphasis (Maddock, 1997; Welsh, Rostosky, & Kawaguchi, 2000).

In 1981, the Senate passed the Adolescent Family Life Act (AFLA), a policy that restricted federal funding of sexual education programs to only those in which sexual abstinence is the only intervention presented to avert pregnancy and STDs (AFLA, Title XX of the Public Health Service Act, 1981). Although to date there has not been clear evidence of any efficacy of abstinence-only or abstinence-until-married education, the government continues to invest millions of tax dollars for these programs (Levin-Epstein, 1999; Saul, 1998; Wilcox & Wyatt, 1997;Wilcox, 1999). Abstinence programs funded by the AFLA are designed to advocate "chastity" and self-discipline rather than address the topics of human fertility or contraception. AFLA grants were initially awarded to conservative and religious groups that were reported to rely on scare tactics and distorted information regarding the effectiveness of contraception for the prevention of adolescent pregnancy and STDs (Flinn, 1998).

Current Sexual Education Programs. Further restrictions in sexual health education were imposed when the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 was endorsed (P.L. 104-193, Title IX, Sec. 912). The act originally allocated $250 million dollars in matching funds ($50 million per year for the fiscal years 1998 through 2002) to states for abstinence-only sex education (Flinn, 1998;

Levin-Epstein, 1999; National Campaign to Prevent Teen Pregnancy, 1998; Wilcox, 1999). These funds have recently been expanded by an additional $18 million dollars per year (Lowy, 1999). To qualify for funding, abstinence programs are limited to eight legislative themes. These themes includes teaching the "social, psychological, and health gains" of sexual abstinence; that "abstinence from sexual activity outside of marriage" is the standard; sexual abstinence is the "only certain way" to prevent unwanted pregnancy, STDs and other associated health problems; mutual monogamy "is the expected human standard"; "sexual activity outside the context of marriage is likely to have harmful and psychological effects"; children born out-of-wedlock "are likely to have harmful consequences for the child, parents, and society"; and they must also inform children about the risks of sexual activity when associated with drugs and alcohol. In addition, abstinence programs are required to teach refusal techniques and to help children understand the importance of "self-sufficiency" before becoming sexual active (P. L. 104-193, Title IX, Sec. 912) (see Appendix B for exact wording).

Thus far, 48 of 50 states have applied for and received funding through the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (Flinn, 1998; Levin-Epstein, 1999; National Campaign to Prevent Teen Pregnancy, 1998). Furthermore, the National Coalition for Abstinence Education (NCAE) was established as a watchdog agency to assure all Welfare Reform guidelines are strictly adhered to. The NCAE publishes an annual report card on all programs funded by the act. These grades are not based on an evaluation of efficacy, but rather on how well the program complies with the regulations of the act (Flinn, 1998).

Abstinence Based and Comprehensive Sexual Education Programs. Abstinence-only and abstinence-until-marriage curricula espouse sexual abstinence as the only suitable choice for adolescents. These programs state that sexual abstinence, is the only method to avoid unwanted pregnancy and STDs. To discourage sexual behavior these programs will typically either avoid discussions about contraception or provide only information focusing on condom failure rates some of which have been shown to be inaccurate (Eisenman, 1994; Hoffman, 1997; Trudell & Whatley, 1991; Whatley & Trudell, 1993). As mandated by legislature, these programs must teach that sexual behavior outside the boundaries of marriage may lead to physical and emotional harm (National Campaign to Prevent Teen Pregnancy, 1998). Empirical examinations of abstinence-only and abstinence-until-marriage programs are rare (Wilcox & Wyatt, 1997). Those that have been evaluated typically employ poorly designed or questionable methodology and hence have yielded inconsistent and unreliable results (Wilcox & Wyatt, 1997). No abstinence program, thus far, has produced conclusive evidence of its effectiveness either with the postponement of sexual transition or with decreasing sexual activity among participants (Kirby & Coyle, 1997).

Comprehensive or Balanced Realistic Sexuality Education also sanctions abstinence as the best choice to avoid the consequences of sexual behavior. However, these programs also offer accurate information about contraception, reproduction, STDs, and life skills (Kirby & Coyle, 1997). Many comprehensive programs include teaching students negotiation of contraception use, sexual refusal skills, and responsible decision-making. Based on a review of evaluations, Kirby and Coyle (1997) concluded that

programs that encourage both abstinence and contraception do appear to increase adolescent comprehension of sexuality and fertility while providing the necessary skills and knowledge for educated and responsible sexual decision-making. Several comprehensive programs appear to postpone sexual debut and lessen coital activity among sexually active youth (Kirby, et al. 1994). Programs focusing on HIV prevention demonstrate evidence of increased condom use, especially among African American males (see Kirby & Coyle, 1997 for review). Successful comprehensive programs apply social learning theories to focus on the specific behavior goals of reducing sexual activity and enhancing safe-sex application. By modeling and practicing appropriate behaviors, adolescents may experience enhanced motivation and knowledge in the actual benefits of abstinence and contraception (Kirby et al. 1994).

Christian Sexual Purity. Sexual Purity is an educational program aimed exclusively at Christian Youth. The tenants of Sexual Purity are based on strict interpretations of the Bible (Anderson & Park, 1995; Evans, 1995). The message is clear: kissing, fantasy, masturbation, homosexuality, and non-marital sexual expression are sinful behaviors (Anderson & Park, 1995; Evans, 1995; Johnson & Shellenberger, 1994; Speck, 1989; Winkler, 1997). Promoters of Sexual Purity suggest that one can be relieved of sexual tension through prayer and religious commitment (Anderson & Park, 1995; Evans, 1995; Johnson & Shellenberger, 1994; Speck, 1989; Winkler, 1997).

According to the proponents of Sexual Purity, dating ideally involves young couples who are already familiar with each other spending time together in the context of a youth group and should not take place with the couple in isolation (Anderson & Park,

1995; Winkler, 1997). Supporters claim that dating prematurely, dating a non-Christian, or dating without adequate planning and supervision are dangerous and morally destructive (Anderson & Park, 1995; Evans, 1995). Those that advocate Sexual Purity suggest that date rape and acquaintance rape is inherent to inter-ethnic relationships (Anderson & Park, 1995). Anderson & Park (1995) specifically state:

> "You need to avoid tempting situations. Romans 13:14 reminds us to 'put on the Lord Jesus Christ and make no provision for the flesh in regards to lusts' (NASB). Only go to safe places where you won't be tempted sexually and you know you are protected from any possibility of date rape. Group dating with other believers is a good idea because it ensures your safety and testimony" (pp. 49).

Sexual Purity expounds that boys have the responsibility to respect girls. Peer pressure from non-Christian is powerful therefore, it is safest to date only other Christians (Anderson & Park, 1995; Speck, 1989).

Sexual Purity programs suggest that kissing is sinful and should be avoided as it inevitably leads to petting and ultimately intercourse (Speck, 1989). Men and women who are sexually pure maintain sexual abstinence until married (Anderson & Park, 1995; Evans, 1995; Johnson & Shellenberger, 1994; Speck, 1989; Winkler, 1997). According to Evans (1995), there is no greater sin than non-marital sex. The consequences of non-marital sexual sin are purported to be enormous, including physical pain, disease, and death (Anderson & Park, 1995). Anderson and Park (1995) argue:

> "Memories of all of your past sexual experiences can return to haunt you. Your future spouse will not appreciate being compared to your other sex partners.

Those reruns in the mind can give the enemy ammunition to use against you...If your life is filled with sexual exploits your mate may struggle with trust issues". (pp. 94-95).

Sexual Purity proponents discourage sexual fantasy and masturbation (Anderson & Park, 1995; Speck, 1989). It is explained that when one has unchaste thoughts or feelings, especially if they culminate in a sexual activity of any type, one has then broken nearly all of God's commandments (Anderson & Park, 1995).

True Love Waits. Although others have followed, "True Love Waits" was the first and remains the most popular campaign that combines Sexual Purity dogma with pledges of sexual abstinence. The campaign encourages participants to remain abstinent until married. The program has been offered to youth in public, private, and parochial schools throughout the world (Lifeway Christian Resources, 1999). More than 80 Christian denominations currently support the "True Love Waits" program. The campaign operates under the premise that sexual activity outside of marriage leads to guilt, heartache, disease, and death (Lifeway Christian Resources, 1999).

Jimmy Hester initiated the Christian Sex Education project in 1987 in an attempt to develop guidelines for the sexual education for Southern Baptist youth (Lifeway Christian Resources, 1999). The original program was based on Sexual Purity and evolved into what is now "True Love Waits." The youth at Tulip Grove Baptist Church in Hermitage, Tennessee were the very first to sign commitment cards in February 1993 (Lifeway Christian Resources, 1999). Through savvy promotion and public relations, the program rapidly gained notoriety. In September 1993, "True Love Waits" gained

national attention when Today show host, Katie Couric, conducted a live interview with abstinence pledgers at the University of Tennessee, Knoxville, where the campaign was offered to University freshman (Lifeway Christian Resources, 1999). In July 1994, more than 200,000 pledge cards were collected nationally and displayed at the National Mall in Washington, DC. The event was attended by more than 25,000 youth and gained national media attention (Lifeway Christian Resources, 1999). Shortly thereafter, through the efforts of the Baptist World Congress, the campaign began to attract an international audience (Lifeway Christian Resources, 1999). More national and international displays of pledge cards have followed.

Typically, a youthful motivational speaker who proclaims the benefits of abstinence introduces the program. The campaign includes prepared press releases and dialogues for group organizers to use when promoting and presenting the curriculum. Religious celebrations can be included with parents presenting their children with "chastity" rings or pennants (Lifeway Christian Resources, 1998). Lifeway Christian Resources also offers youth a variety of merchandise including T-shirts, coffee mugs, posters, and pamphlets.

Sexually experienced youth are encouraged to become secondary virgins. A special booklet is available to sexually experienced youth to guide them on a journey of forgiveness and a "return to purity." The booklet includes several testimonies of youth that have successfully achieved and maintained secondary virginity status (Rankin & Ross, 1998).

"True Love Waits" program organizers keep no official records of pledges. They base all of their estimates of success on the number of pledge cards sold and displayed. With the exception of Bearman & Brückner (1999a), no other researcher appears to have examined the effects of abstinence pledges.

Community Context

Throughout maturation children acquire their moral values by observing the interactions of the individuals in their various social environments (Petty, 1995). Children and adolescents are deluged with mixed messages regarding human sexuality. From well intentioned adults, adolescents are informed that sexual intercourse is "dirty," "sinful," or "unhealthy" and yet they are also encouraged to wait until they are married to share this spectacular "gift" with their one true love (Campbell & Campbell, 1990). Popular adolescent discourse frequently delivers contradictory messages and images. In the same magazine issue, one article may express the virtues of virginity while the next one advises girls how to dress seductively to attract boys (Carpenter, 1998; Durham, 1998). Television, music videos, movies, and popular songs can add to the perplexity by depicting young men in roles of sexual dominance. In television programs targeted to adolescent audiences, unprotected and exploitative sex is rampant and frequently romanticized. Moreover, in such programs, it is rare for a fictional, sexually active teen to bare the consequences of premature coitus or break from the passionate momentum to negotiate contraception (Carpenter, 1998; Berne & Huberman, 1999; Durham, 1998; Greydanus, Pratt, & Dannison, 1995; Welsh, Rostosky, & Kawaguchi, 2000). In the media, young men are lead to believe that to be masculine one must be sexual and that

the more conquests he has achieved, the more manly he becomes. The national media has besieged society with explicit details of a United States President's predilection for fellatio; ironically, this is the same President who signed the legislative bill that provides millions of federal dollars for abstinence-until-marriage curricula. These are the contradictory images that influence adolescent male and female sexual behavior decisions (Petty, 1995).

The macro-structure of the community context consists of the socioeconomic status (SES) of the environment in which the adolescent develops, attends school, and spends his or her free time, provides the opportunities to develop peer networks that lead to romantic relationships. Adolescents who live in affluent communities are more likely to postpone transition to intercourse than those who live in poorer communities (Lillard & Church, 1999; Miller, Higginson, McCoy, & Olson, 1987). Neighborhoods with relatively high SES tend to be stable and offer more opportunities and positive roles models for youth (Lillard & Upchurch, 1999). Several researchers have suggested that communities with a high incidence of unemployment, crime, and undereducated individuals can contribute to the perception that the immediate benefits of sexual pleasure outweigh the potential costs of sexual intercourse (Billy, Brewster, & Grady, 1994; Ku, Sonenstein, Pleck, 1993; Lillard & Upchurch, 1999; Miller, Higginson, McCoy & Olson, 1987). Distressed neighborhoods experience higher residential instability, are more ethnically homogenous, have fewer intact families, and inadequate youth supervision (Lillard & Upchurch, 1999). Billy and his colleagues (1994) found that premarital sexual activity may become normative in some communities. If the percentage of unmarried

sexually active youth is high, adolescent females in the community are more likely to be sexually active. Reproductive behavior of youth is often an adaptive behavior that is modeled by other members of the community (Billy, Brewster, & Grady, 1994; Brewster, 1994; Ku, Sonenstein, & Pleck, 1993b).

Billy, Brewster, & Grady (1994) analyzed the influence of the community context on intercourse experience, coital frequency, and consistency of sexual activity for adolescent females (N=1852). They found that the high levels of social disorganization that results from a high percentage of single mother households, high school dropouts, unemployment, and crime increases coital experience, frequency of intercourse, and the consistency of future sexual activity among female adolescents. Neighborhoods with large numbers of working mothers also increased sexual activity of female adolescents, regardless of ethnicity. As the number of employed mothers increased, so did the number of sexually active females, suggesting that supervision in neighborhoods with a large number of working mothers may be minimal. Interestingly, although maternal employment was found to increase the probability of premarital intercourse, it may decrease the frequency of coitus among the respondents ($\underline{r}$ = -.002, $\underline{t}$ ratio = -.20, $\underline{df}$=10/1275).

Billy and his colleagues (1994) discovered that the racial composition of the community affects the potential of sexual activity for female adolescents. For example, being the minority in a largely homogenous neighborhood decreases the opportunity for coitus. Female promiscuity increases in heterogeneous neighborhoods where there are

availability of partners increases. The authors surmise that adolescent females may be less likely to engage in sexual activity with an individual of a different race.

Family Contextual Influences

The community context is by nature comprised of the interaction of the governing legislature and the families that call the community home. The adolescent's family, especially his or her parents, has been proposed as the primary source for the instillation of sexual values and attitudes (Miller, 1998). From the first breath until the last, humans are sexual beings. Infants normally explore their genitalia and possibly experience physical gratification (Petty, 1995). The manner in which the parent(s) reacts to this exploratory behavior constructs the child's earliest understanding of what is acceptable sexual behavior. If the parent(s) responds negatively, the child may interpret their curiosity as harmful or offensive; however, if the parent accepts this play as normal and innocent, the child may not internalize a negative connotation (Petty, 1995). This parent-child encounter often represents the child's first sexual education experience.

Family Structure and Parental Supervision. Family structure and the interactions of family members are very meaningful to the development of sexual values and behavior (Lillard & Upchurch, 1999). Adolescents who are reared in households with two biological parents are reported to be far more likely to delay transition to sexual intercourse (Billy, Brewster & Grady, 1994; Miller, Higginson, McCoy, & Olson, 1987), even when controlling for age, gender, race, and parental education, than adolescents raised in single parent or blended families (Flewelling & Bauman, 1990). It has been suggested that single parents exhibit decreased parenting abilities (Wu & Martinson,

1993). Wu and Martinson (1993) found that single mother figures might increase the perception of single motherhood as being acceptable and desirable, thus increasing vulnerability for premarital adolescent pregnancy for their daughters. In one study data suggested that this was especially true for Caucasian girls (n = 3,372, .56, LR = -2,474, *df* 21, p<.001) and Hispanic girls (n = 426 , .84, LR = -756, *df* 21, p<.001) and that the effect remained stable over time (Wu & Martinson, 1993).

In another investigation, Newcomer & Udry (1987) found that parental marital disruption and the subsequent loss of a parent affected both male (n = 206) and female (n = 283) adolescents. Females who lived with a single mother engaged in more precocious sexual behavior when compared to females who lived with both biological parents (*f*= 1.25, p< .01). Sexual activity increased during the initial disruptive period of the parental separation (*f*= 1.03, p< .05) and continued to increase even after the stabilization of the single parent household (*f*= 1.25, p< .01). For male adolescents, the immediate turmoil of the parental separation was also found to positively predict sexual behavior (*f* = 1.69, p< .05). However, once the acute disturbance subsided there was no longer a significant difference between males who lived with a single parent (*f* = .08) and those who lived in an intact family, supporting the notion that for males it is the emotional reaction to the separation that increases coitus rather than the parenting practices or parenting skills of the single parent (Newcomer & Udry, 1987).

Parental supervision, regulation, and monitoring have been found to be important factors in the development of self-regulation, reducing the adolescent's susceptibility to peer pressure, social influence, and impulsivity (Barber, 1997). The stressful

environment of single parenting compromises parental supervision and thus may affect the sexual behavior of adolescent females (Wu & Martinson, 1993). Increased parental supervision reportedly decreases vulnerability for adolescent pregnancy (Wu & Martinson, 1993).

In addition, a significant influence was found for single mothers who have permissive attitudes toward sexual behavior (Miller, Higginson, McCoy & Olson, 1987; Thornton & Camburn, 1987). Thornton & Camburn (1987) found that mothers who had liberal attitudes ($\beta = 0.44$, $p < .01$) tended to have children who are more sexually active ($\beta = 0.10$, $p < .05$) and had more permissive attitudes ($\beta = 0.25$, $p < .01$) than the children of mothers with conservative attitudes. Furthermore, mothers who themselves had experienced premarital pregnancy tended to have less conservative attitudes (Ku, Sonenstein, & Pleck, 1993a; Thornton & Camburn, 1987). Researchers have shown that liberal mothers and fathers tended to have fewer dating rules and less dating supervision than did more conservative parents ($F(4,786) = 14.19$, $p = .000$) (Miller, McCoy, Olson, & Wallace, 1986). Maternal modeling has been another explanation suggested for the discrepancy in sexual activity between females who live in households with a single mother verses those who live in two-parent households (Thornton & Camburn, 1987; Miller & Bingham, 1989). Single mothers who frequently date may directly or indirectly model non-marital behaviors to their daughters through their own sexual practices (Thornton & Camburn, 1987).

Parental Monitoring, Involvement, and Control. Parental involvement, monitoring, and perceptions of parental control have been suggested to increase the

likelihood of abstinence (Hanson, Myers, & Ginsberg, 1987). It has been reported that female adolescents whose parents know all or most of their daughter's friends are less likely to be sexually active (28%, $\underline{n} = 36$, $\underline{p} < .01$) (Moore, Peterson, & Furstenberg, 1996). Adolescents who are not monitored by their parents and perceive low levels of parental support have been found to be at increased risk of premature sexual transition (Small & Luster, 1994). Parental monitoring appears to delay sexual activity, as it tends to decrease the opportunity for intercourse. Adolescents who perceive that their parents supervise them have been found to report fewer lifetime partners and increased contraception use (Small & Luster, 1994).

However, parental supervision, monitoring, and control has been found to be counterproductive when it is extreme (Miller, McCoy, Olson, & Wallace, 1986). In their study, strict parents were described as rigid authoritarians with numerous dating rules; permissive parents had few dating rules and tended not to monitor their children's dating. Based on their research, Miller et al. (1986) has recommended that parents need to balance regulation of their adolescent's and yet encourage their children to become increasingly more autonomous. This process requires flexibility, open communication, and a willingness to negotiate parental roles as the adolescent matures. When parents fail to adjust their monitoring and control practices adolescents have been found to be vulnerable to increased precocious sexual behavior (Miller, McCoy, Olson, & Wallace, 1986). Adolescents with rigid parents may be rebelling against the perceived values of their parents (Miller, McCoy, Olson, & Wallace, 1986). Conversely, adolescents with low levels of parental control or monitoring were found to be more likely to experience

early sexual transition, thus exposing them to STDs and unwanted pregnancy (Miller, McCoy, Olson, & Wallace, 1986). A delicate balance of parental involvement yielded the best prognosis for postponement of sexual transition.

Parental Communication. Parental communication of values is very important to the socialization of adolescents. It has been suggested that parents are responsible for the transmission of attitudes, values, information, and beliefs about sexuality to their children; however, empirical support for the impact of such communication has been relatively inconsistent (Miller, 1998). Several researchers have found that parents actually provide very little direct education about sexuality, reproduction, and contraception (Fox, 1980; Miller, Norton, Fan & Christopherson, 1998). Furthermore parental discussions have been found to be quite moralizing as parents tended to emphasize the consequences of sexuality rather than provide their children with the information required to make informed decisions during dating (Fox & Inazu, 1980). Researchers have reported that fathers have been especially negligent in imparting information to their children and typically leave discussions of dating and sexuality to their wives (Fox & Inazu, 1980). This phenomenon does appear to benefit their daughters but negatively impacts their sons.

Several investigations have examined the relationship of mother-daughter conversations and sexual behavior outcomes. Positive, open, and frequent communication between mothers and their daughters have been shown to lead to less frequent sexual experimentation (Fox & Inazu, 1980). Researchers suggested that when daughters were sexually active, those who had an empathic honest dialogue with their

mothers were more likely to use contraception than those who did not openly discuss sexual topics with their mothers (Fox, 1980; Fox & Inazu, 1980; Moore, Peterson & Furstenberg, 1986). Interestingly, for males whose parents had more traditional sexual attitudes, communications regarding sexual behavior may have increased sexual activity (Moore, Peterson, & Furstenberg, 1986).

Adolescents who had reported that their parents were easy to talk to in general, have been found to be more likely to have meaningful discussions about sexuality ($r = .64$, $p < .001$) and with their mothers ($r = .53$, $p < .001$) (Pereklita & Sputa-Somers, 1999). This finding held for both males and females regardless of socioeconomic status (SES). As adolescent age increased, parental communication also increased (Pereklita & Sputa-Somers, 1999). Sexually active females have been found to be more comfortable discussing sensitive topics with their parents when their parents held liberal attitudes rather than conservative attitudes (Fisher, 1989). However, parents reported that they were frequently uncomfortable discussing their own values, sexual attitudes, sexual intercourse, and contraception with their children (Miller, Norton, Fan, & Christopherson, 1998). Miller and his colleagues (1998) did find that adolescent sexual abstinence was moderately correlated with the quality of the communication youth had with their parents ($r = .32$, $p < .05$ for males, $r = .36$, $p < .05$ for females). Parental communication was not found to be significantly related to sexual intention for males as it was for females ($r = -.24$, $p < .05$). Quality rather than the frequency of the parent-adolescent communication was found to be more important in influencing adolescent sexual intentions and sexual behaviors. In summary, family sexual education can be

extremely important, but only if this expression opposes sexual activity and is affirming about sexual abstinence. Mothers and fathers are more likely to articulate negative sexual topics with their daughters than with their sons (Moore, Peterson, & Furstenberg, 1986).

