College students' beliefs in sexual myths

Gloria Ramona Meltzer

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COLLEGE STUDENTS' BELIEFS IN SEXUAL MYTHS

A Thesis
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts
in
Psychology

by
Gloria Ramona Meltzer
June 1993
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ABSTRACT

Sex research has made important contributions to the study and understanding of human sexuality. Despite the advances of the past few decades, the area of human sexuality remains pervaded by myths, fallacies, and misconceptions. Research indicates that the college years are a period of sexual experimentation and building interpersonal relationships. The purpose of this study was to examine the content and extent of college students' beliefs in sexual myths. Also examined were the effects that participants' gender and completion of a course in human sexuality had on beliefs in myths. The Human Sexuality Questionnaire was administered to 323 college students. Results revealed that females believed in significantly fewer myths than males. Results also indicated that completing a course in human sexuality significantly reduced beliefs in myths. In addition, age and education were significantly negatively correlated with beliefs in myths. Among students who had not taken a course in human sexuality, no differences were found between those interested in taking a human sexuality course in the future and those who were not. The main sources of knowledge about sex found to significantly decrease beliefs in myths were sex education and book/magazines. Implications for further research and the use of the Human Sexuality Questionnaire are discussed.
I am filled with many emotions as I come to the culmination of my Master's Degree and completion of my thesis. I am filled with hope and excitement as I look forward to the beginning of a doctoral program in Clinical/Counseling Psychology. I am filled with a sense of accomplishment and satisfaction as I recall all the work and effort of the past few years. I am also filled with joy and gratitude when I think of all the wonderful, dedicated, and supportive professors who touched my life in ways that they will never know, just by being themselves. It has been a wonderful and fulfilling experience!

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INTRODUCTION

Sex research in biology, physiology, sociology, and psychology has made important contributions to the study and understanding of human sexuality, and to the dispelling of numerous sexual myths (Kinsey, Pomeroy, & Martin, 1948; Kinsey, Pomeroy, Martin, & Gebhard, 1953; Masters & Johnson, 1966; Reinisch, 1990). Despite the advances made during the past few decades, the area of human sexuality is still pervaded by myths, fallacies, and misconceptions (Kelly, 1980; Masters, Johnson, & Kolodny, 1986; Weil, 1990). Unlike a fallacy which is based on a false belief or reasoning, or a misconception which is a wrong interpretation, a myth is based more on tradition or convenience and may be defined as "an idea that forms part of the beliefs of a group or class but is not founded on fact" (Oxford American Dictionary, 1980, p. 589).

Historically, sexual beliefs and practices have been used to explain illness, emotional disorders, aggression, and creativity (Masters et al., 1986; Miller & Lief, 1976). Sexual beliefs and practices are formed by the individual based on a complex interaction among cultural, social, and psychological processes (Rainwater, 1979; Simon & Gagnon, 1969; Weil, 1990). Most sexual myths revolve around the area of sex differences and the preconceived notion of certain innate psychological and physiological qualities found in each sex. Many sexual myths which grew from
ignorance and unscientific beliefs have their roots in Freudianism and continue to be perpetuated in plays, novels, magazines, movies, and the literature of the social sciences (Boston Women's Health Book Collective, 1973; Freud, 1920; Rosen, 1973; Salzman, 1967; Weil, 1990). One example may be found in the physiological misunderstanding regarding the belief in the idea of separate clitoral and vaginal orgasms, with the vaginal being espoused to be more mature and therefore desirable, and the clitoral being described as immature and less desirable. Other examples include the idea of penis envy, the inherent inferiority of women, and female passivity and male aggression during sexual intercourse. According to McCary (1967, 1971, 1973), sexual mythology is perpetuated by the peer group and by educated, but misinformed professionals, who pass on sexual misconceptions to those they instruct. Scientific findings that fail to confirm long held theories are seen as a threat to beliefs and value systems. For example, when lacking scientific explanations for contagious diseases and other maladies, especially among children, masturbation was reported to be the cause of many mental and physical illnesses (Masters, et al., 1986; Miller & Lief, 1976). Practices which included straightjackets, metal mittens, tying hands and legs together, eliminating certain foods from the diet, applying leeches to the genitals, applying genital cages, burning genital tissue,
and even castration and clitoridectomy were prescribed to
discourage and prevent masturbation (Reinisch, 1990).
Therefore, myths, fallacies, and misconceptions for which
there are no foundations in fact are passed on from one
generation to the next.