Other Parental Influences. It has been reported that the likelihood of abstinence increases with the adolescents' positive perception of the mother-child relationship ($r = -.4069$, $p = < .01$) (Jaccard, Dittus, & Gordon, 1996). It has been the adolescent's perception of maternal disapproval of sexual activity that has been found to be associated with increased abstinence ($r = -.4437$, $p = <.01$) (Jaccard, Dittus, & Gordon, 1996). When relationship satisfaction was reported to be high and perception of maternal disapproval of premarital sexual intercourse was high the adolescent was significantly less likely to report having engaged in sexual intercourse ($r = .37$, $p = <.01$). When children reported that they felt close to their mother, they tended to have sexual attitudes that reflected their mother's premarital sexual attitudes. The quality of the mother-child relationship appeared to predict the adolescent's sexual values and beliefs (Weinstein & Thornton, 1989). Sexually active adolescents reported lower levels of relationship satisfaction with their parents than did virgin youth (Bingham & Crockett, 1996).

Researchers have shown that low levels of educational attainment by mothers has been associated with the premature sexual behavior of males (estimated coefficient = .225, odds ratio 1.252, $p<.05$) (Ku, Sonenstein, & Pleck, 1993a). Adolescent females with mothers who did not graduate high school have been found to be at greater risk for premature sexual transition than females whose mothers had completed their high school education (e.g. Brewster, 1994). Females who had a mother who attended college were

reported to be more likely to postpone sexual debut (e.g. Brewster, 1994). Furthermore, contraception use appeared to increase with maternal education achievement (Ku, Sonenstein, & Pleck, 1993a).

Maternal recommendations for birth control methods have been found to neither hasten nor postpone sexual debut (n =1, 403), RR = 1.02, CI (.93, 1.12) (Sucoff, Shew, Beuhing, & Blum, 1999). However, maternal communication regarding contraception and HIV/AIDS risks has been reported to increase consistent contraceptive use for males (Holtzman & Rubinson, 1995; Jaccard, Dittus & Gordon, 1996).

Researchers have reported that parents play an important role in fostering adolescent religiosity by teaching their children their own values and beliefs. Researchers suggest that parents model and reinforce their own commitment to their religious beliefs through their own behavior (Gunnoe, Hetherington, & Reiss, 1999; Thornton & Camburn, 1989). It also appeared that parents indirectly influenced religiosity by providing their children with a social network of peers having similar values and behaviors through their own attachment and involvement with the religious institution (Gunnoe, Hetherington, & Reiss, 1999). As most religious institutions discourage non-marital sexuality, involvement in religious youth groups has been shown to enhance sexual abstinence and provides adolescents with a reference group that values virginity (Thornton & Camburn, 1989). This association may be especially important for young adolescents.

The Peer Context

During adolescence peer relationships become increasingly important as the individual shifts his or her primary affiliation and attachment figures from parents and begins to identify with a peer group. The peer group itself also alters its structure as it reorganizations from a single-sex to a mixed-sex group. During middle adolescence, this attachment intensifies and peers begin to influence one another through behavioral modeling and experimentation with mixed-sex interactions (Darling, Dowdy, Van Horn, & Caldwell, 1999). As they mature, older adolescents will typically spend increasingly more time in the mixed-sex group and as their behaviors change toward one another, they will eventually begin to develop romantic relationships with group members of the other sex. As romantic relationships evolve there is a shift from the primary attachment figure (the parent) to the new attachment figure (the romantic partner) (Furman & Wehner, 1994; Fierling, 1996; Sullivan, 1953). Some investigators have suggested that romantic attachment is biologically adaptive and functions as a catalyst for the development of sexual relationships and procreation (Furman & Wehner, 1994; McCabe, 1984).

Influences of Peers. As adolescents mature, adults and parents encourage increased autonomy and independence; this new freedom gives rise to broadening occasions for sensual experimentation (Graber, Brooks-Gunn, & Peterson, 1996; Miller, Sabo, Farrell, Barnes, & Melnick, 1998). Increases in sexual interest may be due in large to burgeoning sex hormones and the appearance of secondary sex characteristics during puberty (Furman & Wehner, 1994; Sroufe, Cooper, & DeHart, 1996). In addition to the physical changes they experience and increases in autonomy, adolescents' cognitive skills

also mature. Although adolescents have not fully mastered decision-making skills, they are able to cognate logically and understand consequential outcomes of sexual behavior. Nevertheless, adolescents have an exaggerated belief that they are invincible (Elkind, 1974). They are cognizant of negative behavioral ramifications for others, yet they have difficulty appreciating their own vulnerability. It is the concept of the adolescent "personal fable" that frequently leads youth to explore new behaviors such as sexual experimentation despite an impersonal knowledge of the risks (Elkind, 1974; Sroufe, Cooper, & DeHart, 1996).

Function of the Peer Group. Erik Erikson (1968) has proposed that the central task of adolescence is to establish a sense of identity. Personal identity is suggested to be both affective and behavioral and includes an understanding of one's relationship with others in his or her social environments and the development of one's own beliefs, values, and attitudes (Sroufe, Cooper, & DeHart, 1996; Welsh, Rostosky, & Kawaguchi, 2000). Henry Stack Sullivan (1953) argued that identity formation was a process of intimacy with same-sex peer relationships progressing towards cross-gender relationships. During preadolescence, "chumships" fulfill the need for social intimacy. These relationships tend to be mutually rewarding and provided validation of one's self-worth. The task was to experience interdependent love and to avoid loneliness. Sullivan (1953) suggested that during adolescence the need for sexuality begins to blossom and is typically fulfilled by a romantic partner. Through modeling of its members, the peer group may explicitly or implicitly determine the group norms for sexual behavior. Investigators report that it is the actual prevalence or at least the perception of peer group sexual behavior that may

influence the attitudes and actions of the group members. Peer group rejection or acceptance of premarital coitus likely influences the adolescent's decision to abstain or transition to sexual intercourse (Graber, Brooks-Gunn, & Peterson, 1996).

Types of Peer Influences. Peer selection depends on a number of factors including the individual's neighborhood and school. Peer groups tend to be homogenous as adolescents generally select friends with similar characteristics and attitudes to their own. Best friends actually are less influential than the larger intermediate peer network or clique; therefore, it is the composition of the peer group that is the important predictor for behavior (Bearman & Brückner, 1999b; Brown & Theobald, 1999). For example, Bearman & Brückner (1999b) found that peer pressure was greater for low-risk females when the peer group was composed of high-risk males; peer pressure was less of a problem for females with either a single low-risk best male friend or those who had several low-risk female friends. While age is typically the primary predictor of sexual transition, having older peers in the peer network was found to be even more significant (Bearman & Brückner, 1999b).

Research suggests that peer influence can be negative as well as positive (Brown & Theobald, 1999). Puissant group leaders set the social norms for how the members dress, talk, and their sexual or abstinent behavior (Bearman & Brückner, 1999b; Brown & Kirby, 1999). Unlike the asymmetrical parent-child relationship, peer relationships are more symmetrical and reciprocal making the affects of the association of peers difficult for investigators to evaluate. Through the interactions with peers, adolescents develop the competence for intimacy with the other sex individuals. The mixed-sex peer group

context typically provides the adolescent a resource from which they can select their first romantic and sexual partners (Furman, 1999). Frequently an adolescent's first experience of sexual intercourse occurs within the context of a romantic relationship (Grello, Dickson, Welsh, & Wintersteen, 2000). Furthermore, it has been found that if an adolescent has intercourse in one romantic relationship he or she is likely to have coitus in subsequent relationships, even when one partner is a virgin (Grello, Dickson, Welsh, & Wintersteen, 2000).

Researchers have described four types of peer influence. Peer pressure is described as overt attempts from the peer group to shape the attitudes and the behavior of the group members. Peer pressure is suggested as being especially problematic for adolescent males who may lack the confidence and social support to refuse unwanted sexual behavior (Zimmerman, Specher, Langer, & Holloway, 1995). Zimmerman and colleagues (1995) examined adolescents' perceived ability to spurn unsolicited sexual advances among a sample of 2,472 racially mixed males and females in the 10th grade. Adolescent males reported that they definitely or probably would not be able to refuse pressure to engage in intercourse from a female partner. This was statistically significant when compared to female perceptions ($t = -16.78$, $p < .001$). These findings held regardless of race or previous sexual experience. Sexual refusal has been suggested as socially more acceptable for females, as their sexual decisions are typically supported by their peers and society; therefore, they may feel more confident and competent rejecting unwanted sex than their male counterparts (DeGaston, Weed, Jensen, 1996). Through

experience and increasing confidence adolescents may become less susceptible to peer pressure (Sippola, 1999).

Modeling is covert influences; the individual learns behavior by watching the actions of parents, other group members, prominent adults, and media personalities. Parents are early models for their children; however, during adolescence peers increasingly replace parents as models. For this reason, the dominant or popular peers tend to be the most influential members of the group and often establish the group norms for dating and sexual behavior (Brown & Theobald, 1999).

Organized peer group activities are structuring opportunities that can enhance or assuage sexual activity. Being involved in volunteer work (Hess, Gass, & Scher, 1999), being a member of a religious youth group (Sack, Keller, & Hinkle, 1984; Studer & Thornton, 1987; Werner-Wilson, 1998), and having close friends with commitment to abstinence (Sack, Heller & Hinkle, 1984) have been shown to encourage sexual abstinence. Youth groups appear to be especially important because they not only provide a network of peers with similar sexual attitudes, but they also provide activities that may serve as alternatives to sexual exploration (Werner-Wilson, 1998). Having close friends that are older and sexually active can facilitate structural opportunities such as non-chaperone parties that may advocate transition directly or indirectly (Brown & Theobald, 1999).

Researchers argue that the peer group is an important context in which adolescents establish beliefs and attitudes that govern the social group (Brown & Theobald, 1999). Peer group norms, as defined by peer group selection, establish those

behaviors that the group deems acceptable or unacceptable. Conformity and acceptance of the group norms is essential for group membership (Brown & Theobald, 1999).

Researchers have suggested that the peer group establishes the social norms. Costa and colleagues (1995) examined adolescent sexual activity and peer influence and the relationship with other risk behaviors such as drug, alcohol use, and cigarette smoking. The investigators found that having several peers who engage in such activities increased the likelihood of promiscuity. The investigators identified precursors to risky sexual behavior that include; valuing independence, possessing lower educational expectations, and being accepting of other non-conventional behaviors rather than protective factors such as valuing achievement, having high educational expectations and aspirations and possessing traditional or conservative views (Costa, et al., 1995).

The Intra-Individual Characteristics

The internal or individual factors have been shown to impact one's decision to abstain or transition to sexual behavior include gender (e.g. DeGaston, Weed & Jensen, 1996), religiosity (e.g. Thornton & Camburn, 1989), daily activities (e.g. Miller, Sabo, Farrell, Barnes, & Melnick, 1998), and academic achievement and expectations (e.g. Hess, Gass, & Scher, 1999). Some adolescents may be profoundly committed and so highly value their virginity that their do not intend to engage in sexual intercourse until married regardless of external circumstances (e.g. Herold & Goodwin, 1981).

Gender. Males have been found to be more likely than females to experiment with a variety of sexual behaviors including intercourse, oral, and anal sex (DeGaston, Weed, & Jensen, 1996). Conversely, it has been found that emotional factors rather than

physical desire shape female sexual decision-making (Whitley, 1988). For adolescent girls it has appeared that an intense personal motivation affects their decision whether to abstain or transition to coital activity (Gilligan, 1982; Whitley, 1988; DeGaston, Weed, & Jensen, 1996). Feelings of passion and physical desire do not appear to be enough to justify sexual transition for girls; there must also be an intense emotional commitment of love (DeGaston, Weed, & Jensen, 1996). Gilligan (1982) suggests that intimacy and relationships are very important to females. According to Gilligan (1982), females are socialized to associate sexual intimacy with love, marriage, and procreation whereas males are generally socialized to be less emotional, more impersonal, to give less importance to emotional intimacy. Carroll, Volk, and Hyde (1985) found that females reported that purely physical sexual activity with the absence of emotion was difficult. If emotional commitment was absent, females would often refuse sexual involvement with their partner (Carroll, Volk, & Hyde, 1985).

Daily Activities. Miller, Sabo, Farrell, Barnes, & Melnick (1998) examined the affect of participation in organized sports as a deterrent to sexual activity, including the timing of sexual debut, frequency of sexual intercourse, and the number of coital partners for male and female athletes when compared to non-athletic male and female cohorts (N=611). Respondent ages were 15 to 18 years old. They found that participation in organized athletics minimally decreased rates of premature coitus among female athletes (r = -.17, p<. 01) when compared to non-athletic female adolescents. Sexually active athletic females in this sample reported lower rates of intercourse during the previous year (r = -.17, p <. 01), fewer sexual partners (r = - .14, p<. 01) and less lifetime

frequency (r = -.17, p<. 01) than did non-athletic females. Male athletes experienced moderate positive increases in earlier transition to sexual behavior, frequency of intercourse, and the lifetime partners when compared to non-athletic males. The authors postulated that girls are more likely to abstain from sexual activity if they are engaged in a scholastic sport activity after school when parental control and supervision is typically minimal. It was suggested that female athletes likely viewed the positive benefits of virginity verses the perceived negative health risks of pregnancy and illness that could endanger their long-term athletic goals. For males however, participation in sports typically increased their peer status and their attraction to females and thus broadened the availability and selection of partners and the opportunities to engage in coital activity.

Savage and Holcomb (1999) reported similar findings that participation in high performance sports, such as track and field, decreased sexual activity among females (21% of athletes, 50% of cohorts). The investigators found that sexually active female athletes were more likely to have used contraception at their last intercourse than were non-athletic female cohorts (82% of athletes, 59.2% of cohorts). However, in this sample the female athletes did report having had a sexually transmitted disease (STD) more frequently than did their non-athletic counterparts (29.4% for athletes, 10.4% for cohorts). Perhaps having already contracted a STD increased the use of contraception.

Involvement in cultural art activities, such as music and art decreased sexual activity for both males and females (Miller et. al, 1998). For males being involved in cultural art activities postponed transition (r = -.12, p<.05), decreased the number of partners (r -.19, p<.01), decrease the frequency of coitus during the past year

($r = -.17$, $p<.01$) and in their lifetime ($r = -.15$, $p<.05$) when compared to cohorts. Being a member in the school band, orchestra, drama club, or chorus reportedly decreased exposure to sexual activity for female students (Zill, Nord, & Loomis, 1995). However, the researchers did not investigate transition among homosexual adolescents.

Academic Achievement & Expectations. High academic expectations of both parents and adolescents have been found associated with delayed sexual initiation (Hanson, Myers, Ginsburg, 1987). When parents encourage their children to pursue high levels of education, they may be indirectly promoting behaviors that lead to the prevention of pregnancy and STDs such as postponing sexual debut and increasing the use of contraception (Lillard & Upchurch, 1999). Unsafe sexual practices have been reportedly associated with low academic self-image among females (Volois, Kammermann, & Drane, 1997). Additionally, females with low levels of academic performance have reported poor contraceptive practices and having had more lifetime partners (Brewster, Billy, & Grady, 1993; Volois, Kammermann, & Drane, 1997). Adolescents that are successful academically have been found more likely to abstain from sexual intercourse (Hess, Gass, & Scher, 1999).

Hockaday, Crase, & Stockdale (1999) compared the academic aspirations of young pregnant adolescents, age 16 to 19, and pregnant women who were over age 19. Young Caucasian pregnant adolescents reported that they wanted more children, had lower educational expectations, lower self-esteem, undereducated mothers, had traditional views of gender roles, attained earlier puberty, imbibed in premature alcohol experimentation, and participated in more delinquent activities.

Hockaday, Crase, and Stockdale (1999) concluded that young African American females were more likely to have higher educational aspirations, however their educational expectations were lower, they tended to have high self-esteem with an external locus of control, they wanted more children, participated in fewer delinquent activities, drank alcohol, smoked cigarettes and marijuana at an older age, and engaged in earlier coitus than Caucasian adolescent females. The investigators propose that it is because of the cultural dichotomy in such characteristics that research regarding sexual activity and adolescent pregnancy have been frequently inconsistent suggesting that the cultural context of Caucasians and African Americans may be uniquely influential (Hockaday, Crase, & Stockdale, 1999).

Lauritsen (1994) investigated racial and gender differences in sexual behavior. She found clear discrepancies for the effects of educational aspirations and educational disappointment among a nationally representative Caucasian and African American adolescents age 11 to 17 (N= 1,725). Adolescents with high educational expectations were those who indicated they wanted to attend college. Educational expectation and educational disappointment had very little influence for African American males. Those Caucasian males and females with high levels of educational disappointment were those adolescents who indicated that despite the desire to attend college, they did not expect to. Educational disappointment significantly predicted sexual activity for African American females (β = 1.71 (2.50), p< .05). High educational expectations predicted lower reports of sexual behavior for Caucasian females (β =-. 22 (4.54), p< .05), and Caucasian males

(β = -.08 (2.10), $p < .05$). Apparently, for this sample the importance of future educational aspirations was considerable and not worth the risk of consequences associated with sexual activity.

Lower academic aspirations are particularily problematic for females, who are less likely to use contraception and to have more lifetime sexual partners than those females with higher educational aspirations (Valois, Kammermann, & Drane, 1997). It appears that adolescent females with higher educational expectations have the perception that they have more to lose should they become pregnant or contract a STD and therefore either abstain from sexual activity or take the necessary precautions. They may understand that the potential consequences of coitus may prevent them from attaining their lifetime goals.

Influences of Religion. Thornton & Camburn (1989) reported that religious involvement influences adolescent sexual attitudes and behavior. Specifically, they found that an adolescent's non-acceptance of premarital intercourse was correlated with religiosity and with involvement in a mainstream religion, one that specifically favors coitus only within the confines of marriage for the purpose of procreation. It was the consistency of the messages and the degree of commitment to the doctrines of the religion that appeared to be influential factors predicting commitment to virginity (Thornton & Camburn, 1989). Involvement in a religious organization may provide adolescents with a social network of individuals with similar attitudes and demeanors that encourage abstinence (Studer & Thornton, 1987; Thornton & Camburn, 1989; Werner-Wilson, 1998). Church attendance alone does not appear to be enough, as it has been

suggested that it is the values in religious beliefs as measured by the frequency of prayer and the individual's personal commitment to the religious affiliation's scriptures that may be the more salient marker of religiosity (Thornton & Camburn, 1989). In other words, one may attend church regularly but not integrate the religion's doctrine. Adolescents who reported profound religiosity were more likely to abstain or postpone transition to sexual activity than adolescents who reported low levels of religiosity (Brewster, Cooksey, Guilkey, & Rindfuss, 1998; Miller & Bingham, 1989; Miller, Higginson, McCoy, & Olson, 1987; Thornton & Camburn, 1989; Wallace & Forman, 1998). However, when these highly religious adolescents did engage in sexual intercourse they were consistently and significantly less likely to use contraception, thus increasing their vulnerabilty for pregnancy and sexually transmitted diseases (Brewster, Billy, & Grady, 1993; Brewster, Cooksey, Guilkey, & Rindfuss, 1998). This may result because there typically is little dialogue regarding contraception from peers, parents, or other adult members within the adolescent's social network. This reference group membership may also be a source of cognitive dissonance as using or needing contraception would require forethought, which would counter group norms and religious doctrines.

Virgin Status Commitment. There is evidence that, before transition to sexual intercourse, most adolescents accept that coitus is unavoidable and "with the right person and under the right circumstances," it is permissible (Rostosky, Welsh, & Grello, 1999). It appears that sexual transition behaviors follow permissive sexual attitudes (DeLameter & MacCorquodale, 1979). Herold & Goodwin (1981) investigated variables distinguishing, adamant virgins, non-virgins, and potential non-virgins. They reported

that individuals who were adamant virgins were highly committed to maintaining their virgin status. Potential non-virgins differed in their moral commitment and were thought to be temporary virgins not having found a suitable partner or the opportunity to transition to sexual intercourse. In addition, potential non-virgins tended to be younger and had fewer dating partners than non-virgins. Adamant virgins were found to be more committed to their religion ($p < .001$), they had peers with less permissible sexual attitudes ($p < .001$) and less coital experience ($p < .001$), and they had parents that disapproved of non-marital sexual relations ($p < .001$) (Herold & Goodwin, 1981). Approximately 50% of adamant virgins and 2% of potential non-virgins, stated that the reason they had not engage in sexual activity was because of moral or religious beliefs. Conversely, 54% of potential non-virgins and 16% of adamant virgins stated that they had not found the right partner (Herold & Goodwin, 1981).

Feldman and associates (1997) examined the sexual behaviors of both virgin and non-virgin adolescents. Surveying a random cluster sample of male and female high school students ($N = 926$) the authors examined intercourse as well as other nontraditionally investigated sexual behaviors including oral and anal sex. For non-virgins the mean age for transition to first intercourse was 13.76 years for males and 14.8 years for females. Their analyses revealed an increase in sexual activity with an increase in age. Interestingly, Feldman, et al. (1997) did find that 19% of those reporting virgin status had experienced mutual masturbation and oral sex with their partners. Therefore, while technically virgins, these youth were found to be participating in a number of sexual behaviors.

Feldman and associates (1997) reported that the virgin youth in their study were younger, completed 14 hours or more per week of homework, employment, or religious attendance whereas nonvirgins were older, completed fewer hours of homework, employment and less religious attendance. Parental education, television or computer usage, telephone use, physical activity, or family functioning was not found associated with virginity status. Sexually active youth were found to have been involved in at least one relationship lasting 12 months or longer, experimented with other sexual behaviors, including oral sex and mutual masturbation, were more likely to use drugs and alcohol, smoke cigarettes, and completed less than five hours of homework or employment per week (Feldman, et al., 1999).

Statement of the Problem

Previous research has fallen short of examining the whole individual and has instead typically focused on isolated antecedent or protective factors. This investigation will examine several social contexts, intra-individual characteristics, and the influences of these constructs on the adolescent's decision to abstain or transition to sexual intercourse. Furthermore, previous research has typically used small cross-sectional data rather than large longitudinal data. Using MANOVA, ANOVA, and χ^2 analyses, this study will examine several of the previously identified influential interactions occurring within the adolescent's multiple social contexts, thus providing an aggregate model of the influences on an adolescents decision to abstain or transition to sexual intercourse.

Chapter 3

Methodology

Data for this study come from a public data set that yields a nationally representative sample of adolescents. This data set is rich and complete with numerous variables measuring the behaviors and attitudes of American adolescents and their parents. The current study will examine the contextual differences between those adolescents who made a pledge of sexual abstinence and kept it and those who made a pledge and broke it. The investigation will also examine the affect of pledges of abstinence and the differences between "pledge keepers" and non-pledging virgins as well as "pledge breakers" and non-pledging non-virgins. The data set and collection procedures are described below.

The National Longitudinal Study of Adolescent Health

Data for this investigation come from the National Longitudinal Study of Adolescent Health (Add Health), Wave I and Wave II (Udry, 1998). J. Richard Udry of the Carolina Population Center at the University of North Carolina in Chapel Hill, designed the interviews and questionnaires collected the data for Add Health. J. Richard Udry and his associates collected the sample. The purpose of Add Health was to collect data measuring the influences of various social contexts on the general physical health and emotional wellbeing of American adolescents (Udry, 1998). Until Add Health, the study of adolescent sexual behaviors has been limited to small homogeneous samples (Udry & Bearman, 1998). The Add Health data set permits opportunities to study numerous behaviors, including sexual activity, and the multiple social contexts that

influence an adolescent's sexual decisions. The principle investigators employed a longitudinal design in an effort to examine the changes in development of behaviors and attitudes of adolescents over time (Udry, 1998; Udry & Bearman, 1998).

Data used in this investigation are from the public use data set provided by the NICHD (National Institutes Child Health and Human Development) under Grant Number 2 R44 HD13776 to Sociometrics Corporation. The Add Health project was developed by a request from the U.S. Congress in response to the NIH Revitalization Act of 1993 (P.L. 103-43, Title X, Subtitle D, section 1031). The government requisitioned the NICHD to subsidize a longitudinal study that would provide data regarding the emotional and physical health of adolescents. The study was required to focus on individual characteristics, inter-personal, familial, and community factors that affect adolescent health and risk behaviors. The author of this investigation has properly obtained permission for the use of the data set for this research (see Appendix C).

Procedures & Global Participants.

The full data set of the National Longitudinal Study of Adolescent Health (Add Health) was comprised of four data collections: in-school, Wave 1 in-home, parent interview, and Wave 2 in-home questionnaires.

In-School Participants. The Add Health data sample collection began with more than 90,000 in-school questionnaires administered in 1994 through 1995. The sample included students in grades 7-12 attending 80 randomly selected U.S. high schools and their 54 feeder schools (typically middle schools) for a total of 134 public, private, and parochial schools. The sample was stratified by region, urbanicity, classification of

school, and ethnic composition to create a nationally representative sample of the American adolescent population (Blum & Rinehart, 1997; Udry, 1998). The in-school paper and pencil questionnaire was administered at the participating schools and included the demographic characteristics of the respondents, risk behaviors, individual future desires, self-esteem, general health status, household dynamics and family composition, peer relationships, daily activities, as well as the education level and occupation of parents (Udry, 1998). The in-school questionnaire did not contain any sensitive quarries. Participation in the in-school data collection provided a rooster of individuals from which subjects were randomly selected to participate in the Wave 1 and Wave II data samples.

In-Home Samples

Wave I. From the in-school sample, 20,745 students were randomly selected to participate in the Wave I in-home interview (Udry, 1998). Data were collected between April and December 1995. The approximately ninety-minute in-home interview set an improved standard in the collection of sensitive health queries by using 's an interactive interview. Participants were read non-sensitive questions by a trained interviewer and the participant's responses were recorded directly onto a laptop computer. For sensitive inquiries, the adolescent participator listened to recorded questions through headphones and entered his or her answer directly into a laptop computer, thus attempting to avoid any apprehension or undue influence of the interviewer or parents who might be nearby (Blum & Rinehart, 1997; Udry, 1998; Udry & Bearman, 1998). The disadvantage of the self-administered method was relying on the respondent to properly follow the directions of the questionnaire. The Add Health software program was designed in such a way that

if an adolescent reported that he or she had not had sexual intercourse than no further questions regarding sexual behavior and contraception was asked (Udry & Bearman, 1998).

Investigative topics reported in the Wave I data set include: health service utilization, general health status, and nutrition; family dynamics and composition; education expectations and future prospects; summer and after-school employment experience; decision-making processes; risk behaviors such as substance use, contraception practices, and the co-occurrence of these risk behaviors; romantic relationships with the order of events in the development of romantic relationships and sexual relationships; religiosity and spirituality; delinquent activities; peer relationships and perception of parental relationship and parental control (Udry, 1998).

Parent Interview. The parent or parent figure (in most cases the residential mother) of all of the adolescent participants were asked to complete an interviewer assisted questionnaire. Approximately 86% of the parents (N=18,000) completed the interview during the collection of Wave I data. The Add Health database was designed to permit the researcher to link the responses of the adolescent with the responses of his or her parent to create a more comprehensive view of the adolescent subject (Udry & Bearman, 1998). The database was designed in such a way that renders it impossible to identify individuals and their families.

The parent questionnaire includes information regarding genetic health conditions, marital or cohabiting relationships, volunteer activities, education, income and occupation, the parents' health risk behaviors, elements of the parent-child

relationship in addition to general communication, comfort in discussing sexual topics with their child, parental control and monitoring, parental beliefs and perceptions regarding their child's sexual experience, and their own religiosity and spirituality (Udry, 1998).

Wave II. Respondents who participated in Wave I were interviewed for the Wave II collection between April and September 1996 (N=14,787). Those individuals who were high school seniors during the Wave I interview were excluded from the Wave II data collection unless they had a sibling who also participated in the Add Health study (Udry, 1998).

The investigative design and the administration techniques used in Wave II of Add Health were similar to those used in Wave I. Again, all interviews were administered in the respondent's home. Non-sensitive questions were conducted by an interviewer who entered the participant's response directly into a laptop computer. Privacy was respected by having the participant listen to sensitive questions through headphones and personally enter his or her answers into the laptop. There was no parent interview in the Wave II data collection. Questions regarding race and ethnicity were assumed stable and were not repeated during the Wave II collection, however questions concerning sun exposure and enumerated nutrition questions were added (Udry, 1998).

Present Study

The public use data set available from Sociometrics, is comprised of a random sample of 6504 students and their parents drawn from the complete Add Health data set was used for this investigation (Udry & Bearman, 1998). Independent and dependent

variables were selected based on past empirical research which have been shown most significant in predicting adolescent sexual or abstinent choice. Predictor variables have been selected to assess the adolescent's values, beliefs, and behaviors and the important contextual elements that impact adolescent development included intra-individual, parental, peer, and the community domains.

Theoretical Model

The purpose of this study was to examine the multiple contexts and their possible influences on an adolescent's attitudes towards sexual behavior verses a commitment of abstinence. The central assumption of the proposed model is that a complex set of individual and contextual influences contributes to adolescents' decision to abstain or transition to sexual activity. Empirical research has focused primarily on identifying "problem" circumstances or behaviors that predict premarital sexual activity (Udry & Bearman, 1998). This investigation accepted the notion that sexual activity is a normative milestone, as the majority of adolescents are sexually active by the time they graduate high school (Alan Guttmacher Institute, 1994). The aim of this study was to identify the differences between those who successfully commit to abstinence and those who choose to transition to sexual intercourse. It is assumed that neither decision is necessarily problematic, just different and there is a multitude of factors in the adolescent's life that may influence these decisions. The factors including parental communication (e.g. Holtzman & Rubinson, 1995; Jaccard, Dittus, & Gordon, 1996), parental monitoring (e.g. Barber, 1997), the quality of the parent-child relationship (e.g. Miller, Norton, Curtis, Hill, Schvaneveldt, & Young), religiosity and spirituality (e.g.

Thornton & Camburn, 1989), peer relationships (Shah & Zelnik, 1981; Miller, Norton, Curtis, Schvaneveldt, & Young, 1997), daily activities (e.g. Miller, Sabo, Farrell, Barnes, & Melnick, 1998), school performance (e.g. Hess, Gass, & Scher, 1999), community (Brewster, Billy, & Grady, 1993; Brewster, 1994), and the individual's personal values (Werner-Wilson, 1998), have all been found to mediate or affect sexual decisions. It is hypothesized that the inter-individual characteristics and social contexts will vary among those who made abstinence pledges and committed to them and those who made abstinence pledges and did not keep them.

Research Contexts

Intra-Individual. The intra-individual characteristics were constructed with questions from Wave II that measured the daily activities of the adolescent, the adolesents sexual beliefs and attitudes, grade point average (GPA) for Math, English, Science, and Social Studies, school attachment, autonomy, and religiosity and spirituality were assessed. In addition, age and dating experience were be examined (See Appendix A for a complete list of each item comprising each of the constructs examined).

The aggregate variable for daily activities was constructed with the sum of 4 items assessing the amount time the respondent spent during the previous week doing hobbies, playing an active sport, exercising, and "hanging out" with friends (α = .44). Two aggregate variables were created to assess each respondent's sexual beliefs and attitudes. Participants responded to six statements inquiring their beliefs about the consequences of engaging in sexual intercourse (e.g. If you had sexual intercourse: It would make you less lonely [reverse code]; Your partner would lose respect for you).

Each of these statements were measured on a 5-point Likert-type Scale with 1 being strongly agree and 5 being strongly disagree with each statement. Sexual belief variables were collapsed by computing the mean average of the six items (α = .74), thus creating one variable of sexual beliefs. A view of pregnancy variable was created by computing the mean average of two items that asked respondents if getting pregnant or getting someone pregnant would be embarrassing for the respondent or his or her family (α = .82).

Grade point average was computed with the mean average of the respondents' grade in Math, English, Science, and Social Studies. The nature of school attachment was constructed by computing the mean average of two items measuring how close the respondent felt to the people at school and if the respondent felt like a part of his or her school. These items were measured on a 5-point Likert-type Scale (1 = strongly agree to 5 = strongly disagree) (α = .76). A variable measuring the respondents' expectations and aspirations for college was computed by the mean average of responses to questions regarding desire to attend college and expectation to attend college (α = .86).

An aggregate variable indicating the respondent's level of autonomy was created by the summing of seven questions about family decision-making (e.g. Do your parents let you make your own decisions: about what you wear?; bedtime on weeknights?; diet?) The higher the score, the more autonomy parents grant adolescents in decision-making (α = .64). Religiosity was assessed using two items, belief in religious scriptures (1 = agree, 2 disagree, 3 no scriptures) and importance of religion (1 = very important to 4 = not important). In addition, an aggregate variable measuring external expressions of

religiosity was created by the mean average of 3 items. (Attendance at religious services, participation at religious youth group, and frequency of prayer) (α = .75).

One dummy variable for each wave was created for dating. If the respondent indicated having been involved in a romantic relationship at Wave I, the respondent was scored a 1, if the respondent was not involved in a romantic relationship, the respondent was scored 0. This process was repeated for Wave II.

Parents. The parent context included 13 variables which measured the parents' and adolescent's perception of parental monitoring, the adolescent's relationship with his or her residential mother and/or father, the parents' expectations for their children's college education; parent-child activities; general communication; the parents' comfort in discussing sexual topics with their children; and the parents' perception regarding their children's dating, sexual, and abstinence behaviors.

To estimate parental involvement, six dichotomous variables were created. Adolescent respondents were asked if they had engaged in activities with their parents. Activities included whether or not they had shopped, gone to the movies, attended religious services, talked about a personal problem, talked about life, and discussed grades with their mother and with their father. Analyses of missing values revealed non-random missing values resulting from single parent household (1320 adolescents reported living with only their mother, 298 reported living only with their father). So as not to penalize adolescents who live in single parent households these items were collapsed into six dichotomous variables (shopping with parents, movies with parents, etc.). T-tests

were performed and no significant differences between mother and father responses were found.

A single variable was created to assess the respondent parent's beliefs about their child's dating and sexual experiences by the sum of three dichotomous questions (Do you think your son/daughter: has gone out on a date? kissed or necked? had sexual intercourse?) (α = .86). The mean average of five items (5-point Likert-type Scale, 1 = strongly agree to 5 = strongly disagree) assessed the nature of the respondent parent's comfort in discussing sexual topics with their adolescent (α = .78). The respondent's parent was asked: if they felt they knew enough to talk about sex and birth control with their child; if such discussion would be difficult or embarrassing; if they felt that their child would get the necessary information elsewhere; and if they felt discussing sexual topics with their child would encourage sexual activity. The mean of two items, the amount of time the parent respondent has discussed moral issues and the social impact of sexual intercourse, were averaged to create a single parent moral discussion variable (α = .79). These items were scored on a 4-point Likert-type Scale (1 = not at all to 4 = a great deal). A single variable estimating the amount of parent sexual conversations was constructed with two items (How much have you talked with your child about: sex? birth control with your child?) (α = .85). These items were scored on a 4-point Likert-type Scale where 1 = not at all to 4 = a great deal.

Parental expectations for their child's education were assessed by the mean average of two 5 point Likert-type Scale items (1 = low to 5 = high) measuring expectations for the completion of high school and attending college (α = .70). Three

items were combined by mean average to determine the degree of parental monitoring and supervision (telling parents where you are after school, on the weekend, and what is going on in your life) (α = .73).

To determine the quality of the parent-child relationship two variables were created. Parental closeness was determined by averaging the means of two items (How close do you feel to your mother? to your father?) (α = .59). Quality of the parent relationship was measured by averaging the means of two items (good relationship with your mother; good relationship with your father) (α = .58).

Peers. Each participant identified five of his or her closest male friends and five of his or her closest female friends. For the current study, the peer context was defined by those measured items that describe the quality of the peer relationship with each of the first three male and female friends. One variable was created for male peers by summing 15 dichotomous items (did you spend time together on the telephone; after school; go to peer's home; talk about a problem; for each male peer) (α = .70). Likewise, one variable was created to estimate the relationship with female peers by the sum of the equivalent female peer items (α = .73). In addition, the risk behaviors of the respondent's three best friends are included in the peer context by averaging the means of three variables (of your three best friends: how many smoke cigarettes? drink alcohol? smoke marijuana?) (α = .73).

Community. The community context included two categorical items based on the Add Health administrator's observation and classification of the participant's neighborhood (urban, suburban, inner city or rural) and the dominant type of buildings on

the respondent's street(single family homes, mobile/trailer homes, residential apartments, etc.). Items assessing the condition of the neighborhood and the physical state of the family dwelling were combined by mean average to estimate the condition of the respondents' community (α = .91).

Criterion Variables

Primary for this investigation, the key criterion variable was the question of the abstinence pledge. During the Wave I interviews the participants were asked, "Have you ever taken a public pledge to remain a virgin until marriage?" A total of 834 participants replied that they had taken such a public pledge in Wave I.

To identify "pledge keepers" and "pledge breakers," as well as non-pledging virgins (NPV) and non-pledging non-virgins (NPNV), the second key criterion variable regarded sexual activity. During the Wave I and Wave II interviews the participants were asked, "Have you ever had sexual intercourse?" If one took a pledge of abstinence and remained a virgin through both Waves of data collection, this participant was then classified as a "pledge keeper." If a subject had taken a public pledge of sexual abstinence in Wave I and did not transition to sexual intercourse in Wave I, but did have sex in Wave II, then this individual was classified as a "pledge breaker." Of the respondents who pledged in Wave I, 84 reported that they had sex in Wave I. Because was not possible to determine if the respondent had sex before or after the pledge, these cases were eliminated from analysis. Respondents who had not taken a public abstinence pledge and had not had sexual intercourse in either wave, were considered a NPV. Likewise, individuals who had sexual intercourse and had not taken a pledge were

labeled a NPNV. All married and previously married persons were excluded from this investigation.

Hypotheses

Hypothesis 1. It is expected that "pledge keepers" will be significantly different than "pledge breakers" in their intra-individual characteristics and social contexts. Specifically, "pledge keepers" will demonstrate higher levels of religiosity, more negative views about sexuality, and stronger levels of parental involvement, monitoring, and supervision. In addition, "pledge keepers" are expected to have had friends who participated in fewer risk behaviors (smoking cigarettes, using marijuana, and drinking alcohol), spent less time with their peers, had higher grade point averages, and lived in suburban and middle class communities when they were compared with "pledge breakers."

Hypothesis 2. Pledging virgins ("pledge keepers") are not expected to differ significantly from non-pledging virgins (NPV) and pledging non-virgins ("pledge breakers") are not expected to differ from non-pledging non-virgins in their intra-individual and social contexts.

Data Analysis

Multivariate Analysis of Variance (MANOVA). MANOVA is an extension of analysis of variance (ANOVA) and is a technique that is applied for situations where multiple dependent variables are examined. MANOVA allows one to examine dependent variables concurrently while controlling for correlations between the variables (Tabachnick & Fidell, 1996). MANOVA tests hypotheses by comparing two or more

sample means. Main effects and interactions of the dependent variables and independent variables can be examined with this technique, distinguishing differences between the pledge of sexual abstinence and sexual status uncomplicated (Tabachnick & Fidell, 1996).

MANOVA is limited by generalizability, as the results of these tests generalize only to the population of study. MANOVA does not assure causality to the independent variables. MANOVA is also limited by sample size and the number of cells being evaluated; the sample size must be larger than the number of dependent variables (Tabachnick & Fidell, 1996). MANOVA does pairwise deletion and temporarily eliminates cases with missing values on a single given cell during analysis (Tabachnick & Fidell, 1996).

Unequal sub-sample size and missing data were issues with the Add Health data. Tabachnick & Fidell (1996) recommended missing data analysis be performed to determine randomness of the missing values (Tabachnick & Fidell, 1996). Many adolescents lived in single parent households; therefore questions that query the relationship of the respondent to his or her mother and father separately have been collapsed, eliminating the non-random missing values of the absent parent. Likewise, the male peer and females variables have been combined by summing the number of responses, as some respondents may not have completed the questions for all three of their friends, thus creating non-random missing values that would have interfered with analysis.

Chi-Square (χ^2). Dichotomous variables and group variables have been examined with independent-samples chi-square tests. Independent chi-square tests determine if the observed frequencies of a variable are significantly different from expected frequencies (Huck & Cormier, 1996). If the frequencies are significantly different the χ^2 is large and one can conclude that the variables are related (Huck & Cormier, 1996; Tabachnick & Fidell, 1996).

Chapter 4

Results

Wave II data yielded 4833 adolescents. Twenty-nine respondents reported having married in Wave II and were eliminated from the analysis. Fourteen cases were removed because the respondent did not answer or did not know if he or she had ever taken a public pledge of sexual abstinence. Wave I data provided 834 adolescents who answered "yes" to the question, "Have you ever taken a public pledge of sexual abstinence?" Of those that pledged in Wave I, 667 respondents participated in the Wave II data collection. Seventy-eight of the cases were not included in analysis because these respondents answered yes to "Have you ever had sex?" in Wave I. The data did not provide any method to determine if the pledge was made before or after transition to intercourse. After qualifying respondents, 589 of the Wave I virgin pledgers remained in the analysis. Ninety-four (16%) respondents reported having sex in Wave II and were categorized as "pledge breakers," and the remaining 475 were classified as "pledge keepers." Non-pledging virgins (NPV) were any who had not pledged or had sex in Wave I or Wave II (n=2225) and non-pledging non-virgins (NPNV) were any respondents who reported

having sexual intercourse in Wave I or Wave II (n=1976). Table 1 provides detail characteristics of the sub-samples including gender, race/ethnicity, parental marital status and age.

Three separate MANOVA's were performed to compare adolescents by pledge and virginity status: one for individual characteristics, one for the parent context, and one for the peer context. Differences were found to be significant by group and by gender for all three domains (Individual characteristics x group (F (30,5812)=27.485, p>.001) and gender (F (10, 1980)=9.891, p>.001), parents x group (F(24,6686)=37.466, p>.001) and parents x gender (F(8,2305)=5.851, p>.001), and peers x group (F(9,10066)=71.152, p>.001), peers x gender (F(3,4136)=33.883, p>.001) and peers x gender x group (F(9,10066)=21.069,p>.001). One ANOVA was performed comparing adolescent groups for the community context. Differences were found significant for community conditions x group (F (3,4253)=23.663, p>.001); however gender x community conditions were not significant. (See table 2).

Chi-square analyses were performed on eight dichotomous variables measuring activities and general communication with parents, involvement in a romantic relationship in Wave I and Wave II and two continuous community variables. All χ^2 demonstrated significant differences between groups. (See table 3).

Hypothesis 1

The unequal sample size of "pledge keepers" (n=495) and "pledge breakers" (n=94) violated the MANOVA assumption of homoscedasticity because the distribution of the dependent variables were not normal. Heteroscedasticity is not considered fatal to

multivariate analysis when the distributions are examined for skew and kurtosis and if the data were corrected by transformation of the variables (Tabachnick & Fidell, 1996). Conover and Iman (1981) recommended rank transformations when confronted with the violation of the assumption of homoscedasticity. Rank transformation of the data rids the problem of distribution in parametric statistics (Conover & Iman, 1981). Rank transformation was therefore performed on the dependent variables before analysis.

Three MANOVAs were performed to identify differences between "pledge keepers" and "pledge breakers" on intra-individual characteristics (11 variables), parents (8 variables), and peers (3 variables). One ANOVA was performed to assess community differences. Chi-square analyses were performed on 10 additional items (2 community, 2 dating, and 6 parent). Table 4 illustrates the significant MANOVA and ANOVA findings of the "pledge keeper" and "pledge breaker" sub-sample.

Intra-individual characteristics were found to be significant for "pledge keepers" (n=247) and "pledge breakers" (n=44) ($F(9,281)=2.873$, $p=.003$) while no significant interaction differences were revealed. Importance of religion had a significant main effect ($F(1,289)=9.234$, $p=.003$) with "pledge keepers" (M=1.31, SE=.037, CI=1.24,1.39) placing greater importance to religion than "pledge breakers" (M=1.64, SE=.092, CI=1.46,1.82). External expressions of religiosity were found to be significant, ($F(1,289)=11.361$, $p=.001$) with "pledge keepers" (M=1.68, SE=.054, CI=1.57,1.78) expressing their beliefs more frequently through prayer, and attendance at religious services and youth groups than "pledge breakers" (M=2.11, SE=.131, CI=1.85,2.37). Sexual beliefs ($F(1,289)=11.888$, $p=.001$) also had a main effect, with "pledge keepers"

(M=2.19, SE=.04, CI=2.11,2.27) having more conservative sexual beliefs when compared with "pledge breakers" (M=2.54, SE=.098, CI=2.34,2.73). Expectations and aspirations for college attendance revealed a main effect (F(1,289)=6.337, p=.012), with "pledge keepers" (M=4.6, SE=.06, CI=4.52,4.76) expecting to attend college significantly more than "pledge breakers" (M=3.96, SE=.148, CI=3.67,4.25). Age (F(1,289)=5.021, p=.002) was a significant factor as "pledge breakers" (M=17.15, SE=.245, CI=16.67,17.63) were found to be significantly older that "pledge keepers" (M=16.16, SE=.1, CI=15.96,16.35).