**Historical Perspective**

A brief look at history illustrates some of the causes
for the confusion and conflict that surround the
understanding and pursuit of knowledge regarding human
sexuality. It is particularly important to look the
powerful influence that religion has had in the area of
human sexuality, and as a result, on people's behavior,
culture, and ethics. The Mosaic laws found in the books of
Leviticus, Deuteronomy, and Exodus, express the philosophy
that the sole purpose of sexual expression was for
procreation. The "spiritualistic" movement that was
introduced into the Western world from India, Egypt, and
Mesopotamia, in the third century B.C., preached that
sexual desire was evil and advocated self-denial. In the
patriarchal, monotheistic religions, sex was equated with
sinfulness and was a strong influence on attitudes toward
sex which resulted in myth-making. Yet, in the twelfth
century, the rabbi and physician Maimonides wrote the Book
of Women. It contained the rules governing a woman's
conjugal rights, thus recognizing women's sexual desires as
important as those of men (Cole, 1975; Hyde, 1986). Both
historically and theologically, females have been considered inferior and more sinful than males, and paradoxically they have also been represented as sexually insatiable or basically disinterested in sex (Salzman, 1967).

Around the turn of the 20th century, pioneering scientists such as Havelock Ellis, Magnus Hirschfeld, Sigmund Freud, and Margaret and William Sanger sought to increase research and teaching in human sexuality (Freud, 1920; McCary, 1975). Research regarding human sexual behavior became a legitimate scientific pursuit in the 1940’s, with Alfred C. Kinsey, who used statistical analyses to draw conclusions regarding sexual behavior, instead of relying on case studies or observations (Kelly, 1980; Kinsey, et al., 1948, 1953). Subsequent researchers, such as Albert Ellis, William Masters and Virginia Johnson, Mary Calderone, and Robert Latou Dickinson have made significant contributions to the body of knowledge influencing sexual attitudes and behaviors (McCary, 1975).

Human Sexuality Research

Research in the area of human sexuality poses unique problems. Unlike other human physiological functions which can be studied with objective techniques, sex most often involves human interaction for procreation and expression. It is within this context of human interaction that sexuality can best be understood and studied. However,
much of the data regarding sexual behavior, attitudes, and beliefs is subjective and requires introspection, which may be subject to feelings of shame and guilt (Salzman, 1967).

Since the advent of university and college courses on human sexuality in the 1960’s, much progress has been made in providing students with basic sexual information and understanding regarding human sexuality (Kelly, 1980; Lief, 1974). Research indicates that accurate sexual information leads to increased sexual adjustment and pleasure, and reduces the anxiety and incidence of sexual inadequacies (Lehrman, 1970; Masters, et al., 1986; McCary, 1975). However, the subject of sex education has continued to generate much controversy, with many issues still unresolved. Many studies have been conducted to determine the effectiveness of these programs by assessing the students’ sexual knowledge, attitudes, and behavior, before and after participation in a course on human sexuality.

Dearth and Cassell (1976) examined the attitudes of three different groups of college students, prior to and upon completion, of a one semester course on human sexuality. An attitude inventory consisting of 18 items was given to students for three successive semesters, using a pretest and posttest design. The purpose was to determine what areas of attitude change or no change had resulted as a consequence of taking the course. Items on the attitude inventory included statements reflecting the
emphases of the subject matter included in the course, such as venereal diseases, homosexuality, sexual behavior, masturbation, contraception, etc. Results indicate both sexes moved toward a more liberal attitude, defined as the tendency "...to consider any sexual activity between consenting adults, individually or in groups, as legal and acceptable, if not infringing upon the rights of others" (Dearth & Cassell, 1976, p. 597). Overall, males and females were more alike than different in attitude; however, differences were found in several areas. Females showed a higher percentage of being liberal than males in the pretest scores, with males indicating a change towards liberal in the posttest scores. Males showed the highest percentage of attitudinal change in areas regarding homosexuality, abortion, male sex organs, sex drive, sex and love, and masturbation. Females showed the most change in areas regarding young adults and contraception, natural childbirth, religion and sex, female sex organs, and venereal disease. The fact that females showed a higher percentage of being liberal than males may have been a reflection of the effect of the women's liberation movement in the 70's, since this contradicts most of the prevailing literature reporting males being more liberal.