Two dichotomous variables measuring romantic involvement in Wave I and Wave II were examined with chi-square to test the potential relationship of dating and transition to sexual intercourse. Being involved in a romantic relationship during Wave I (Pearson $\chi^2(1,n=589)=10.56$, p=.001) or during Wave II (Pearson $\chi^2(1,n=589)=28.648$, p>.001) significantly increased the likelihood of breaking a pledge of sexual abstinence. There were no other significant intra-individual differences between "pledge keepers" and "pledge breakers." (See table 5 for significant χ^2 results).

The MANOVA for the parent context was significant (F(9,289)=4.279, p>.001) for "pledge keepers" (n=254) and "pledge breakers" (n=47). No interaction with gender was revealed. Main effect findings include "pledge keepers" (M=1.69, SE=.047, CI=1.60,1.77) expressed that they monitored more closely by their parents (F(1,297)=5.693, p=.018) than "pledge breakers" (M=1.99, SE=.124, CI=1.75,2.24) did. Significant differences were found between "pledge keepers" and "pledge breakers" in the perceptions of their parents' perceptions of their child's dating and sexual experience

($F(1,297)=13.283$, $p>.001$). There was a discrepancy between parent perception of dating and sexual behavior and the actual dating and sexual behavior of "pledge breakers," with few parents of "pledge breakers" reporting that they believed that their child had dated or kissed a partner ($M=1.33$, $SE=.15$, $CI=1.04,1.62$). Slightly more than half of the parents of "pledge keepers" perceived that their child dated ($M=.765$, $SE=.06$, $CI=.65,.88$). Discussing sexual topics ($F(1,297)=5.192$, $p=.023$) was found to be more distressing for the parents of "pledge breakers" ($M=3.87$, $SE=.124$, $CI=3.63,4.12$) than for the parents of "pledge keepers" ($M=4.25$, $SE=.05$, $CI=4.16,4.34$). No interactions were found for pledge status and gender ($F(9,289)=1.032$, $p=.414$). No other significant main effect differences were revealed for the parent context (See table 4).

Six chi-square tests were performed to test the potential relationship of discrete variables measuring the presence or absence of activities (attending religious services, going to the movies, going shopping) and general communication (talk about grades, a personal problem, life) with parents during the past week and keeping or breaking the vow of abstinence. No significant relationship was found for shopping, discussing grades, and discussing a personal problem with parents and keeping or breaking the pledge. Chi-square results indicated that "pledge keepers" were more likely than "pledge breakers" to have attended religious services with their parents (Pearson $\chi^2(1,n=580)=16.479$, $p>.001$). "Pledge keepers" were found more likely to talk about life with their parents (Pearson χ^2 $(1,n=580)=16.749$, $p>.001$). "Pledge breakers" were found significantly less likely to go to the movies with their parents (Pearson $\chi^2(1,n=580)=8.439$, $p=.004$). (See table 5).

One MANOVA was performed to examine differences in peer context between "pledge keepers" (n=429) and "pledge breakers" (n=88). Main effects were found for "pledge keepers" and "pledge breakers" by group (F(3,511)=10.28, p<.001) and interaction effects for group x gender were found significant (F(3,511)=4.644, p<.001). Having friends who smoke cigarettes, drink alcohol, and use marijuana was found significantly different (F(1,513)=26.886, p<.001) for "pledge breakers" (M=3.01, SE=.263, CI=2.56,3.61) when compared with "pledge keepers" (M=1.59, SE=.112, CI=1.37,1.81). Interaction effects were found significant for time spent with female peers (F(1,513)=8.36) by group and gender. Male "pledge breakers" (M=3.44, SE=.444, CI=2.56,4.31) spent more time with female peers than male "pledge keepers" (M=2.47, SE=.181, CI=2.12,2.82). Female "pledge breakers" (M=3.72, SE=.264, CI=3.20,4.24) spent less time with female peers when compared to female "pledge keepers" (M=3.99, SE=.125, CI=3.75,4.24). No other group x gender differences was significant. (For significant results see table 4).

One ANOVA was performed to examine differences in the condition of the respondent's community ("pledge keeper" n=421, "pledge breaker" n=76). Group differences were found significant (F(1,439)=4.391, p=.037), interaction with gender was not significant (F(1,439)=.053, p=.818). "Pledge keepers" (M=1.53, SE=.04, CI=1.45,1.61) live in slightly better kept homes and neighborhoods when compared with "pledge breakers" (M=1.7, SE=.095, CI=1.5, 1.94).

Two chi-square tests were performed on categorical variables describing the community (urban, suburban, rural, etc.) and the neighborhood (single family, homes,

apartment building, mobile home, etc.). Adolescents who kept their pledge were more likely to live in suburban communities and significantly less likely to live in urban neighborhoods (Pearson $\chi^2(6,\underline{n}=554)=14.209$, $\underline{p}=.027$). "Pledge keepers" tended to live in single family homes and were less likely to have lived in mobile homes or apartment buildings (Pearson χ^2 $(4,\underline{n}=582)=11.54$, $\underline{p}=.021$). (See table 5).

Hypothesis 2

To identify differences between "pledge keepers" and non-pledging virgins (NPV) and between "pledge breakers" and non-pledging non-virgins (NPNV) analyses identical to those performed on "pledge keepers" and "pledge breakers" were executed. Three MANOVA, one ANOVA, and ten chi-square tests were performed for the virgin group ("pledge keeper" and NPV) and the non-virgin group ("pledge breakers" and NPNV) separately. Unequal sample sizes necessitated performing rank transformations before implementing MANOVA analyses.

"Pledge keepers" and non-pledging virgins. MANOVA analysis of the intra-individual characteristics of virgin youth was significant ($\underline{F}(10,1205)=11.694$, $\underline{p}<.001$). As predicted, "pledge keepers" ($\underline{n}=247$) and NPV ($\underline{n}=971$) shared several similar attributes as no significant differences were found for GPA, educational expectations and aspirations, school attachment, or age. However, not surprisingly, the two groups did significantly differ on the three items measuring religiosity and the measure of sexual beliefs. Belief that religious scriptures are the word of God ($\underline{F}(1,1214)=21.37$, $\underline{p}<.001$) was found to significantly differentiate the two groups, with "pledge keepers" ($\underline{M}=1.11$, $\underline{SE}=.032$, $\underline{CI}=1.06,1.18$) endorsing the statement more frequently than NPV ($\underline{M}=1.27$,

SE=.015, CI=1.24,1.3). Significant differences in the importance of religion (F(1,1214)= 48.386, p<.001) were also found, with "pledge keepers" (M=1.31, SE=.051, CI=1.12,1.41) indicating higher levels of importance of religion than NPV (M=1.69, SE=.024, CI=1.64,1.74). External expressions of religiosity (F(1,1214)=76.821, p<.001) were significantly different with "pledge keepers" (M=1.68, SE=.064, CI=1.55,1.8) reporting that they had attended religious services, participated in religious youth groups, and prayed more frequently when compared with NPV (M=2.26, SE=.03, CI=2.2,2.32). Sexual beliefs (F(1,1214)=51.952, p<.001) had a main effect with "pledge keepers" (M=2.5, SE=.018, CI=2.46,2.53) reporting more conservative sexual beliefs when compared with NPV (M=2.19, SE=.039, CI=2.11,2.64) (see table 6). Chi-square test did not show any significant difference in dating at Wave I (Pearson χ^2(1,n=2720)=.665, p=.415), however, NPV were less likely to have been involved in a romantic relationship in Wave II than "pledge keepers" were (Pearson χ^2(1,n=2720)=5.208, p=.022) (Table 7).

The overall MANOVA of the parent context identified significant differences (F(9,1328)=3.08, p=.001). No significant differences were identified for "pledge keepers" (n=254) and NPV (n=1086) on items measuring the quality of the parent-child relationship (F(1,1336)=.565, p=.452), parental monitoring and supervision (F(1,1336)=1.238, p=.266), parent's beliefs about adolescent dating and sexual experiences (F(1.1336)=.956, p=.328), and parental comfort in discussing sexual topics (F(1.1336)=.114, p=.736), pregnancy and STDs (F(1.1336)=.023, p=.880). Parental closeness (F(1,1336)=8.11, p=.004) was significant with "pledge keepers" (M=4.42, SE=.048, CI=4.38,4.57) indicating that they felt closer to their parents than NPV

(M=4.33, SE=.021, CI=4.29,4.38). Discussions of the social and moral impact of sexual intercourse (F(1,1336)=9.157, p=.003) was significant with the parents of "pledge keepers" (M=2.93, SE=.063, CI=2.8,3.05) reporting more frequent discussions of moral and social consequences of premarital sexual intercourse with their children than NPV (M=2.71, SE=.029, CI=2.66,2.77) (See table 6).

Chi-square tests were performed on items measuring the presence or absence of activities and general communications with parents. Chi-square tests were not significant for having discussed grades or having gone to the movies with their parents. "Pledge keepers" were found more likely to have gone shopping with their parents when compared to NPV (Pearson $\chi^2(1,n=2694)=9.129$, p=.003). "Pledge keepers" were found more likely to have attended religious services with their parents (Pearson $\chi^2(1,n=2694)=56.726$, p<.001). "Pledge keepers" were more likely to have discussed life with their parents when they were compared with NPV (Pearson $\chi^2(1,n=2694)=56.276$, p<.001). NPV were more likely to have discussed a personal problem with their parents (Pearson $\chi^2(1,n=2694)=9.979$, p=.002). Table 7 illustrates the significant chi-squares.

MANOVA for the peer context was significant (F(3,2303)=7.265, p<.001). No significant differences for "pledge keepers" and NPV were identified for relationships with male and female peers. However, having peers who smoke cigarettes, drink alcohol, or smoke marijuana was found significant (F(1,2305)=14.985, p<.001) with "pledge keepers" (M=1.60, SE=.118, CI=1.36,1.82) reporting that they had fewer friends who participate in risk behaviors when compared with NPV (M=2.08, SE=.053, CI=1.98,2.18). No interaction effects were found. (See table 6 for significant results).

ANOVA analysis for the condition of the community was not found significant ($F(1,2316)=.054$, $p=.816$). Chi-square analyses of community (Pearson $\chi^2(5,n=2690)=5.108$, $p=.403$) and neighborhood characteristics (Pearson $\chi^2(6,n=2571)=4.67$, $p=.587$) also revealed no significant differences for virgin youth.

"Pledge breakers" and non-pledging non-virgins. MANOVA analysis of the intra-individual characteristics of adolescents ("pledge breakers" $n=44$, NPNV $n=735$) who had transitioned to sexual intercourse was significant ($F(10,766)=3.783$, $p<.001$). As predicted "pledge breakers" ($n=44$) and NPV ($n=735$) share several similar attributes as no significant differences were found for GPA, educational expectations and aspirations, school attachment, religiosity, or age. Daily activities ($F(1,775)=4.984$, $p=.026$) were significant with "pledge breakers" ($M=7.45$, $SE=.406$, $CI=6.66,8.25$) reporting having been involved in hobbies, sports, exercise, and hang out with friends more frequently than NPNV ($M=6.48$, $SE=.087$, $CI=6.31,6.65$). No significant difference was found for autonomy ($F(1,775)=4.031$, $p=.45$). Sexual beliefs ($F(1,775)=19.568$, $p<.001$) and views of getting pregnant ($F(1,775)=4.913$, $p=.027$) were significant. NPNV ($M=2.93$, $SE=.017$, $CI=2.89,2.96$) appeared to have more liberal views about sexual intercourse than "pledge breakers" ($M=2.54$, $SE=.08$, $CI=2.38,2.69$). NPNV ($M=2.65$, $SE=.046$, $CI=2.56,2.74$) tended to agree less strongly than "pledge breakers" ($M=2.18$, $SE=.211$, $CI=1.77,2.59$) that getting pregnant or getting someone pregnant would be embarrassing. (See table 8). Chi-square tests on involvement with a romantic partner in Wave I and Wave II showed that NPNV (Pearson $\chi^2(1,2070)=7.716$,

p=.005) were significantly more likely to have been involved in a romantic relationship during Wave I. No significant difference was found for dating in Wave II. (See table 9).

MANOVA analysis of the parent context of adolescents who have transitioned to sexual intercourse ("pledge breaker" n=47, NPNV n=933) was significant (F(9,968)=3.525, p<.001). Comfort in discussing sexual topics (F(1,976)=3.981, p=.046) was significant with parents of NPNV (M=4.21, SE=.023, CI=4.17,4.26) indicating more comfort in discussing sexual topics with their children than the parents of "pledge breakers" (M=3.87, SE=.124, CI=3.63,4.12). Parents' perceptions of their child's dating and sexual behavior (F(1,976)=15.873, p<.001) was significant. Parents of NPNV (M=1.94, SE=.032, CI=1.88,2.00) had more realistic perceptions of their child's dating and sexual experiences. Whereas the parent's of "pledge breakers" were not as aware of their adolescent's sexual experience (M=1.33, SE=.172, CI=.99,1.67). (See table 8).

Chi-square tests were performed on six dichotomous variables measuring activities (shopping, attending religious services and going to the movies) and general communications (discussion of grades, a personal problem, talking about life) of the adolescent and his or her parent during the past week. Only shopping with parents was significant with "pledge breakers" indicating that they had recently shopped with their parents (Pearson $\chi^2(1,n=1965)=4.501$, p=.034). (See table 9).

MANOVA analysis of the peer context (NPNV n=1749, "pledge breakers" n=88) was not significant (F(3,1831)=1.955, p=.119). ANOVA of the community context (F(1,1937)=.004, p=.947) was not significant (NPNV n=1865, "pledge breakers" n=76).

Chi-square tests of community and neighborhoods of adolescents who have transitioned to sexual intercourse revealed no significant differences.

Chapter 5

Discussion

The effects of pledges of sexual abstinence. Adolescent sexual activity is a concern for American parents, educators, and policy makers. Most adolescents will transition to sexual activity before they graduate high school (Alan Guttmacher Institute, 1998; SEICUS, 1999). Sexual intercourse exposes adolescents to negative consequences such as premature pregnancy and disease. With the support of parents, educators have spent a good part of this century developing programs to prevent adolescents from having premature sexual intercourse. The majority of these programs have failed and the pregnancy rate among American adolescents is one of the highest when compared to other industrialized nations (Berne & Huberman, 1999; Jones, et al. 1986). Abstinence only programs are supported by government, parents, and educators as the programs of choice for the prevention of adolescent sexual transition. The most recent trend in abstinence only programs has been the addition of public pledges of sexual abstinence. Bearman & Brückner (1999a) found evidence to support the efficacy of such programs, estimating the pledge reduced the relative risk of sexual transition by an impressive thirty-four percent.

This study attempted to identify the characteristics of adolescents for whom public pledges of sexual abstinence would be most efficacious. Operating under the supposition that pledging may be more appropriate for some but not all adolescents, it

was hypothesized that those adolescents who keep public pledges of sexual abstinence would be intrinsically different from those adolescents who break such pledges. Furthermore, it was proposed that "pledge keepers" would also have different social contexts than "pledge breakers" and these social environments would perhaps further support the adolescent's decision to maintain the pledge. Significant evidence supporting this hypothesis was found.

Intra-individual characteristics. No single factor predicts transition to sexual activity; rather, a multitude of intra-individual characteristics and social influences have been found by previous research to contribute to adolescent sexual activity. Several of these factors were incorporated in this study. Because abstinent pledge programs, such as "True Love Waits," incorporates Christian dogma (Lifeway Christian Resources, 1999), it is not surprising that religiosity was highly related to maintaining a pledge of sexual abstinence. Pledge programs have sent a clear message; premarital sex is sinful (Anderson & Park, 1995; Johnson & Shellenberger, 1994; Speck, 1989; Winkler, 1997). For religious Christian youth, this message would likely have a momentous impact and signing public pledges of sexual abstinence would perhaps give tangibility to an otherwise internal commitment. For adolescents who may already be committed to maintaining their virginity until they marry, public pledging may be self-reinforcing as they publicly announce their commitment to their peers and parents. Thornton & Camburn (1989) suggested that religious involvement influences sexual attitudes and behavior. Specifically, they demonstrated that an adolescent's non-acceptance of premarital intercourse was correlated with involvement in a mainstream religion that

discourages premarital coitus. Thus, it was not surprising that the majority of "pledge keepers" in this sample were Baptist (31.4%), Catholic (19.6%), or Disciples of Christ (10.2%). Only 4.1% of "pledge keepers" reported that they had no formal religious affiliation (see table 10). Thornton and Camburn (1989) suggested that merely belonging to a religious organization was not enough; rather measurements of attendance at religious services, frequency of prayer, and commitment to religious scriptures were more accurate markers of religiosity (see figure 2). By these criteria, "pledge keepers" were found to demonstrate higher levels of religiosity when compared to "pledge breakers." Although the level of commitment to religious scriptures was not found significant, "pledge keepers" did place more value on the importance of religion in their lives than "pledge breakers" (as illustrated in figure 3). Furthermore, "pledge keepers" reported more external expressions of religiosity (see figure 4). "Pledge keepers" reported having prayed, attended religious services, and participated in a religious youth group at least once a week, whereas "pledge breakers" reported external expressions of religiosity once a month or more, but less than weekly.

Previous research has shown that sexual values and attitudes are associated with sexual behaviors. Adolescents who have negative sexual beliefs are less likely to experience sexual intercourse (Miller, Christensen, & Olson, 1987; Wehner-Wilson, 1998). Werner-Wilson (1998) examined multiple contextual influences on adolescent sexual attitudes. He found substantial evidence that religious participation was an important predictor of sexual beliefs and attitudes (Wehner-Wilson, 1998). "Pledge keepers" in this study were found to have high levels of religiosity and highly

conservative sexual beliefs (see figure 5). "Pledge keepers" were more likely to agree: that if they had sex they would lose the respect of their partner and friends; feel guilty afterward; they believed that having sex would not make them feel less lonely, make them more attractive to others, or provide them with a great deal of physical pleasure. Therefore, the relationship of successful pledging, religiosity, and sexual beliefs is not surprising, as these adolescents are likely to receive consistent messages and the social support necessary to remain abstinent until they marry.

Several researchers have investigated the positive relationship between academic expectations and the postponement of sexual activity (Hanson, Myers, & Ginsberg, 1987; Lauristen, 1994). It has been suggested that having high academic expectations encourages adolescents to delay sexual transition for fear of the negative impact that consequences of sexual activity may have on their future aspirations (Lauristen, 1994). Consistent with prior research (Hanson, Myers, & Ginsberg, 1987; Lauristen, 1994), "pledge keepers" did report significantly higher educational expectations and aspirations for college when they were compared with "pledge breakers."

Being involved in a romantic relationship has been consistently shown to increase the likelihood of transition to intercourse (Miller, et al., 1997). There is evidence that an adolescent's first sexual experience typically occurs within the context of a romantic relationship (Grello, Dickson, Welsh, & Wintersteen, 2000). Dating offers both the opportunity and the partner. In their study of virgin adolescents, Herold & Goodwin (1981) found that many adolescents were virgins simply because they hadn't had a romantic relationship or met the "right person" yet. The investigators described these

adolescents as "potential non-virgins" and virgins who were expected to remain virgins were described as "adamant virgins." Once a "potential non-virgin found a suitable partner, the investigators suggested that the adolescent would transition to intercourse. "Pledge breakers" were found more likely to have been involved in a dating or romantic relationship during both waves of data collection, thus they had more opportunities and more partners to transition with. In this sample of adolescents who made public pledges of sexual abstinence, being involved in a romantic relationship increased the odds of transition to sexual intercourse by 2:1 in Wave I and by almost 4:1 during Wave II. In addition to having been involved in more romantic relationships, "pledge breakers" were found older. The mean age for "pledge breakers" was approximately one year older than "pledge keepers" ($\underline{M}$= 17.14, $\underline{M}$=16.16, respectively) (see figure 8). Alan Guttmacher Institute (1994) reported the average age of first intercourse for American males was 16.7 and the average age for first intercourse for girls was 17.4. Those adolescents who made pledges of sexual abstinence and transitioned to sexual intercourse fall within the national average of sexual debut. This study did not find any interaction differences with gender and pledge status.

Previous research has identified antecedent factors such as GPA (Hess, Gass, & Scher, 1999), school attachment (Blum & Rinehart, 1997), autonomy (Rogers, 1996), and daily activities (Miller, Sabo, Farrell, Barnes, & Melnick, 1998), such as the involvement of sports, exercise, and hobbies with sexual transition. There were no significant differences in daily activities, school attachment, or autonomy among "pledge keepers" and "pledge breakers" in this study.

The parent context. Miller (1998) proposed that the family is the primary source for the instillation of sexual attitudes in values. Parents in particular, influence their children in many ways. The quality of parent-child relationship has been suggested to delay sexual transition (Bearman & Brückner, 1999b; Miller et al., 1997). Children who feel close to their mothers have been shown to have sexual attitudes that are similar to their mother's (Weinstein & Thornton, 1989). Previous research has found that sexually active adolescents have reported lower levels of relationship satisfaction with their parents (Bingham & Crockett, 1996). Therefore, it was unanticipated that there would be no significant differences between those adolescents who keep their pledge and those who break their pledge on measures of the quality of the parent-child relationship or the perception of closeness.

As expected, the parents' of "pledge keepers" do monitor their children more closely than the parents of "pledge breakers" do. Previous research has found that the perception of parental monitoring increased the likelihood of sexual abstinence (Hanson, Myers, & Ginsberg, 1987). The perception of parental monitoring increases the adolescent's understanding of parental support as well as decreases the opportunity for sexual intercourse (Small & Luster, 1994). "Pledge keepers" are more likely to inform their parents about their whereabouts and they communicate what is going on in their lives. This finding may however, be related to the age difference between the two groups of adolescents as "pledge breakers" tend to be a year older and may not be willing to inform their parents of as many details of their lives as "pledge keepers" are.

Activities and general non-sexual communications with parents were not found significant in adolescents who pledge sexual abstinence. It was expected that "pledge keepers" would spend more time than "pledge breakers" talking (Holtzman & Rubinson, 1995) and doing things with their parents, thus decreasing opportunities for sexual intercourse (Small & Luster, 1994) and increasing parental monitoring and supervision (Hanson, Myers, & Ginsberg, 1987). However, this was not found, with one exception, "pledge keepers" reported going shopping with their parents more frequently than "pledge breakers."

This study examined parent perceptions of the dating and sexual experiences of their adolescent. Several authors (e.g. Fox & Inazu, 1980) have found a relationship between open sexual communications and sexual behavior. It has not been clearly established whether these communications result from the parents' perceived need for such dialogue or whether the dialogue itself promotes sexual transition. In general, parents of both "pledge keepers" and "pledge breakers" have underestimated the extent of their child's dating and sexual experiences. Only a few parents of "pledge breakers" believed their child had dated or kissed a romantic partner and only 3 parents reported that they believed their child had transitioned. (See figure 9)

Interestingly, parents of "pledge breakers" were found significantly more uncomfortable having discussions of sexual topics with their children (see figure 10). They believed that their children would get the necessary information elsewhere; furthermore, they felt such conversations were difficult and embarrassing. This finding is alarming in light of Bearman & Brückner's (1999) finding that adolescent "pledge

breakers" were significantly less likely than adolescents who do not pledge to use contraception. Miller and his colleagues (1997) examined parental comfort in discussing sexual topics and they found that abstinence was moderately correlated with the quality of these communications. Parents of "pledge keepers" do appear to be more comfortable with these conversations when they were compared with parents "pledge breakers." As with intra-individual characteristics, no significant interaction with gender and parents was identified.

The peer context. The adolescent peer group is a crucial social context. It is within the context of peers that the adolescent learns to refine his or her social skills, especially with members of the other gender (Stoufe, Cooper, & Hart, 1996). It is within the peer context that most adolescents develop their first romantic relationship (Furman & Wehner, 1994). The peer group, as determined by group selection, establishes social norms including: how the group dresses; what music is listened to; group activities; sexual behavior; and risk behaviors such as smoking cigarettes, drinking alcohol, and using marijuana (Graber, Brooks-Gunn, & Peterson, 1996). The influence of the peer group is powerful and can exert either a positive or negative effect on the individual (Bearman & Brückner, 1999b; Brown & Theobald, 1999). Research has shown that drug and alcohol use within the peer context has been associated with premature sexual activity (Dolcini & Adler, 1994; Costa and colleagues, 1995). Consistent with this research and the hypothesis, "pledge breakers" did indicate having significantly more friends who participated in risk behaviors such as smoking cigarettes, drinking alcohol, and using marijuana than "pledge keepers" (see figure 11). Conversely, involvement

with a religious peer group increased the likelihood of sexual abstinence (Studer & Thornton, 1987). Research has shown that having friends who are religious decreases risk behaviors and coitus (Wallace & Forman, 1998). Religious groups provide youth with a network of adolescents with similar values and beliefs that do not contradict their own attitudes (Studer & Thornton, 1987). Religious youth group participation may provide "pledge keepers" with a resource of peers and partners who have similar beliefs regarding the importance of sexual abstinence until marriage.

An interaction effect for time spent with female peers x pledge status was found. For this group of adolescents, male "pledge breakers" reported spending more time with female peers than male "pledge keepers" did. Female "pledge breakers" spent less time with female peers than female "pledge keepers" reported. Based on the age of the "pledge breakers" and the "pledge keepers," this finding may result from the reorganization of the peer group structure that frequently occurs during mid-adolescence (Darling, Dowdy, Van Horn & Caldell, 1999). The older male "pledge breakers" are spending increasing time with females as they have shown increased involvement in romantic relationships. Older female "pledge breakers" are spending less time with female peers and increasingly more time with males (Furman & Wehner, 1997). As the peer group reorganizes and males and females begin to spend more time in the mixed gender peer group, shifts such as those found in this group of pledging adolescents are to be expected.

The community context. As predicted, "pledge keepers" do live in neighborhoods and communities that suggest that they are middle class. "Pledge keepers" tend to live in

suburban communities in which single family homes dominate. They are less likely to live in trailer or mobile homes and apartment buildings, suggesting that they are from communities that are relatively more affluent. Figure 12 illustrates the annual household income of "pledge keepers" and "pledge breakers." "Pledge keepers" come from homes with higher family income, lending support to the hypothesis that "pledge keepers" tended to be from more middle class communities when compared to "pledge breakers." Research has shown that middle class neighborhoods have advantages for youth that desire sexual abstinence. Middle class communities offer residential stability, more supervision, and more intact families (Miller, Higginson, McCoy, & Olson, 1987; Lillard & Upchurch, 1999). Adolescents who live in middle class communities typically have access to more positive role models, opportunities, and alternative activities (Lillard & Upchurch, 1999).

Hypothesis 2. The second hypothesis examines the effectiveness of pledges of sexual abstinence by comparing "pledge keepers" with non-pledging virgins and "pledge breakers" with non-pledging non-virgins. It was predicted that "pledge keepers" and NPV would share similar intra-individual characteristics and social contexts. Conversely, it was expected that "pledge breakers" and NPNV youth would be similar in their intra-individual characteristics and social contexts. Support for this hypothesis was found.

Virgins. The most salient difference between "pledge keepers" and NPV is that "pledge keepers" were found to be significantly more religious on all three measures of religiosity and they had slightly more conservative sexual beliefs. Both virgin groups had similar GPA, expectations and aspirations for college, school attachment, autonomy,

daily activities, views of getting pregnant, and they were the same age. Perhaps part of the power of the pledge found by Bearman & Brückner (1999a) is the correlation of virginity commitment and mainstream religion as previously suggested by Thornton & Camburn (1987). The "pledge keepers" appear to value their virginity and they are highly involved in a social structure that supports this ideal. The social network of highly religious adolescents consists of peers and individuals who share similar attitudes. Past research has found that profoundly religious adolescents are more likely to abstain or postpone sexual intercourse until marriage than their non-religious counterparts (Brewster, Cooksey, Guikey, & Rindfuss, 1998; Miller & Bingham, 1989; Miller, Higginson, McCoy, & Olson, 1987, Thornton & Camburn, 1989; Wallace & Forman, 1998).

Contrary to expectations, "pledge keepers" appeared to be more involved with their parents than NPV. They reported feeling closer to their parents, spent more time with their parents, and reported having more meaningful conversations about life. Non-pledging virgins (NPV) also spent time talking to their parents but their conversations centered on personal problems. Other research has found that family cohesion increases abstinence (Miller, Sabo, Farrell, Barnes, & Melnick, 1998). Miller (1998) suggests that parental involvement positively influences sexual postponement. Research has shown that adolescents who perceive that their parents are easy to talk to in general have more meaningful discussions about sexuality with their mothers (Fox & Inazu, 1980; Pereklita & Sputa-Somers, 1999). There were no significant differences in the parents' report of comfort in discussing sexual topics with their children. However, parents of "pledge

keepers" reported having frequent discussions about the social and moral impact of adolescent sexual intercourse. These discussions may further strengthen the "pledge keeper's" commitment to virginity and the instillation of their conservative sexual beliefs. This finding further supports Fox & Inazu (1980) who found that parental discussions of sexuality tended to be moralizing rather than informative. Other researchers have found that parents actually provide very little didactic information regarding sexual behavior and contraception to their children.

The peer context revealed only one significant finding. NPV reported having more friends who smoked cigarettes, drank alcohol, and used marijuana than "pledge keepers." This difference may be attributed to the prominence of religion and the importance of religious youth group involvement. "Pledge keeper" may have a very select homogeneous group of peers that share similar values of sexuality and risk behaviors such as smoking cigarettes or using drugs and alcohol. No differences were found for the two virgin groups in peer relationships or in the context of the community, further supporting the hypothesis.

Non-Virgins. "Pledge breakers" and NPNV were found quite similar identifying no significant differences found for GPA, educational expectations and aspirations, school attachment, religiosity, or age; however, some noteworthy differences did emerge. The "pledge breakers" in this sample were found significantly more involved in extra-curricular activities such as hobbies, sports, exercise, and "hanging out" with friends. Although, the difference was statistically significant, its magnitude was relatively small,

with "pledge breakers" on average participating in one less activity per week when compared to NPNV.

Being involved in a romantic relationship in Wave I was found significant. Fifty percent of "pledge breakers" reported being involved in a romantic relationship during Wave I compared to 64% of NPNV. At Wave II 78.7% of adolescents in both groups reported being involved in a romantic relationship. It appears that "pledge breakers" transitioned relatively quickly once they became involved in a romantic relationship.

The parents of NPNV were significantly more comfortable discussing sexual topics with their children when compared to the parents of "pledge breakers." Parents of NPNV are also significantly more aware of the dating and sexual behavior of their children. Parents of NPNV may feel competent discussing sexual topics with their children as this awareness increases. Conversely, parents of "pledge breakers" may feel that such conversations are not necessary as they are aware that their child has made a public pledge of sexual abstinence until marriage and may incorrectly assume that such a pledge will protect them. Parents of "pledge breakers" are also less aware of their child's dating and sexual behaviors, therefore the necessity of such conversations is unrecognized. Bearman & Brückner (1999a) found that "pledge breakers" were significantly less likely to use contraception than NPNV. This is not surprising as abstinence education programs such as "True Love Waits" do not have provide information about contraception and their parents are uncomfortable discussing sexual topics with them. Adolescents who make pledges of sexual abstinence apparently must rely on their own resources for such information. They may be uncomfortable obtaining

information from the educators who promote abstinence or they may fear being judged by other adults. No significant differences in the peer or community contexts were revealed for adolescents who transition regardless of pledge status.

Limitations

There are several limitations to this study that must be noted. Primarily, there was indication as to when or where these adolescents made their pledges. This information may have implications as to the long-term efficacy of programs that incorporate pledges of sexual abstinence. The results in this study indicate a strong relationship with religion. One might expect that adolescents who pledge at their place of worship or at a youth group meeting may be more committed to the pledge than those who pledge as part of a school-wide program.

Furthermore, there are limitations when using survey data (Lauritsen & Swicegood, 1997). However, Add Health is longitudinal therefore, retrospective recall errors should be minimized. When investigating sensitive topics caution must be exercised as over and underreporting is expected. Consideration must be given to this notion as adolescents who make pledges of sexual abstinence may be less willing to reveal having broken the pledge as it does violate their moral and religious beliefs.

As with most research, sexual transition in this study was defined as sexual intercourse. Frequency of sexual intercourse has been suggested as a better and more accurate measure of sexual activity (Olsen, Jenson, & Greaves, 1991). Furthermore, adolescents have been found to participate in sexual activities that do not include penetration. These adolescents consider themselves to be virgins although they are

sexually active (Feldman, et al., 1997). Future research on adolescents who pledge sexual abstinence should evaluate other sexual behaviors including oral sex and mutual masturbation.

Recommendations for future research

Previous research has shown that there is a direct relationship between age and sexual debut (e.g. Brewster, 1994; Feldman, et al. 1997). Because "pledge keepers" were considerably younger than the average age for sexual transition, longer longitudinal studies are necessary to assess the efficacy of pledging overtime. It would also be interesting to evaluate the dating patterns of "pledge keepers." In this study the majority of "pledge keepers" had not dated, thus the opportunity and pressure to transition had not occurred. As in Harold & Goodwin's study (1981) some of these adolescents may have been potential non-virgins who had not yet found the right person while others were likely adamant virgins and would have remained abstinent regardless. Perhaps, a pledge of sexual abstinence would be most effective if both partners were committed to the pledge. Would it be less tenable if one partner is committed to virginity and the other is not? If so, would there be gender differences? For example, Zimmerman et al. (1995) found that males had a more difficult time refusing sexual intercourse than females.

Recommendations for parents

Signing a pledge of sexual abstinence may provide parents with a false sense of security regarding their adolescent's sexual behavior; parents need to be aware that a pledge of abstinence does not absolve them of their responsibility to provide accurate information to their children. Parents are very influential in the instillation of values and

beliefs (Miller, 1998). The parents of "pledge breakers" were uncomfortable discussing sexual topics and they were also unaware that their children need such conversations, this finding should be explored further, as these adolescents were far less likely to use contraception than non-pledging non-virgins.

Recommendations for the community

Although there is some evidence for the efficacy of pledges of sexual abstinence (Bearman & Brückner, 1999a), they are not suited for all adolescents and therefore should not be solely relied upon to prevent adolescent sexual activity. Comprehensive programs that promote abstinence as a choice and provide information on contraception, negotiation and refusal skills have been found to have lasting positive effects in the delay of sexual debut and increasing the use of condoms and contraception as barriers to pregnancy and disease (Jemmott, Jemmott, & Fong, 1998).

Conclusions

Abstinence until marriage programs view avoidance of sexual intercourse as a fundamental matter of self-control. Abstinence programs and programs that incorporate pledges of sexual abstinence have been enthusiastically supported and funded by state, local, and federal governments (Haignere, Gold, & McDaniel, 1999). Despite federal funding and support for pledge programs, to date no empirical evaluations have been completed.

Herold & Goodwin (1981) compared adamant virgins and potential non-virgins on individual characteristics. They found that adamant virgins were virgins who were highly religious and less accepting of premarital sex. An adamant virgin typically had

parents who were conservative. Dating and age were found to be crucial determinates between potential non-virgins and adamant virgins, with potential non-virgins dating more frequently than adamant virgins. "Pledge keepers" were found to be highly religious and less accepting of premarital sex when they were compared to "pledge breakers" and NPV. One might argue that it is religiosity that lends power to the pledge rather than the pledge influencing commitment to virginity. Perhaps the pledge works for some because it makes this internal commitment tangible, therefore possibly further strengthening the commitment to sexual abstinence. In conclusion, while "pledge keepers" and "pledge breakers" differed on several intra-individual characteristics and with their social contexts, when virgins were compared to virgins and non-virgins with non-virgins very few intra-individual differences emerged. With the exception of religiosity, "pledge keepers" and NPV were almost identical on their measures. In light of these findings it appears that programs that incorporate public pledges of sexual abstinence may be most effective when directed towards adolescents in religious youth groups, rather than being employed for wide-spread or public school applications.

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Appendices

Appendix A
VARIABLES

Description	Wave I Variable	Wave II Variable
Fixed Factors		
Race	H1GI6A, H1GI6B, H1GI6C, H1G16D, H1G16E	
Total family income before taxes	PA55	
Gender	BIO_SEX	
Have you taken a public or written pledge to remain a virgin until marriage?	H1ID5	H2MO16
Have you ever had sexual intercourse?	H1CO1	H2CO2
Community		
Kind of building respondent lives in?		H2IR11
Description of immediate area?		H2IR12
Description of other buildings on street		H2IR13
Street upkeep?		H2IR14
Peers		
Go to a male peer's home*		
Did you go to (male peer 1) house in the last 7 days?		H2MF11A
Did you go to (male peer 2) house in the last 7 days?		H2MF11B
Did you go to (male peer 3) house in the last 7 days?		H2MF11C
Meet/hang out with male peers after school*		
Did you meet (1) or hang out in the past 7 days?		H2MF12A
Did you meet (2) or hang out in the past 7 days?		H2MF12B
Did you meet (3) or hang out in the past 7 days?		H2MF12C
Spend time with male peers during weekend*		
Did you spend time with (1) during the past weekend?		H2MF13A
Did you spend time with (2) during the past weekend?		H2MF13B
Did you spend time with (3) during the past weekend?		H2MF13C
Talk about a problem with a male peer*		
Did you talk to (1) about a problem during past 7 days?		H2MF14A
Did you talk to (2) about a problem during past 7 days?		H2MF14B
Did you talk to (3) about a problem during the past 7 days?		H2MF14C
Talk on the telephone with a male peer*		
Did you talk to (1) on the telephone during the past 7 days?		H2MF15A
Did you talk to (2) on the telephone during the past 7 days?		H2MF15B
Did you talk to (3) on the telephone during the past 7 days?		H2MF15C
Go to a female peer's home**		
Did you go to (female peer 1) house in the last 7 days?		H2FF11A
Did you go to (female peer 2) house in the last 7 days?		H2FF11B
Did you go to (female peer 2) house in the last 7 days?		H2FF11C
Meet/hang out with female peers after school**		

Did you meet (1) or hang out in the past 7 days?		H2FF12A
Did you meet (2) or hang out in the past 7 days?		H2FF12B
Did you meet (3) or hang out in the past 7 days?		H2FF12C
Spend time with female peers during weekend**		
Did you spend time with (1) during the past weekend?		H2FF13A
Did you spend time with (2) during the past weekend?		H2FF13B
Did you spend time with (3) during the past weekend?		H2FF13C
Talk about a problem with a female peer**		
Did you talk to (1) about a problem during the past 7 days?		H2FF14A
Did you talk to (2) about a problem during the past 7 days?		H2FF14B
Did you talk to (3) about a problem during the past 7 days?		H2FF14C
Talk on the telephone with a male peer**		
Did you talk to (1) on the telephone during the past 7 days?		H2FF15A
Did you talk to (2) on the telephone during the past 7 days?		H2FF15B
Did you talk to (3) on the telephone during the past 7 days?		H2FF15C
Peer risk behavior†		
Of your 3 best friends, how many smoke?		H2TO10
Of your 3 best friends, how many drink alcohol?		H2TO41
Of your 3 best friends, how many smoke marijuana?		H2TO48
Parents		
Parental marital status	PA10	
Activities with parents††		
In past 4 weeks have you and mother....		
Gone Shopping		H2WP17A
Attend religious service		H2WP17C
Gone to a movie, etc		H2WP17E
In the past 4 weeks have you and father...		
Gone Shopping		H2WP18A
Attend religious service		H2WP18B
Gone to a movie etc		H2WP18E
General communication with parents††		
Talked about a personal problem you're having (mother)		H2WP17F
Talked about a personal problem you're having (father)		H2WP18F
Quality of relationship with parents††		
Good relationship with mom		H2PF5
Good relationship with dad		H2PF10
Parental Closeness††		
How close do you feel to your mother		H2WP9
How close do you feel to your father		H2WP13
Parental monitoring and supervision††		
You tell mother where you are after school		H2PF6
Mother know what's going on in your life		H2PF7
You tell your parents where you are on the weekend		H2PF11

Parental Education Expectations††		
How disappointed would mom be if you did not go to college		H2WP11
How disappointed would mom be if you did not grad HS		H2WP12
How disappointed would dad be if you did not go to college		H2WP15
How disappointed would dad be if you did not grad HS		H2WP16
Parental Sexual Beliefs††		
You don't know enough about sex and birth control to talk ..	PC42A	
It would embarrass you to talk about sex with ?	PC42B	
It would be difficult for you to explain things to?	PC42C	
? will get information somewhere else	PC42D	
Talking about birth control will encourage sex	PC42E	
Amt of talk about intercourse....		
Neg/bad things if pregnant	PC43AA	
Dangers of STDs	PC43AB	
Neg/bad impact/ loss of respect of others	PC43AC	
Moral issues about not having intercourse	PC43AD	
Parent beliefs about adolescent's behavior†		
Do you think that he/she has ever gone on a date?	PC45	
Kissed or necked	PC46	
Had sex intercourse	PC47	
Intra-Individual		
Daily Activities†		
During the past week, how many times did you		
Hobbies		H2DA2
Active sport		H2DA5
Exercise		H2DA6
Hangout with friends		H2DA7
Individual Sexual Beliefs††		
If you had sexual intercourse...		
Your friends would respect you more (reverse code)		H2MO1
It would give you a great deal of pleasure (reverse code)		H2MO5
It would make you more attractive to women/men (reverse code)		H2MO6
It would make you less lonely (reverse code)		H2MO7
Your partner would lose respect for you		H2MO2
Afterward you would feel guilty		H2MO3
View of pregnancy††		
If you got / got someone pregnant it would be embarrassing for your family		H2MO8
If you got / got someone pregnant, it would be embarrassing for you		H2MO9
if you got / got someone pregnant, you would have to quit school		H2MO10
Individual's Religion††		
Do you agree the scriptures of your religion are sacred		H2RE2
In past 12 mos., how often did you attend religious service		H2RE3
How important is religion to you		H2RE4

How often do you pray	H2RE6
Religious activity participation	H2RE7
Autonomy†	
Do your parents let you make your own decisions about...	
Time you must be home on weekend nights	H2WP1
The people you hang out with	H2WP2
What you wear	H2WP3
How much TV	H2WP4
Which TV programs	H2WP5
Bedtime on week nights	H2WP6
Make your own decisions about diet	H2WP7
School closeness††	
Feel close to the people at school	H2ED15
Feel part of your school	H2ED16
Grade point average†	
English grade	H2ED7
Math grade	H2ED8
History/Social Studies grade	H2ED9
Science grade	H2ED10
Educational expectations††	
How much do you want to go to college?	H2EE1
How likely is it that you will attend college?	H2EE2

* Because of a large number of missing values in the Add Health data, the scores for the 3 male peers have been collapsed.
** Because of a large number of missing values, the scores for the 3 female peers have been collapsed
† A single variable was created by summing scores.
†† A single variable was created by averaging the mean scores.
†††Because of a large number of missing values, the scores for mother and father have been collapsed.

Appendix B

Definition of "Abstinence Education" from the Personal Responsibility and Work Opportunity Act of 1996, P.L 104-193, Title IX, Sec. 912

"Abstinence education" refers to an educational or motivational program which:

A) has as it's exclusive purpose, teaching the social, psychological, and health gains to be realized by abstaining from sexual activity;

B) teaches abstinence from sexual activity outside marriage is the expected standard for all school age children;

C) teaches that abstinence from sexual activity is the only certain way to avoid out-of-wedlock pregnancy, sexually transmitted diseases, and other associated health problems;

D) teaches that a mutually faithful monogamous relationship in the context of marriage is the expected standard of human sexual activity;

E) teaches that sexual activity outside of the context of marriage is likely to have harmful psychological and physical effects;

F) teaches that bearing children out-of-wedlock is likely to have harmful consequences for the child, the child's parents, and society,

G) teaches young people how to reject sexual advances and how alcohol and drug use increases vulnerability to sexual advances; and

H) teaches the importance of attaining self-sufficiency before engaging in sexual activity.

Appendix C
Add Health use agreement

AddHealth Release 2, containing Waves 1 and 2 (merged), and network data is now being distributed . Contextual data will be included, but only as a separate raw data file that users can merge with their main file, if desired.

The basic price structure for these data sets is as follows:

Release 2 (containing both waves) for those who did not purchase Release 1	$225
Release 2 upgrade (containing both waves) for those who already purchased Release 1	$115

The data set, distributed on CD-ROM, will contain the raw data file, an SPSS program set-up file, a SAS program setup file, a frequencies file (SPSS), a dictionary file (SPSS), and search and retrieval and data extract software program files. Printed material will include a user's guide and a CD-ROM manual describing the use of the software.