In another study, using an experimental and a control group, current sexual attitudes and sexual experience of college students were examined after a course in human
sexuality (Zuckerman, Tushup, & Finner, 1976). Also reported were religious attitudes and personality correlates of sexual attitudes and experience. A sex questionnaire consisting of a variety of scales was used to determine attitudes and experience. Analyses prior to the course indicated that subjects enrolled in a human sexuality course had more permissive attitudes toward sex and were more sexually experienced than students enrolled in the control course. Data also revealed that males had more permissive attitudes toward sex than females and had experience with a greater number of partners. Results following the course indicated an attitude change by males and females toward increased permissiveness; however, it appeared to affect changes in behavior only in males. Although heterosexual experience increased in both the control and experimental groups over the course of the semester, none of the groups showed a significant increase in the number of heterosexual partners. However, relative to the control group, the males who took the sex course indicated significant increases in homosexual experience and partners. It is not known whether this was a result of a greater willingness to report homosexual activity after completing a course or a behavioral change as a result of the course.

In an effort to assess the long-term effects of taking a course in human sexuality, Story (1979) tested the
hypotheses that students taking a university human sexuality course would have different attitudes over a two year period than those who haven’t and would also have more accepting attitudes toward the sexual behavior of others than their own. The sexual attitudes of a human sexuality class and a control class were measured at the beginning of class (pretest), the end of class (posttest), and 2 years after the end of class (follow-up). A Likert-type sexual attitude scale was developed to examine their reactions to themselves or others engaging in different categories of sexual behaviors. Results indicated that human sexuality students developed more accepting attitudes than the control group, and were more accepting of the sexual behavior of others, than for themselves. Conversely, the control group was less accepting in attitudes, and became less accepting of the sexual behavior of others than for themselves. As in most other studies, males were found, in general, to have more accepting sexual attitudes than females.

Kilmann, Wanlass, Sabalis, and Sullivan (1981) reviewed 33 studies to assess the effectiveness of sex education examining the following areas: populations, instructors, program formats and goals, time format, and outcome measures. College students were the most frequently studied population, followed by educators, counselors and medical school students. Most of the
studies did not include control groups and were dependent upon data from questionnaires. Few studies were longitudinal or included a follow-up. Most subjects did report gains in sexual knowledge with shifts toward more tolerant and liberal attitudes toward sexuality; however, the extent of any behavioral changes as a result of taking a course was unclear. Lack of studies on elementary, junior high, and high school students was noted due to the controversy surrounding the dissemination of sex information to these populations. Methodological problems made it difficult to draw any reliable conclusions and suggestions for future research were presented.

**Measurement Instruments**

The need to examine and measure sexual knowledge, attitudes, and behavior has led to the development of a variety of scales, questionnaires, and inventories. The Sex Knowledge and Attitude Test (SKAT) was designed in 1967 by Lief and Reed to measure sexual knowledge, attitudes, and experience. The attitude section consists of four scales: Heterosexual Relations, Sexual Myths, Abortion, and Autoeroticism or Masturbation. The Knowledge section consists of 71 true-false items. It has been used to measure changes after a course in human sexuality and in demonstrating deficiencies in the sex education of medical and health professionals (Lief, 1972; Miller & Lief, 1979; Williams & Miller, 1978). Data from a population of 5,276,
of whom 3,474 were medical students, revealed no significant differences in the group norms between male and female medical students in attitudes, with one exception. The sexual myths scale which measures acceptance or rejection of commonly held sexual misconceptions and fallacies revealed that female medical students were more rejecting of sexual myths than male medical students. A comparison with non-medical groups indicates that medical students are more liberal than student nurses and college students, but more conservative than male or female graduate students on all sexual attitudes measured. The term liberal referred to an individual's acceptance of premarital and extramarital heterosexual activities, abortion, autoerotic stimulation, and rejection of sexual myths (low scores implied a conservative attitude). Female graduate students were liberal on all four scales with male graduate students indicating greater acceptance of sexual myths and autoeroticism scales (Ebert & Lief, 1975; Lief, 1974; Lief & Payne, 1975).

A short-form scale to measure the extent to which a person adheres to a liberal or conservative orientation toward human sexual expression was developed by Hudson, Murphy, and Nurius (1983). Sexual expression was conceived of extending along a single bipolar continuum. At the liberal end are those who feel that the expression of human sexuality should be open, free, and unrestrained.
At the conservative end are those who feel that human sexuality should be constrained and closely regulated. The result was the 25 item Sexual Attitude Scale which may be used along with other measures to determine various aspects of sexual and nonsexual personal and social functioning. Items on the scale include statements expressing attitudes towards sex education, sex and the elderly, masturbation, homosexuals, pornography, etc.

Many of the instruments available to assess sexual attitudes are unidimensional, focusing on one aspect of the many that contribute to sexual attitudes. Hendrick, Hendrick, Slapion-Foote, and Foote (1985) developed a comprehensive and multidimensional sexual attitudes scale to study the extent to which college men and women differ in their sexual attitudes. A 102 item instrument was developed to encompass a wide range of attitudes and values associated with sexuality and love, including abortion, birth control, idealization of sex, etc. Factor analysis was used resulting in the five following scales: Responsibility, Permissiveness, Communion, Instrumentality, and Conventionality. Analysis of variance of individual items revealed gender differences on 73 of the 102 items. Females tended to be more responsible, conventional, and idealistic; male subjects tended to be more permissive, instrumental, and control/power oriented. College women expressed less support for sexual permissiveness and more
support for sexual responsibility than college men.

Fisher, Byrne, White, and Kelley (1988) reviewed and discussed the development of the Sexual Opinion Survey used to measure erotophobia-erotophilia, described as "the disposition to respond to sexual cues along a negative-positive dimension of affect and evaluation" (p. 123). These responses may be conceptualized as end points of a continuum, from negative (erotophobic) to positive (erotophilic). This was based on a theoretical model delineating the determinants of human sexual behavior. It consists of the sexual behavior sequence which rests on the assumption that beginning in early childhood individuals acquire affective, informational, and imaginal response dispositions that mediate the effect of sexual stimulation on subsequent sexual behavior. The survey contains items describing a positive or negative affective-evaluative response to a sexual activity or situation, such as sexual themes involving autosexual, heterosexual, and homosexual behavior, sexual fantasies and visual stimuli. Fisher, Grenier, et al. (1988) used the Sexual Opinion Survey to determine if erotophobia-erotophilia would affect medical students' interest in learning about sexuality and their willingness to treat patients with sexual problems. Results indicate that erotophobic students knew significantly less about sex than other students, did not tend to enroll in an elective human sexuality seminar, and
did not become more willing to treat patients with sexual problems even after the seminar.

The Sexuality Scale was developed by Snell and Papini (1989) to measure sexual-esteem, sexual-depression, and sexual-preoccupation. Sexual-esteem was defined as "positive regard for and confidence in the capacity to experience one's sexuality in a satisfying and enjoyable way" (Snell & Papini, 1989, p. 256.) Sexual-depression was defined as the "experience of feelings of depression regarding one's sex life" (Snell & Papini, 1989, p. 256.) Sexual-preoccupation was defined as the "tendency to think about sex to an excessive degree" (Snell & Papini, 1989, p. 256). Sexual esteem items focused on sexual competence and confidence, sexual-depression items focused on positive or negative feelings about sexual relationships and experiences, and sexual-preoccupation items focused on the amount time spent thinking or fantasizing about sex. "The source of all three of these sexual tendencies is assumed to be prior learning experiences related to human sexuality" (Snell & Papini, 1989, p. 257).

Results derived from 296 college students revealed no gender differences on measures of sexual esteem and sexual depression; however, males reported higher levels of sexual preoccupation than females. Data also revealed a negative correlation for both men and women between sexual-depression and sexual-esteeem. The correlation was
substantially larger for males than females, suggesting that males may not differentiate between sexual-esteem and sexual-depression to the extent that females do. For females they may constitute distinctive psychological tendencies, whereas for males they may constitute opposite ends of a single psychological dimension. Results also indicate females' sexual-esteem was positively correlated with sexual preoccupation, whereas males' sexual preoccupation was related to their sexual depression. Snell and Papini (1989) speculated on a possible explanation for this finding. They suggest that as women become more comfortable with their sexuality, their sexual esteem increases along with thoughts about sex. For males, it was speculated that the relationship may represent an attempt to compensate for feelings of sexual inadequacy by concentrating on their sexuality as a way of gaining a sense of reassurance about their virility, or it may represent a psychological substitute for a lack of closeness and intimacy with another person.