As a requirement of the Carolina Population Center, all users must sign a "Data Purchase and Use Agreement" before we can ship the data set. This agreement, and an order form are attached as text in line to this message. Please print a copy of the agreement, fill it out, and mail or fax it back to us. We will forward a copy to the Carolina Population Center. If you have already signed and sent in this form as a Wave I purchaser, you do not need to do so again.

CAROLINA POPULATION CENTER
DATA PURCHASE AND USE AGREEMENT FOR
THE NATIONAL LONGITUDINAL SURVEY OF ADOLESCENT HEALTH

Proposed Use of Add Health Data:

1) To conduct analyses examining the contexts associated with adolescents sexual behaviors and risky behaviors

2) To contrast with data collected locally to contrast our local samples with nationally representative sample of adolescents

The National Longitudinal Survey of Adolescent Health (Add Health) collected data for the purpose of providing information on the general health and well-being of adolescents in the United States, including, with respect to such adolescents, information on. (1) the behaviors that promote health and the behaviors that are detrimental to health; and (2) the influence on health of factors particular to the communities in which adolescents reside By entering into this agreement, the undersigned agrees to use these data only for the purpose for which they were obtained, any effort to determine the identity of any reported case, or to use the information for any purpose other than for statistical reporting and analysis, would be in violation of this agreement. Although the Carolina Population Center does all it can to assure the identities of individuals, households, schools, and communities cannot be ascertained, it may be possible to determine from data set the identity of particular individuals, households,

schools, and communities Considerable harm could ensue if this were done.

Therefore, the undersigned gives the following assurances with respect to the Add Health data sets.

> You will not use nor permit others to use the data in the Add Health data sets in any way except for research and aggregate statistical reporting;
> You will require others who are part of your research team who use the data to sign this agreement and will keep those signed agreements and make them available to the Carolina Population Center upon request;
You will not release nor permit others to release any information that identifies individuals, households, schools, and communities, directly or indirectly;
> You will not release nor permit others to release the data sets or any part of them to any person who is not a member of your research team, except with the approval of the Carolina Population Center;
You will not attempt to link nor permit others to attempt to link the Add Health data set with individually identifiable records from any other source:
> You will not attempt to use nor permit others to use the data sets to learn the identity of any individual, household, school or community included in any Add Health data set;
You will not use nor permit others to use the data concerning individual schools or communities (1) for commercial or competitive purposes involving those individual schools or communities or (2) to report data that could identify, directly or by inference, individual schools or communities.
> If the identity of any individual, household, school or community be discovered inadvertently by you or by a member of your research team, then (1) no use will be made of this knowledge, (2) the Carolina Population Center will be advised of the incident, (3) the information that would identify an individual will be safe-guarded or destroyed as requested by the Carolina Population Center, and (4) no one else will be informed of the discovered identity; and,
> You will acknowledge in all reports based on these data. Suggested acknowledgment:

"This research is based on data from the Add Health project, a program project designed by J. Richard Udry (PI) and Peter Bearman, and funded by grant P01-HD31921 from the National Institute of Child Health and Human Development to the Carolina Population Center, University of North Carolina at Chapel Hill, with cooperative funding participation by the National Cancer Institute; the National Institute of Alcohol Abuse and Alcoholism; the National Institute on Deafness and Other Communication Disorders; the National Institute of Drug Abuse; the National Institute of General Medical Sciences; the National Institute of Mental Health, the National Institute of Nursing Research; the Office of AIDS Research, NIH; the Office of Behavior and Social Science Research, NIH; the Office of the Director, NIH; the Office of Research on Women's Health, NIH; the Office of Population Affairs, HHS, the National Center for Health Statistics, Centers for Disease Control and Prevention, HHS, the Office of Minority Health, Centers for Disease Control and Prevention, HHS, the Office of Minority Health, Office of the Assistant Secretary for Health, HHS, the Office of the Assistant Secretary for Planning and Evaluation, HHS; and the National Science Foundation. Personal interested in obtaining data files from The National Longitudinal Study of Adolescent Health should contact Jo Jones, Carolina Population Center, 123 West Franklin Street, Chapel Hill, NC 27516-3997 (email: jo_jones@unc.edu)."

In order to avoid inadvertent disclosure, the undersigned also agrees to abide by the following guidelines in the release of statistics derived from the data set.

A. In no table should all cases in any row or column be found in a single cell;
B. In no case should the total figure of a row or column of a cross-tabulation be less than 50;
C. In no case should a quantity figure based on a count of 10 or less be presented for an age-sex category for a community with a total population of 200 or less;
D. In n case should an age-sex quantity figure be based upon fewer than 10 cases;
E. In no case should a quantity figure be published if one case contributes more than 60 percent of the amount;
F. In no cases should data on an identifiable case, nor any of the kinds of data listed in preceding items A-D be derivable through subtraction or other calculation from the combination of tables released on a given study; and,
G. Data released should never permit disclosure when used in combination with other known data.

Your signature indicates your agreement to comply with the above-stated requirements with the knowledge that deliberately making a false statement in any matter may be punishable under the law.

Name of person entering agreement:
Deborah P Welsh

Title:
Asst Prof.

Organization:
University of Tennessee

Signature.
Deborah P Welsh

Date:
5-6-99

Research Staff:

Name Signature	Date
Nikki Gusberg	5/6/99
Leslie Nicholson	5/6/99
[illegible]	9/17/99
Melinda Stamper	9/17/99
Jarad Hammer	9/17/99
Catherine M Krell	9/17/99
Craig W Dickson	9/17/99
[illegible]	9/17/99

Appendix D
Human subjects forms

COPY

FORM A

IRB #_____

Certification for Exemption from IRB Review for Research Involving Human Subjects

---

A. PRINCIPAL INVESTIGATOR(s) and/or CO-PI(s): (For student projects, list both the student and the advisor)

Principal Investigator Deborah P. Welsh, Ph D

CO-PI(s) Catherine M. Grello, Joseph W Dickson, Melinda S Harper, Farrah M. Hughes, Matthew B Wintersteen, Leslie M. Nicholson, Nichole A. Jurbergs, Daniel M Niederjohn, Sarah Hammer, Kristina Coop Gordon, Ph D.

B. DEPARTMENT/UNIT.
Psychology

C. COMPLETE MAILING ADDRESS AND PHONE NUMBER OF PI(s) and CO-PI(s):
Department of Psychology

University of Tennessee, Knoxville

Knoxville, TN 37996-0900

Phone (423) 974-8540

D. TITLE OF PROJECT:
Adolescent Health & Relationships Project

E. EXTERNAL FUNDING AGENCY AND ID NUMBER (if applicable).
N/A

F GRANT SUBMISSION DEADLINE (if applicable)
N/A

G. STARTING DATE: (NO RESEARCH MAY BE INITIATED UNTIL CERTIFICATION IS GRANTED.)
Immediately

H ESTIMATED COMPLETION DATE (Include all aspects of research and final write-up)
5/2001

I. RESEARCH PROJECT.

1 Objective(s) of Project (Use additional page, if needed)
The global goal is to understand adolescents' health and relationships The following 5 specific questions will be addressed· (1) What is the relationship between parenting behaviors and adolescent risk-taking behavior? (2) When does the transition to sexual intercourse occur within adolescents' romantic relationships and what factors are associated with this transition? (4) What is the association parental mantal relationships and adolescent-parent relationships and the development of adolescent romantic relationships, and, (5) what individual characteristics or contextual variables distinguish between adolescents who sign pledges of abstinence and keep their pledges from adolescents who sign pledges and break them?

2 Subjects (Use additional page, if needed)
Subjects will be taken from archival data from the National Longitudinal Study of Adolescent Health (ADD Health), a nationally representative study of American adolescents in grade 7-12 ADD Health provides data from three waves of data collection It is a school based study Data was also collected from parents and teachers The anonymous dataset was made available to researchers The dataset used

for this project is a random sub-sample of half of the larger dataset (approximately 6,500 adolescents in the public use sub-set of the data) to further ensure that no participant might be identified from data reductions

3 **Methods or Procedures** (Use additional page, if needed.):
We will use archival data from the ADD Health Dataset purchased from the Carolina Populations Center, University of North Carolina at Chapel Hill. Reserachers there collected the data with full IRB approval from UNC-CH and NIMH and funding was provided by Grant HD31921 from NICHD as well as numerous cooperative funding agencies including the National Cancer Institute, the National Institute of Alcohol Abuse and Alcoholism, the National Institute on Deafness and Other Communication Disorders, the National Institue of Drug Abuse, the National Institute of General Medical Science, the National Institute of Mental Health, the National Institute of Nursing Research, the Office of AIDS Research, the Office of Behavior and Social Science Research, the Office of Research on Women's Health, the Office of Population Affiars, National Center for Health Statistics, Centers for Disearse Control and Prevention, the Office of Minority Health, the Office of the Assistant Secretary for Health, and the National Science Foundation. All data is recorded by ID only All research staff (P.I. and Co-PI's) have signed a document assuring that a number of steps will be taken to further ensure that participants' anonymity will not be inadvertently disclosed (e g., no table will be presented or published in which all cases in any row or column will be in a single cell, figures in rows or columns will never cross-tabulate to less than 50)

4 **CATEGORY(s) FOR EXEMPT RESEARCH PER 45 CFR 46** (see reverse side for categories)
(4) "Research involving the collection or study of existing data, documents, records, pathological specimens or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects "

J **CERTIFICATION** The research described herein is in compliance with 45 CFR 46 101(b) and presents subjects with no more than minimal risk as defined by applicable regulations

Principal Investigator	Deborah P Welsh		11/05/99
	Name	Signature	Date
Student Advisor	-----		11/05/99
	Name	Signature	Date

Department Review

Committee Chair	~~Richard A Ssudargas~~ Michael G. Johnson		11/5/99
	Name	Signature	Date

APPROVED

Department Head	James Lawler		11/5/99

FORM D
Status for Changes and/or Project Termination
Form B Approved Research Involving Human Subjects
(Instructions on Reverse)

Date received in ORA
12/7/99

Compliances Section
Office of Research Administration
The University of Tennessee
404 Andy Holt Tower
Knoxville, TN 37996-0140

1. IRB No. 0239-A
2. Principal Investigator Deborah L. Welsh Department Psychology
3. Mailing Address: Department of Psychology
4. Project Title: Adolescent Health & Relationships Project

PLEASE CHECK THE APPROPRIATE BOX(ES) BELOW (see instructions on reverse):

5. ☐ Change of Project Title
6. ☒ Change of Principal or Co-Principal Investigator(s) or Other Collaborators
   A subset of this project has been approved as a thesis project for Catherine Giello
7. ☐ Change(s) to Project Which Affect Participation of Human Subjects
8. ☐ Change(s) to Informed Consent Forms and/or Assent Form(s) "Pledges of Abstinence: An analysis of Pledge Keepers + Pledge Breakers"
9. ☐ Additional Locations for Conducting Project
10. ☐ Unexpected Risks to Subjects:
11. ☐ Project Completed - Please Close the IRB Files.

12. Signatures:

Principal Investigator Deborah L. Welsh Date 12/2/99

Student Advisor [signature] Date 12/2/99

Departmental Review (if required) Date

REPLACES ALL FORM D's DATED PRIOR TO JANUARY 30, 1995

Rev. 9-01-95

Table 1

Sample Characteristics

	Pledge Keepers	Pledge Breakers	Non-Pledging Virgin	Non-Pledging Non-Virgins	Total
Gender					
Male	158	25	1116	992	2291
Females	337	69	1109	984	2499
Race/Ethnicity*					
Caucasian	348	57	1594	1238	3237
African American	108	28	407	592	1135
American Indian	16	1	86	80	183
Other	55	13	246	180	494
Age					
13	3		5		8
14	74	8	356	62	500
15	109	17	520	150	796
16	111	20	504	316	951
17	101	17	381	477	976
18	64	14	309	571	958
19	26	16	123	298	463
20	7	1	22	73	103
21		1	1	10	12
22			1	2	3
Parental Marital Status					
Single	18	12	98	143	271
Married	343	46	1548	1041	2989
Widowed	13	4	40	82	139
Divorced	51	12	243	324	630
Separated	17	10	72	125	224

** Respondents could check one or more ethnic/race group*

Table 2

Multivariate Tests

Group/Context	F	df	Sig.
All Groups			
Individual Characteristics	27.485	(30, 5812.367)	<.001
Parents	37.466	(24, 6685.802)	<.001
Peers	71.152	(9, 10066.088)	<.001
Community	23.663	(3, 4253)	<.001
Pledge Keepers & Breakers			
Individual Characteristics	2.873	(9, 281)	.003
Parents	4 279	(9, 289)	<.001
Peers	10.028	(3, 511)	< 001
Peer X Gender	4 644	(3, 511)	.003
Community	4.499	(1, 493)	034
Pledge Keepers & NPV			
Individual Characteristics	11.694	(10, 1205)	<.001
Parents	3.080	(9, 1328)	001
Peers	7.265	(3, 2303)	<.001
Community	.259	(1, 2316)	.611(NS)
Pledge Breakers & NPNV			
Individual Characteristics	3.783	(10, 766)	<.001
Parents	3.525	(9, 968)	<.001
Peers	1 919	(3, 1831)	.124 (NS)
Community	.004	(1, 1937)	947 (NS)

Table 3

Mean scores, Standard Errors, and Confidence Intervals for "Pledge Keepers" and "Pledge Breakers"

	Pledge Keeper			Pledge Breaker		
Context Variable	M	SE	CI	M	SE	CI
Intra-Individual						
Importance of religion	1.31**	037	1 24,1 39	1.64**	.092	1.46,1 82
Ext. religious expression	1.68***	.054	1.57,1.78	2.11***	.131	1.85,2.37
Sexual beliefs	2.19***	.04	2.11,2.27	2 54***	.098	2.34.2.73
Education expectations	4.60*	.06	4.52,4.76	3.96*	.148	3.67,4.25
Age	16.16**	.1	15.96,16.36	17.15**	245	16.66,17.63
Parents						
Monitoring	4.47*	.05	4.34,4.57	4.26*	.128	4.01,4.51
Perception of behavior	.77***	.06	0.65,0 88	1.33***	.15	1.04,1.62
Discomfort w/sex discussion	4.25*	.05	4.16,4 34	3.87*	.124	3.63,4.12
Peers						
Peer risk behavior	1.59***	.112	1.37,1.81	3.01***	.263	2.56,3.61
Interaction Peers x Gender						
Time with female peers						
Males	2.47**	.181	2.12,2.82	3 44**	444	2.56,4.31
Females	3.99**	.125	3.75,4.24	3.72**	264	3 20,4.24
Community						
Home/neighborhood condition	1.53*	.04	1.45,1.61	1 75*	.095	1.5,1.93

* p<.05. **p<.01 ***p<.001

Table 4

Prevalence of dating among "pledge keepers" & "pledge breakers"

	Pledge Keeper (n=495)	Pledge Breakers (n=94)	$\chi^2(1)$	p
Dating at Wave I	33%	50%	10 56	< 001
Dating at Wave II	49%	79%	28 648	< 001

Prevalence of activities/general communications with parents among "pledge keepers" & "pledge breakers"

	Pledge Keepers (n=489)	Pledge Breakers (n=91)	$\chi^2(1)$	p
Attending religious services	62%	40%	16 479	< 001
Talk about life	62%	40%	16 478	< 001
Go to the movies	38%	22%	8 439	004

Dominant community type of "pledge keepers" & "pledge breakers"

	Pledge Keepers (n=489)	Pledge Breakers (n=91)	$\chi^2(4)$	p
Rural	26%	33%		
Suburban	42%	24%	11 540	021
Urban, Residential	29%	40%	11 540	021
Most retail/Commercial	2%	2%		
Don't know	1%	1%		

Dominant residential type of neighborhood among "pledge keepers" & "pledge breakers"

	Pledge Keepers (n=469)	Pledge Breakers (n=85)	$\chi^2(6)$	p
Single family home	64%	50%	14.209	027
Mobile home/trailer	<1%	4%	14.209	027
Row/town house	5%	2%		
Divided house	<1%	0		
Small apartment	2%	6%	14 209	027
Skip/don't know	28%	38%		

Table 5

Mean scores, Standard Errors, and Confidence Intervals for "Pledge Keepers" and Non-Pledging Virgins

	Pledge Keeper			NPV		
Context						
Variable	M	SE	CI	M	SE	CI
Intra-Individual						
Scriptures are the word of God	1.11***	.032	1 06,1.18	1 27***	.015	1.24,1.30
Importance of religion	1.31***	051	1.12,1.41	1 69***	.024	1.64,1.74
Ext. expression of religiosity	1.68***	064	1.55,1.80	2.26***	.03	2.20.2.32
Sexual beliefs	2.5***	.018	2.46,2.53	2.19***	.039	2.11,2.64
Parents						
Closeness	4.42**	.048	4 38,4.57	4.33**	.021	4.29,4.38
Talk social impact/moral issues	2.93**	.063	2 80,3.05	2.71**	029	2.66,2.77
Peers						
Peer risk behavior	1.60***	.118	1.36,1.82	2 08***	.053	1.98,2.18

* p<.05. **p<.01. ***p< 001.

Table 6

Prevalence of dating among "pledge keepers" & NPV

	Pledge Keeper (n=495)	NPV (n=94)	$\chi^2(1)$	p
Dating at Wave II	49%	43%	5 208	022

Prevalence of activities/general communications with parents among "pledge keepers" & "NPV"

	Pledge Keepers (n=489)	NPV (n=2205)	$\chi^2(1)$	p
Shopping	71%	78%	9 129	003
Religious services	62%	44%	56 726	< 000
Talk about life	63%	44%	56 726	< 000
Talk about personal problem	48%	40%	9 979	002

Table 7

Mean scores, Standard Errors, and Confidence Intervals for "Pledge Breakers" and Non-Pledging Non-Virgins

	Pledge Breaker			NPNV		
Context Variable	M	SE	CI	M	SE	CI
Intra-Individual						
Daily activities	7 45*	406	6.66,8.25	6 48*	.087	6.31,6.65
Autonomy	5.09*	.237	4.63,5.56	5.68*	.052	5.58,5.78
Sexual beliefs	2.54***	.080	12.28,2.69	2.93***	.017	2.89.2.96
Views of pregnancy	2 18*	.211	1.77,2.59	2.65*	.046	2.56,2.74
Parents						
Comfort discussing sex topics	3.87*	.124	3.63,4.12	4.21*	.023	4.17,4.26
Perception of child's experience	1.33 **	172	99,1.67	1.94***	.032	1.88,2.00

* p<.05. **p<.01. ***p<.001.

Table 8

Prevalence of dating among "pledge breakers" & NPNV

	Pledge Keeper (n=94)	NPV (n=1976)	$\chi^2(1)$	p
Dating at Wave I	50%	64%	5 208	005

Prevalence of activities/general communications with parents among "pledge keepers" & "pledge breakers"

	Pledge Breakers (n=91)	NPNV (n=1874)	$\chi^2(1)$	p
Shopping	73%	62%	4 501	034

Table 9

Religious Affiliation (%) by group

	Pledge Keepers	Pledge Breaker	NPV	NPNV
Baptist	31 4%	33.3%	17.9%	27.8%
Disciples of Christ	10.2%	11.8%	11.6%	10 3%
Episcopal	1.0%	3.2%	2 1%	1.1%
Lutheran	2.2%	-	4.8%	2.8%
Methodist	5 3%	6 5%	5 5%	4 8%
Pentecostal	4 1%	3 2%	2 3%	2 4%
Presbyterian	2 0%	2 2%	2 5%	1 4%
Catholic	19 6%	17 2%	25 7%	19 8%
Jewish	-	-	1 6%	5%
Other	20 1%	14 0%	14 7%	11 8%
None	4 1%	8 6%	11 3%	17 3%

Figure 1. Interaction of intra-individual characteristics and social contexts on an adolescents decision to abstain or transition to sexual intercourse.

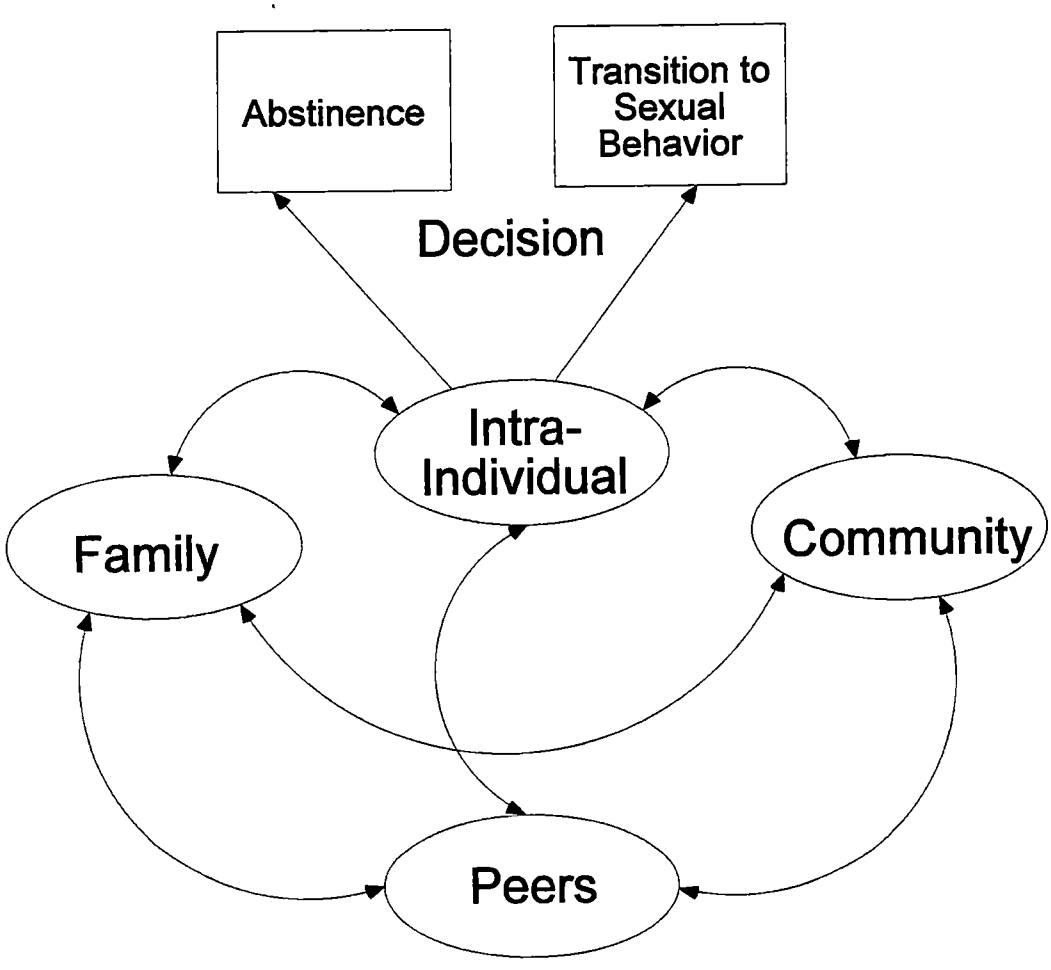


Figure 2. Belief that the scriptures are the word of God." Adolescent who made public pledges of sexual abstinence had the strongest beliefs in scriptures.