Concern regarding the sexual behaviors among adolescents that put them at risk for acquiring and transmitting sexually transmitted diseases, including the HIV virus, and teenage pregnancy, provided the motivation for the development of a comprehensive adolescent sexuality scale, the Sex Knowledge and Attitude Test for Adolescents (SKAT-A) (Lief, Fullard, & Devlin, 1990). The SKAT-A
consists of three main sections: knowledge, attitudes, and behavior. The knowledge section includes abortion, birth control and pregnancy, homosexuality, masturbation, sexual behavior, sexually transmitted diseases, etc. The attitude scale contains four subscales: Sexual Myths, Responsibility, Sex and its Consequences, and Sexual Coercion. The behavior section consists of questions regarding sexual behavior and experience, contraceptive use, dating, rape, molestation, pregnancy, and sexually transmitted diseases. Undergraduates administered the SKAT-A (N = 333) ranged in age from 17 to 25 years. Concurrent validity was assessed by comparing the SKAT-A with Kirby’s (1984) Knowledge and Attitude scales and Hendrick and Hendrick’s (1987) Multidimensional Sexual Attitude Scale. Results indicate that the SKAT-A Myth scale, which includes masturbation, pornography, and homosexuality, was significantly correlated with Permissiveness and Sex Practices (Hendrick) and with Sexuality in Life and Premarital Sex (Kirby). Also the SKAT-A Sex and its Consequences, regarding premarital sex and abortion, was significantly correlated with Permissiveness, Sex Practices, and Premarital Sex.

Gender and Human Sexuality

A review of the literature also indicates that gender influences sexual knowledge, attitudes, and behaviors. Beliefs in sexual myths may also be influenced by gender.
According to Lott (1987), traditional gender ideology, in Western cultures, has been the belief that women are less sexual than men. However, research has demonstrated that women are physically and psychologically as sexual as men, but the social context for sexual learning and experiences differ. As a result, women and men differ in their attitudes and expectations toward sexuality. For many women, sex is something a man takes and a woman gives. Culturally, adolescent boys learn that sexual activity signifies maturity and manhood. The lessons for teenage girls are unclear, resulting in ambivalent feelings about sexuality. Women are given the responsibility for controlling the sexual demands of men, whose needs are seen as greater than their own.

According to Gagnon (1977) and Gagnon and Simon (1973), being born female results in learning a view of sexuality that has some commonality with the male view, but results in very different sexual behaviors and expectations between the sexes. Masturbation is one example of early sexual learning that differs by gender. Males tend to experience their earliest sexual activity as solitary and attribute sexual pleasure to their genitals. However, females have been socialized to value the romantic, affect-laden dimensions of partner-related sexuality (Clifford, 1978). As a result, female genital sexual pleasure tends to be related more to sexual contacts with males rather
than through early masturbatory sexual activity. Regardless of age, males are more likely to have masturbated than females (Hyde, 1986; Miller & Lief, 1976; Simon & Gagnon, 1969).

The sequence of types of sexual behaviors also differs by gender, progressing from holding hands and kissing to light and heavy petting, to sexual intercourse, and to oral-genital stimulation (Curran, Neff, & Lippold, 1973). The transition from adolescence into young adulthood usually signals advancement within this sequence. As a result, sexual intercourse and oral-genital stimulation tend to be the primary forms of sexual behaviors for college students (Mahoney, 1979; Mahoney, 1983; Vener & Stewart, 1974). Although the sequence is similar for males and females, the movement through the sequence differs. Males move ahead of females as soon as light petting is experienced and remain there for the continuation of the sequence (Curran, et al., 1973). Also, male sexual experience is motivated by the enhancement of one’s social image among peers, while females tend to place sexual experiences within the emotional context of a relationship (Carns, 1973; Offer & Simon, 1976). Among college students, females place a greater emphasis on the affectional bond of the relationship prior to consenting to sexual intercourse. A close interpersonal relationship also impacts the female’s capacity to experience orgasm.
(Swieczkowski & Walker, 1978). According to Mahoney (1979), increased sexual enjoyment for a female is related to her involvement in a committed interpersonal relationship, to her partner’s involvement in the desired arousal activities, to the importance her partner places on her experiencing an orgasm, and to the consistency of her orgasmic experiences. For males, increased sexual pleasure is related to having a larger number of coital partners, and a greater frequency of sexual intercourse.