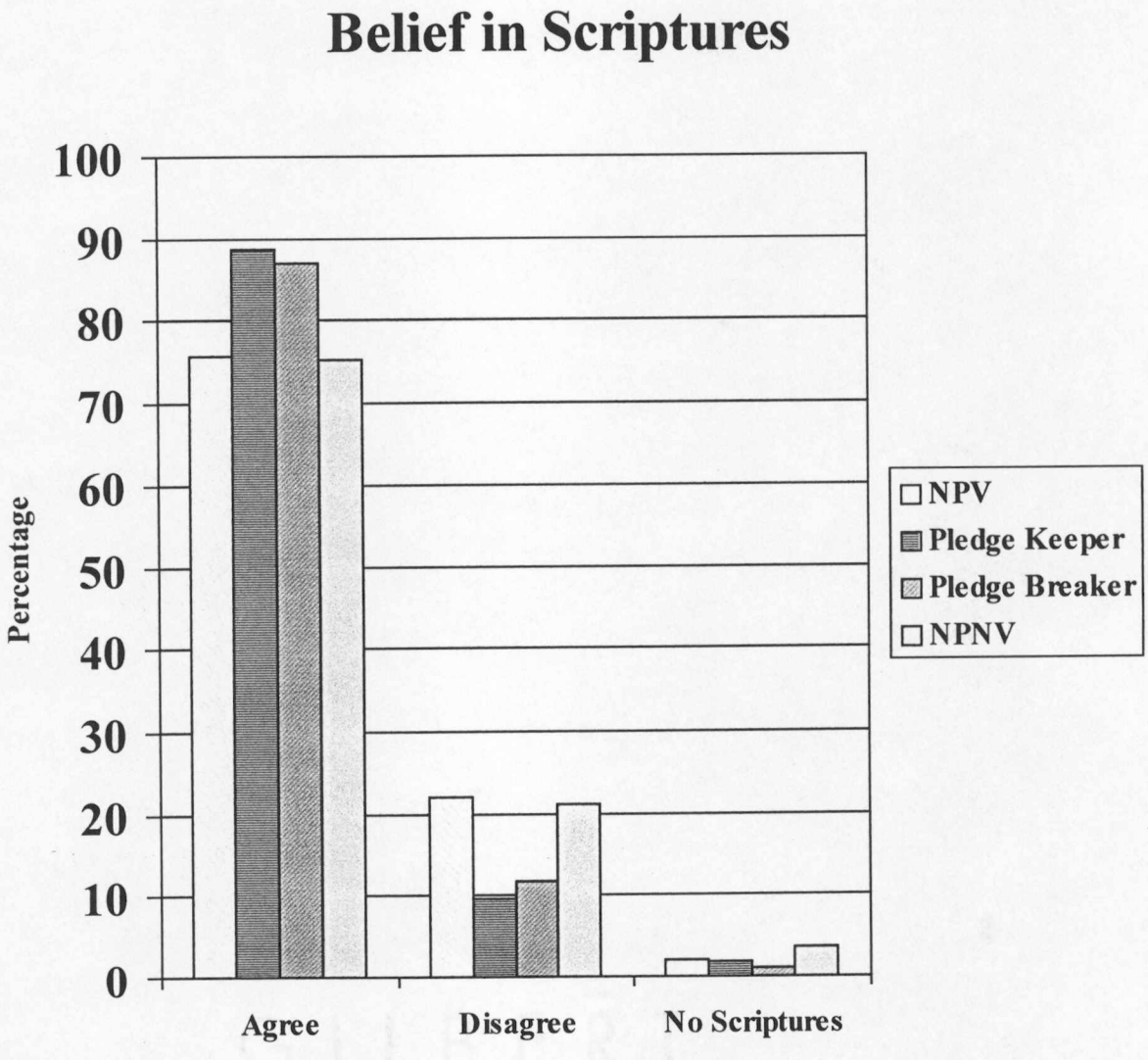


Figure 3. Importance of religion. Religion was found most important to "pledge keepers."

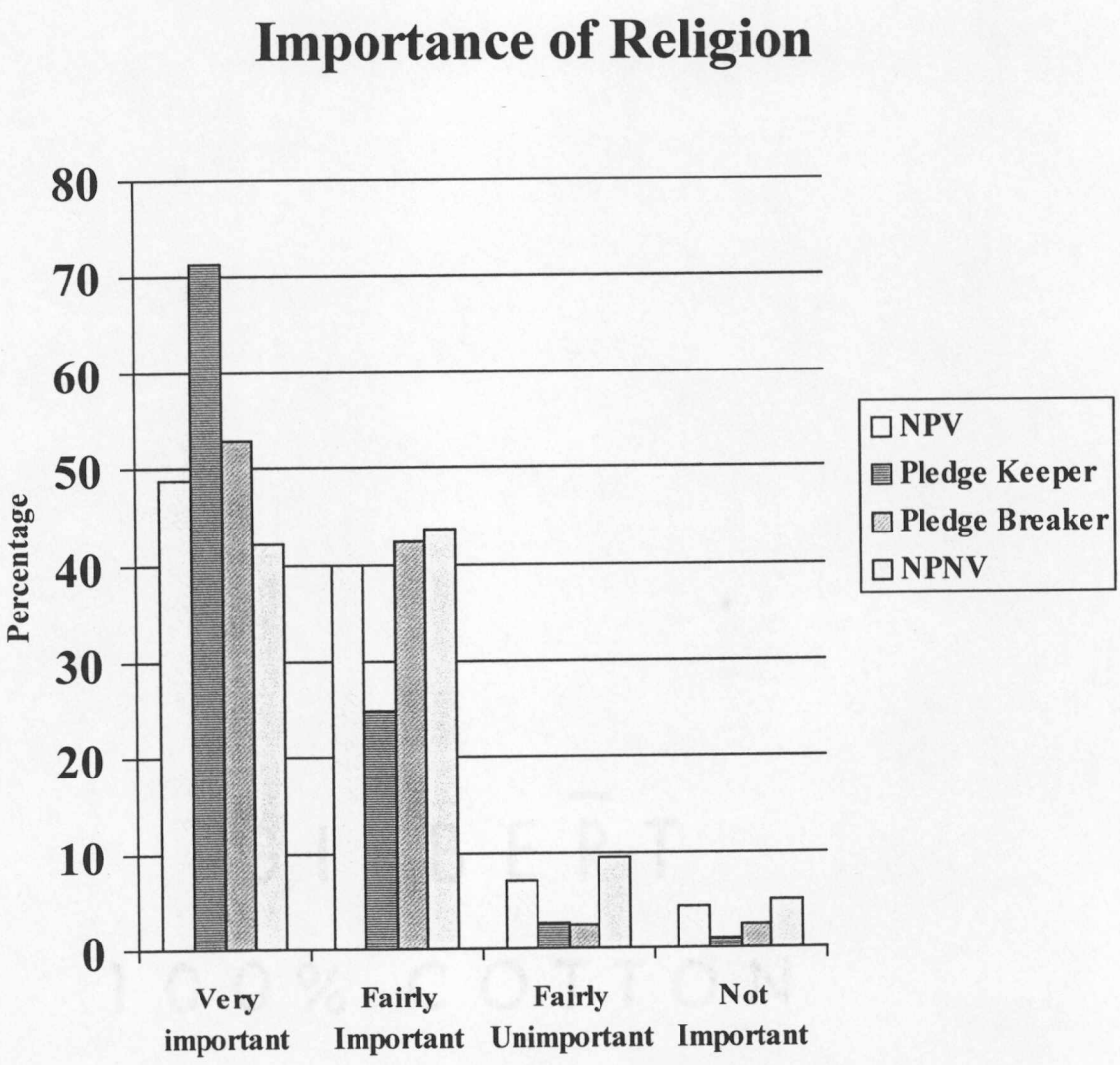


Figure 4. External expressions of religion. "Pledge keepers" pray, attend religious services and participate in religious youth groups more frequently than other adolescents. (1=1 or more times per week, 2=less than 1 time per week, but more than 1 time per month, 3=less than 1 time per month, 4=never).

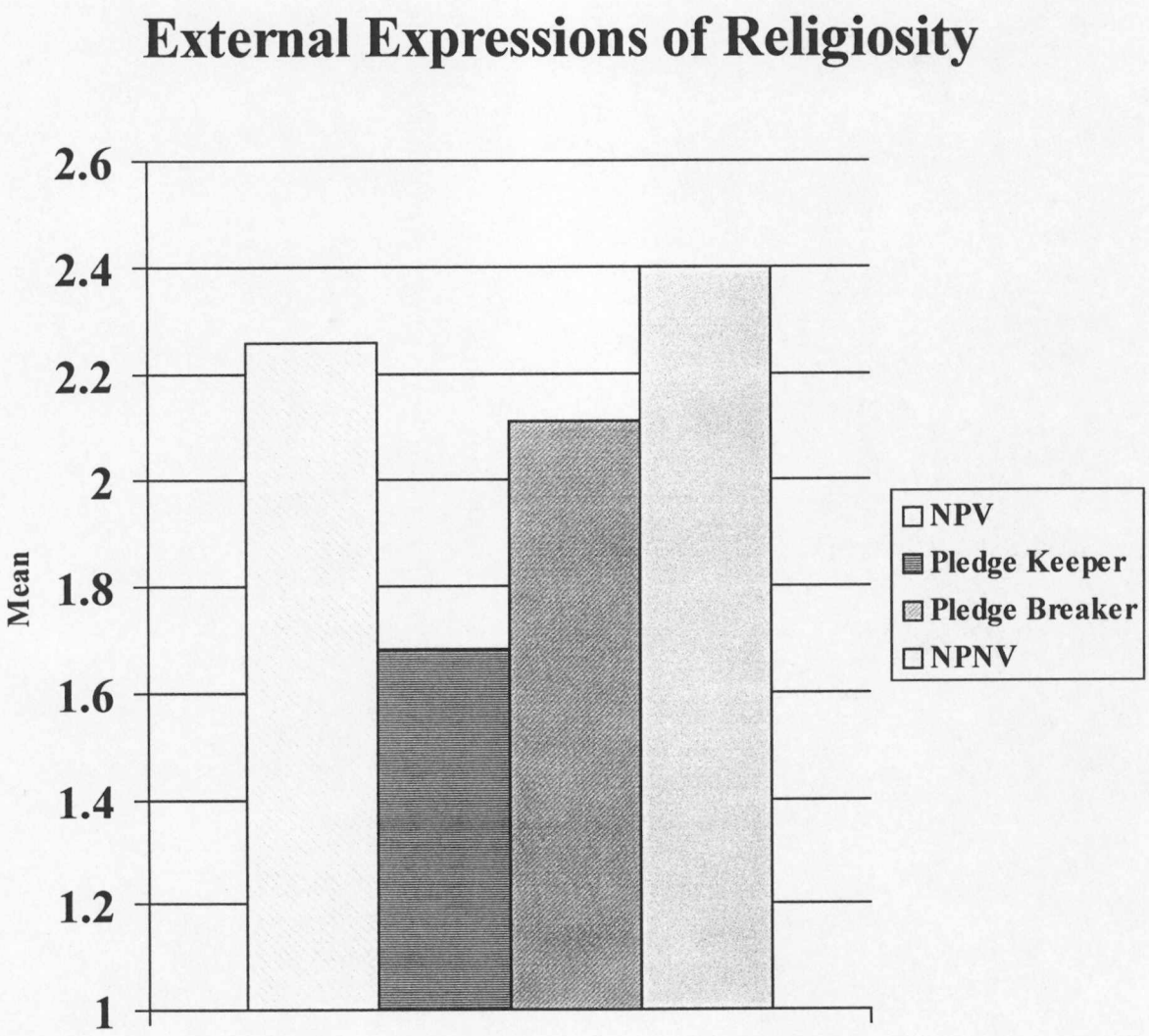


Figure 5. Means of sexual beliefs. Lower the score the more likely the adolescent's belief that sexual intercourse would have a negative impact. "Pledge keepers" had the strongest beliefs that sexual intercourse would effect their lives negatively. (1=strongly agree, 3=niether agree or disagree, 5=strongly agree.

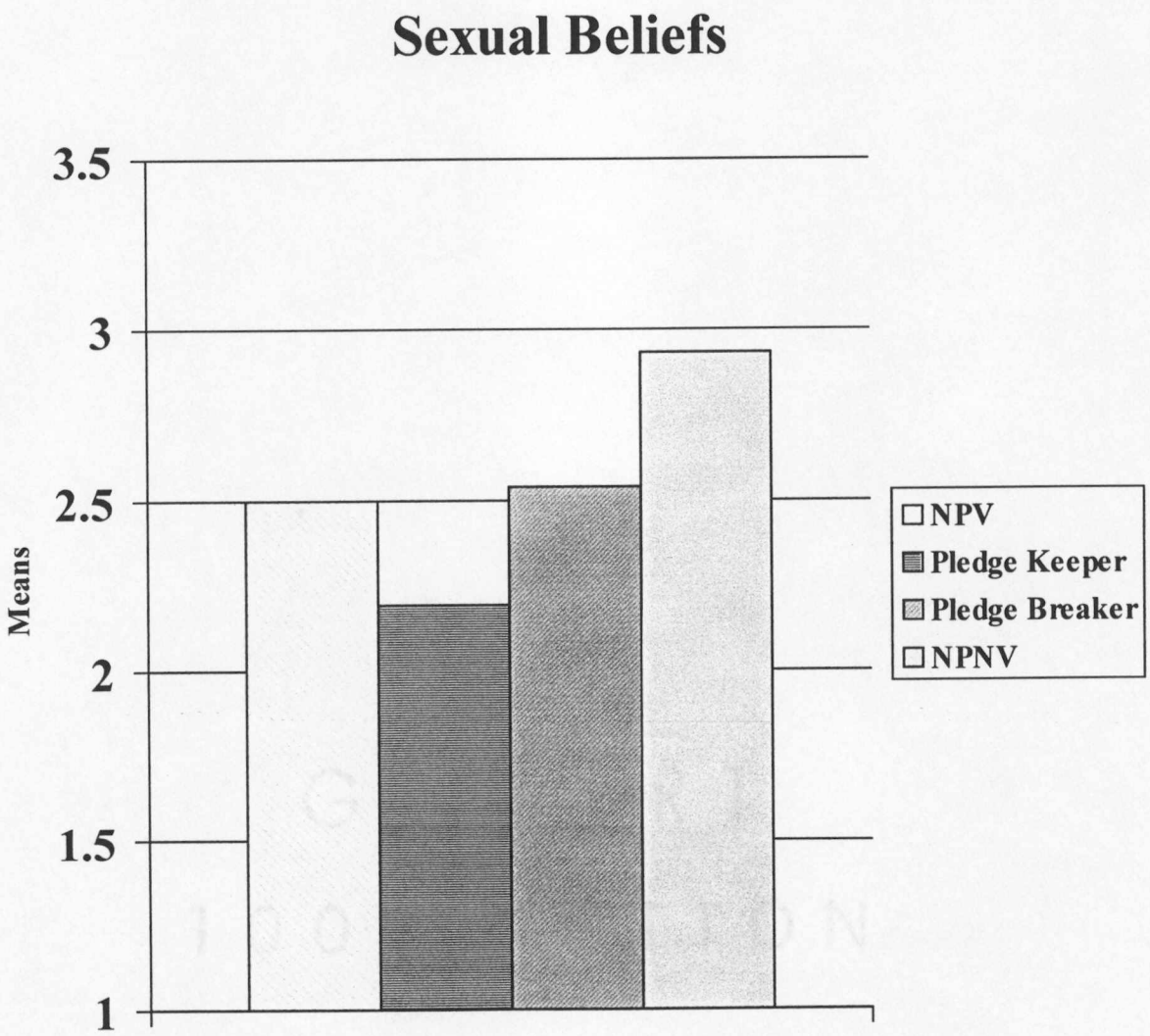


Figure 6. Means of educational expectations and aspirations. Adolescents who had not transitioned to sexual intercourse had higher educational expectations and aspirations. "Pledge keepers" had the highest expectations, "pledge breakers" had the lowest expectations.

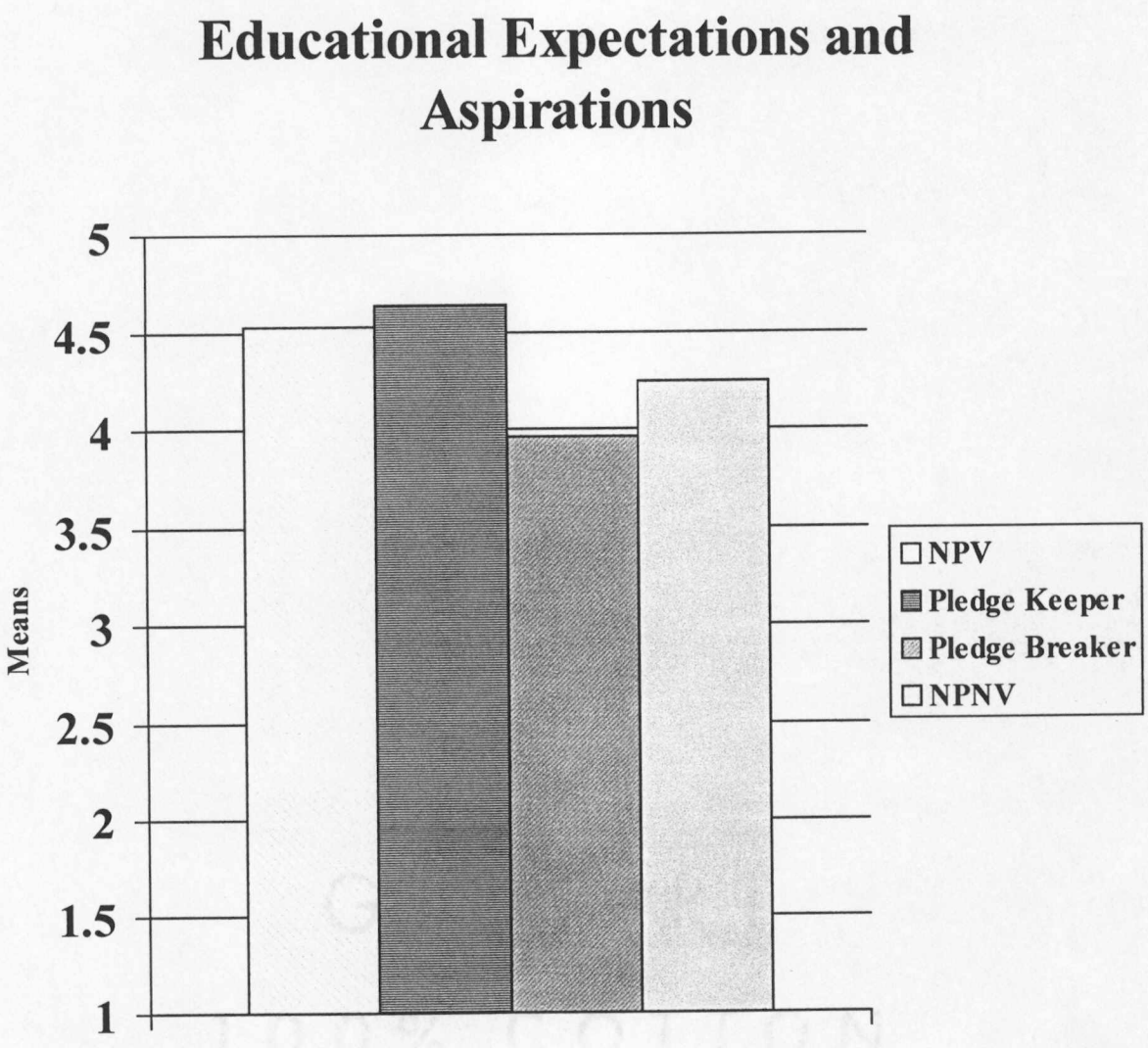


Figure 7. Percentage of adolescents who were involved in a romantic relationship in Wave I and Wave II. Adolescents who transitioned to sexual intercourse ("pledge breakers" and NPNV) were more likely to have dated in Wave I and Wave II. Adolescent "pledge keepers" were the least likely to have been involved in a romantic relationship during Wave II.

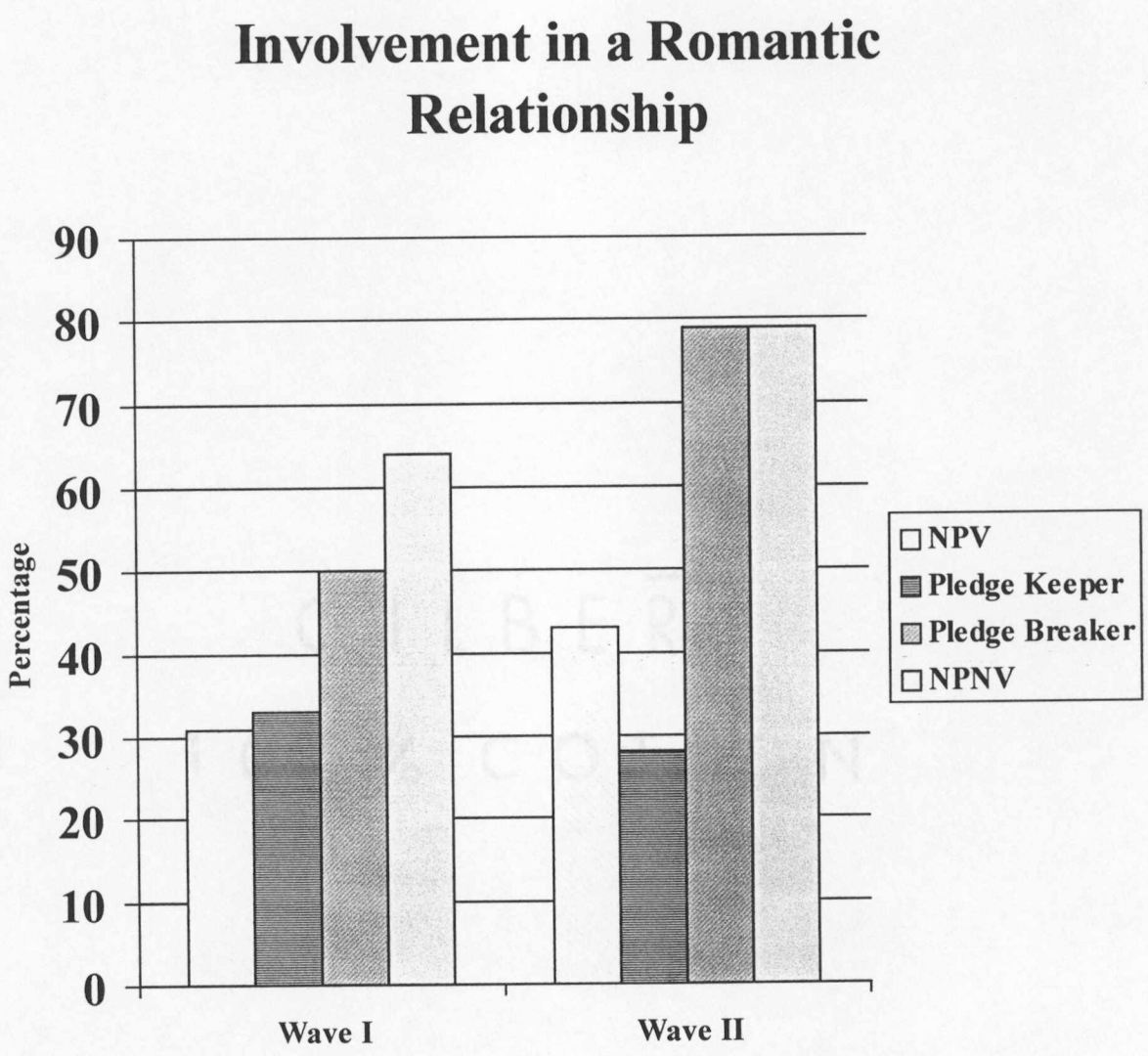


Figure 8. Age. Non-virgin adolescents were on average one year older than virgin adolescents, regardless of pledge status.

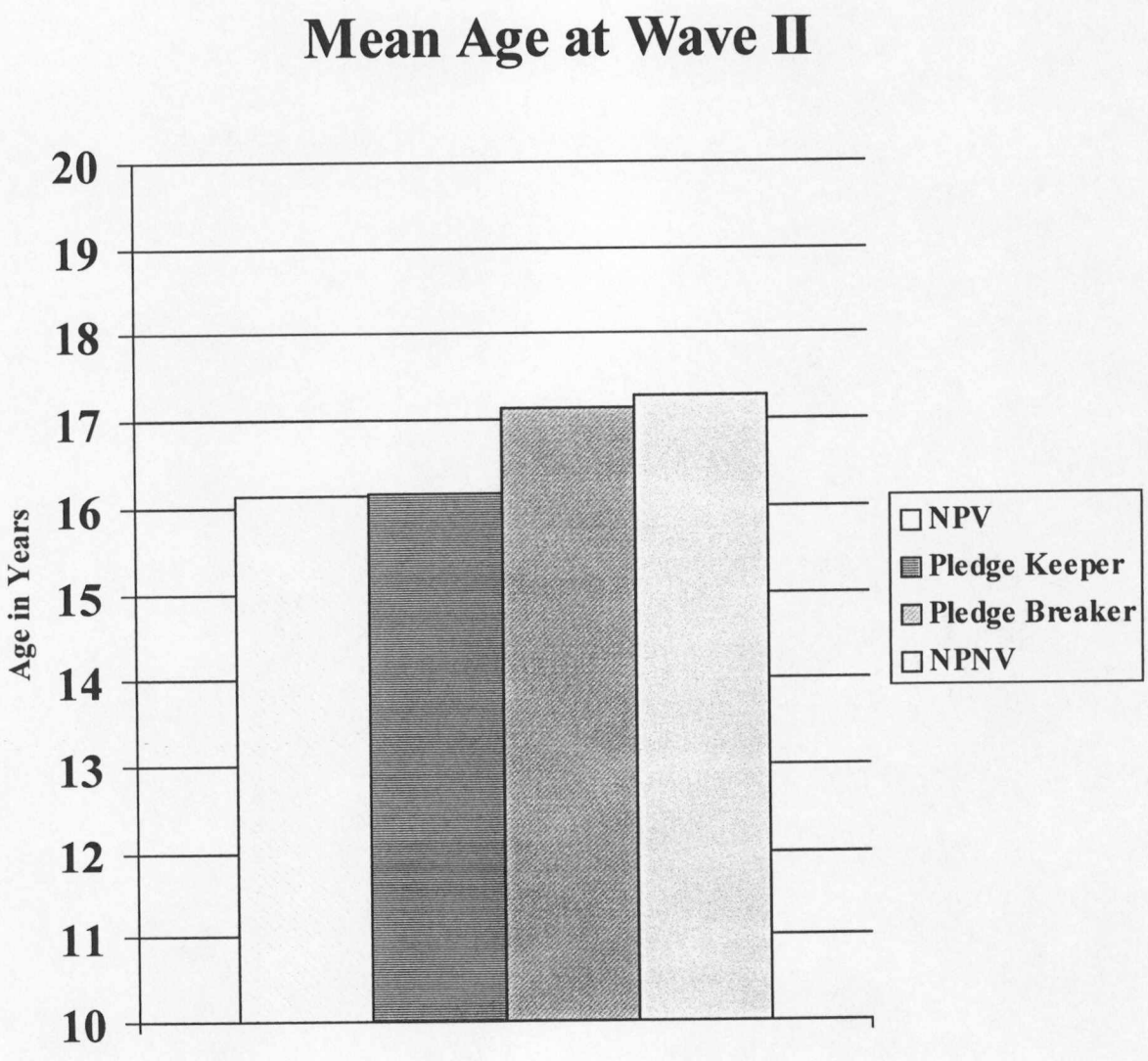


Figure 9. Means of parents' beliefs about their child's dating and sexual experience (0=never dated; 1=has dated; 2=has kissed; 3= has had intercourse). Very few parents believe that their child has transitioned to sexual intercourse. However, parents of "pledge breakers" are the least aware of their child's behaviors.

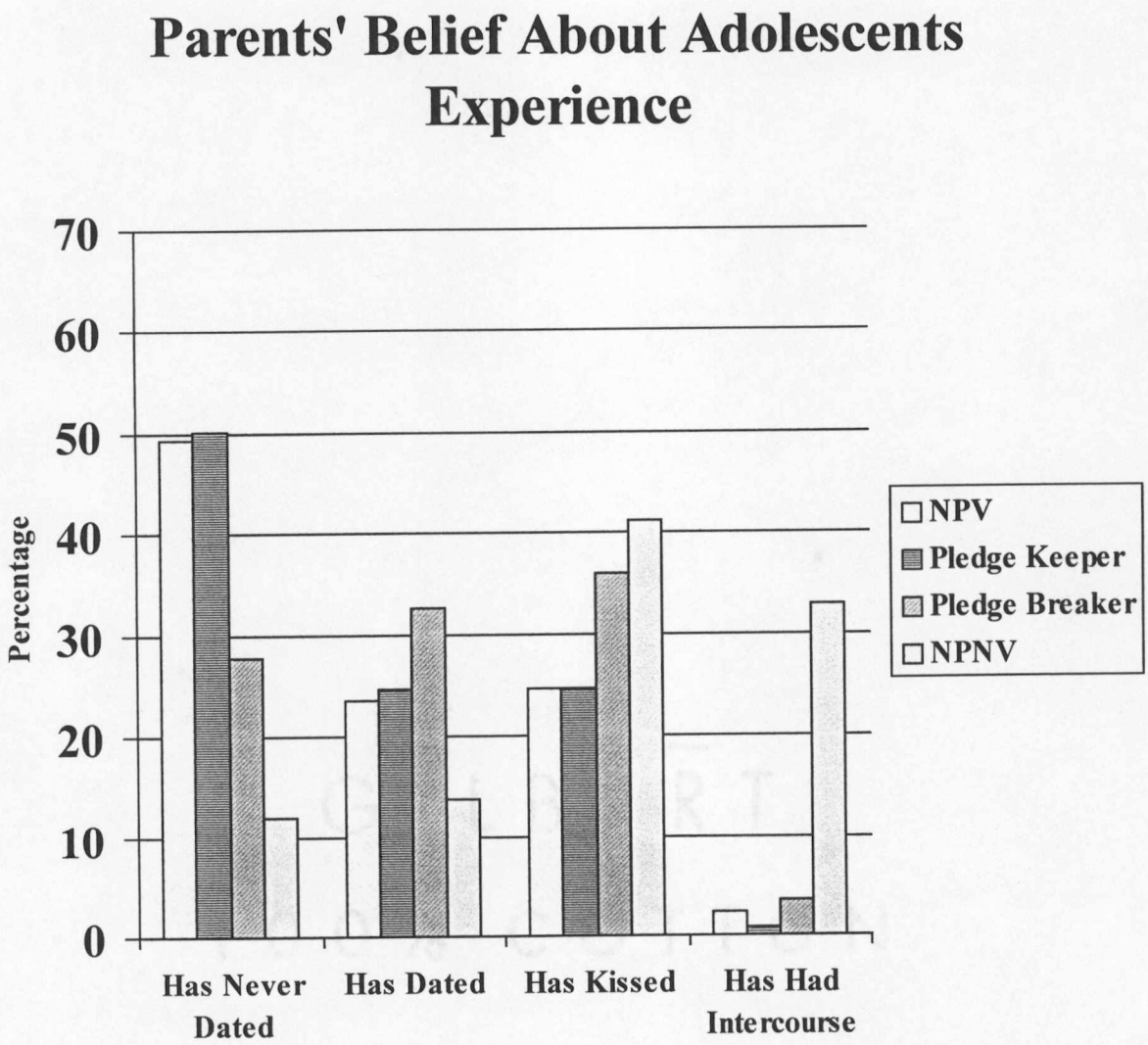


Figure 10. Means of parents' comfort in discussing sexual topics with their adolescent. Lower the score the more uncomfortable the parent is discussing sex. While most parent's are fairly comfortable talking to their children about sex, the parents of "pledge breakers" expressed the most discomfort.

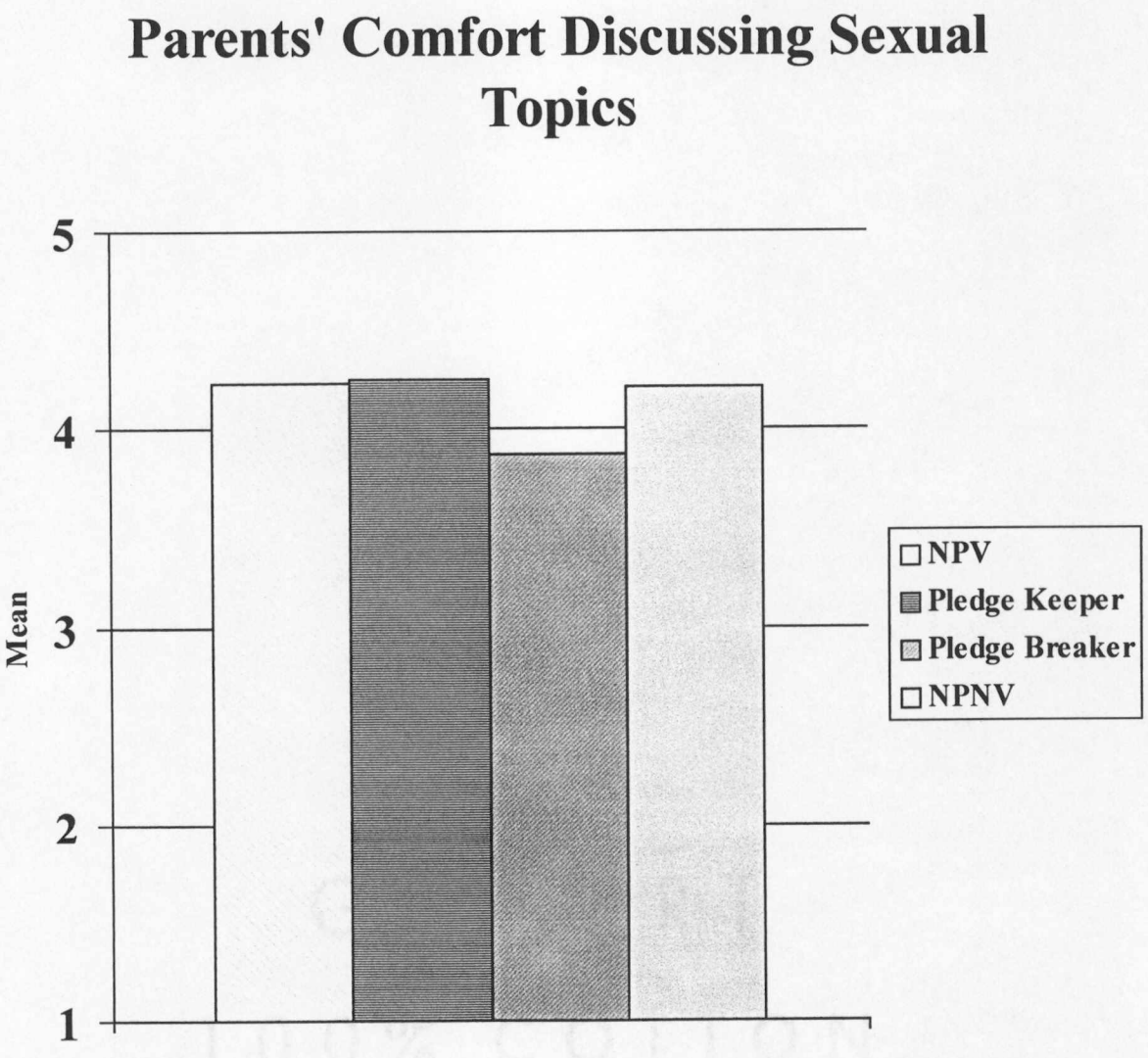


Figure 11. Mean number of friends who participate in risk behaviors such as smoking cigarette, drinking alcohol, and using marijuana. Adolescents who have transitioned to sexual intercourse had more friends who participated in risk behaviors. "Pledge keepers' were the least likely to have high risk peers.

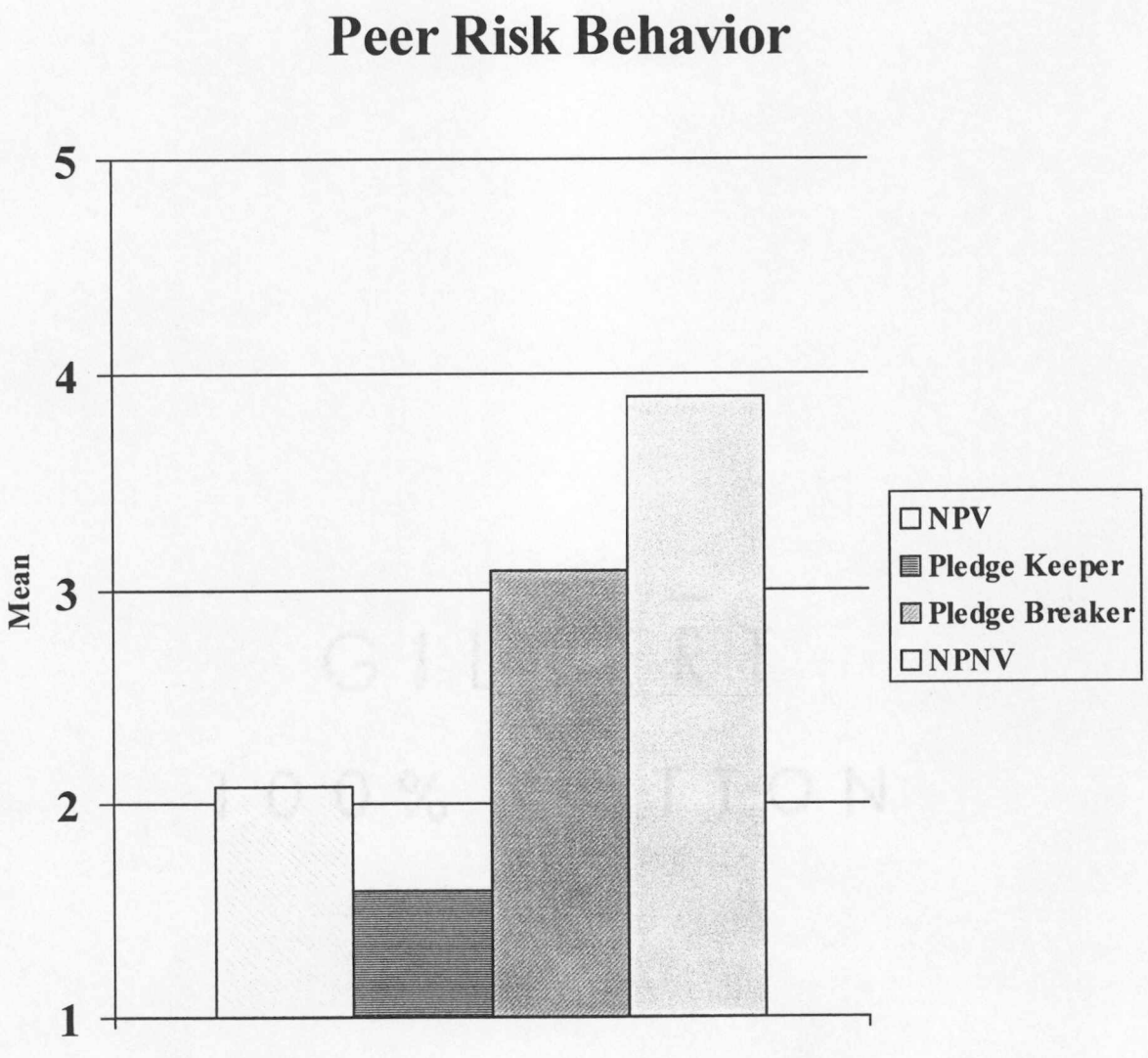
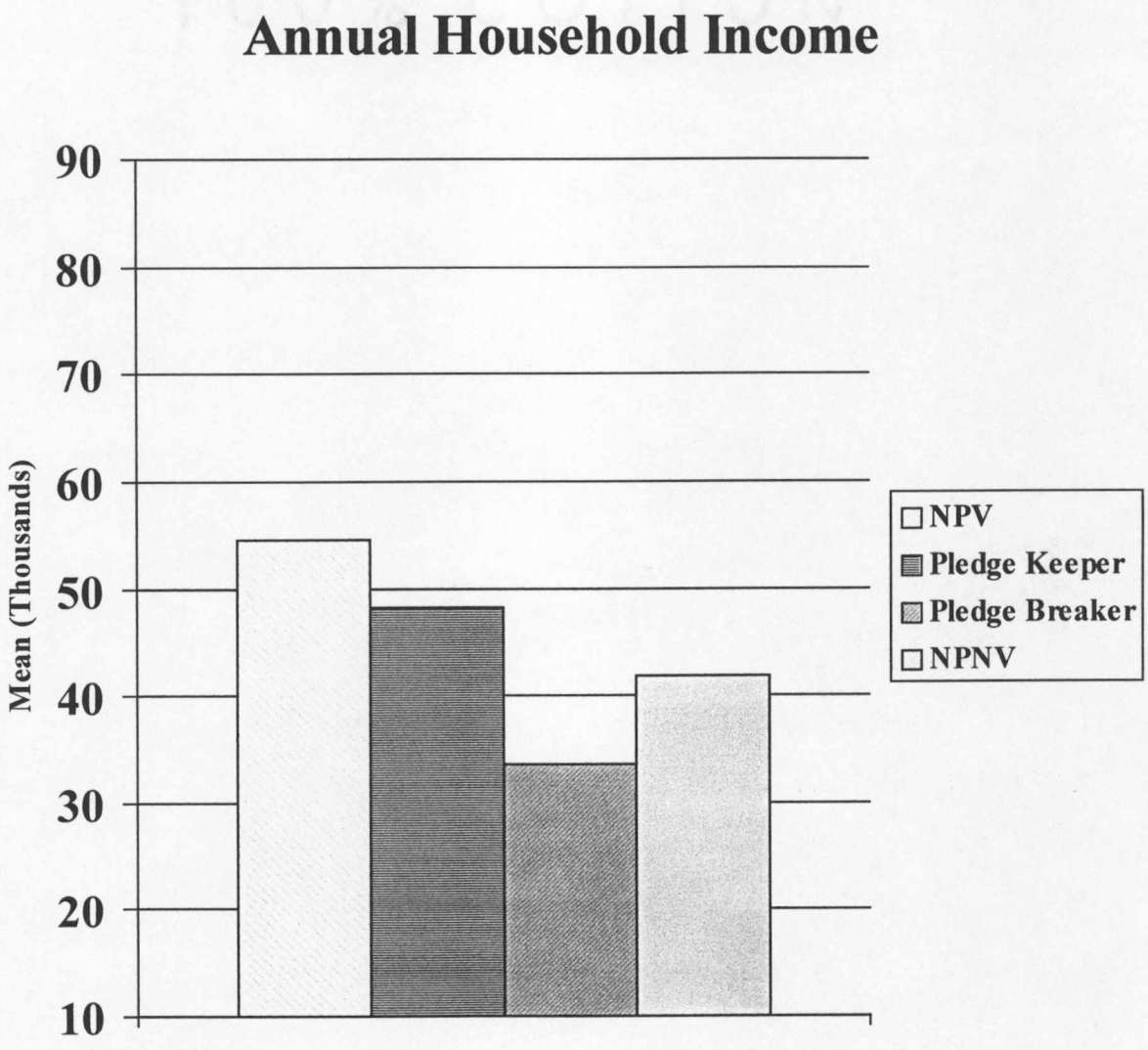


Figure 12. Mean of annual household income. Adolescents who have not transitioned to sexual intercourse tend to come from families with higher household incomes than non-virgin adolescents.



Vita

Catherine Grello was born in Bay Shore, New York on February 13, 1959. She attended the Bay Shore public schools and graduated from Bay Shore High School in June, 1977. She attended Syracuse University, Syracuse NY from September 1977 until May 1981 when she received a Bachelor of Fine Arts degree in Advertising Design. She worked in the advertising field until 1989. She entered the Master's program in Community Mental Health Counselling at the University of Tennessee, Knoxville in September 1997 and will complete her Master of Science degree in August 2000.