The gender differences observed may be explained as a result of the socialization into male and female roles in childhood and adolescence, the differential consequences for males and females of coital activity, and the residual effects of the double standard. The differences between coital experience for males and females may be viewed as a result of the following factors. The first is family ties. The stronger the tie to the family, the more difficult it is to develop permissive attitudes toward sex if they are not held by the family. This is especially true for the female who traditionally remains closer to the home environment for a longer period of time. Early childhood development regarding sexual behaviors is second. Many children receive the message that males are sexually oriented and females are love oriented. Slang terms for the male and female genitalia are more a part of the vocabulary of males and illustrates the emphasis for males
on the physical side of sex. Females develop a vocabulary which is more romantic in nature. The third is the "double standard." Some people continue to adhere to the attitude that sexual intercourse before marriage and extramarital relationships are socially acceptable for men, but not for women. Finally, there are differential consequences for males and females. The female is the one for whom the life consequences are the stronger if a pregnancy results (Elias, 1967).

Sex and College Students

Research has demonstrated the liberalization of sexual attitudes for many college students as they progress from freshman to seniors. Studies of gender differences also indicate that males have experienced premarital coitus more often than females. Robinson and Jedlicka (1982) examined the change in sexual attitudes and behavior of college students from 1965 to 1980. This study was a replication of an analysis of premarital sexual behavior and attitudes, within the same university, conducted in 1965, 1970, and 1975. Subjects were asked to respond to questions about premarital intercourse, petting, and statements concerning the morality of sexual behaviors, such as, "I feel that premarital sexual intercourse is immoral." They found a continued increase for both males and females in premarital sexual behavior, with females approaching a common asymptote in rates of premarital coitus to those of males.
Fewer gender differences in attitudes and behavior were found. An apparent "sexual contradiction" was found, with some students replacing the traditional double standard of stricter morality for women with a new double standard. The "new" double standard is characterized by the imposition of greater sexual restrictions on the sexual behavior of the opposite sex than on the self. A general tendency since 1975 was noted toward less permissive attitudes among all subjects, regardless of sexual experience. Thus, although more students are engaging in sexual intercourse with increasing numbers of partners, they believe it is immoral and sinful, illustrating the apparent sexual contradiction.

In another study, Earle and Perricone (1986) examined attitudes and behavior towards premarital sexuality in college students between 1970 and 1981. Data were collected in 1970 (N = 243), 1975 (N = 182), and 1981 (N = 368). They found significant increases in rates of premarital intercourse, significant decreases in the average age of first coital experience, and a significant increase in the average number of sexual partners. The relationship between attitudes toward premarital intercourse and behavior (reported coitus) was significantly stronger for women than men.

Although differences between men and women were seen in other areas, gender differences appear to be more
evident in attitudes than in behavior. Females students continue to be more conservative than males in their attitudes, with respect to the acceptability of premarital intercourse in the absence of a commitment between partners. One third of the men approved of "casual" sex, with less than 1 in 20 women indicating approval, and over one half of the men approved of intercourse with a regular date, compared to one third of the women. Women’s attitudes appear to change more during the college years than men, with one-half of the freshmen women expressing disapproval of premarital coitus, regardless of the relationship, and only 9.1% of senior women being similarly opposed. It was suggested that the stronger relationship between attitudes and behavior exhibited by female students when compared to males may indicate greater consistency and a closer tie between beliefs and behavior. Alternatively, it may indicate a change in attitude to reduce the cognitive dissonance female students may have as a result of their behavior.

As numerous studies have shown, there has been a major increase in the number of adolescents and young adults engaging in sexual intercourse. Given that males and females have different sexual scripts as a result of their sexual socialization, it is important to consider some of the sociopsychological aspects of sexuality. Gender is considered the single most important determinant of
patterns of sexuality, resulting in different sexual behaviors and expectations (Gagnon, 1977; Gagnon & Simon, 1973). As part of a three-year research project assessing the long term effects of human sexuality course content, Darling and Davidson (1986) examined the behaviors, attitudes, and concerns of college students who have engaged in coitus and looked at the changes they desired in their sex lives. Significant gender differences emerged. Results indicate the differences in the impact of sexual intercourse on the sociopsychological dimensions of sexual attitudes and behavior for males and females. Whereas most males and females participated in their first sexual intercourse voluntarily, a significant number of females (39% compared to only 8.8% of males) indicated that they did so under some pressure. There was a significant gender difference in psychological satisfaction after first coital experience, with males reporting psychological satisfaction at 67.4% compared to 28.3% for females. In addition, only 43.2% of males and 36% of the females used some form of contraception. Significant gender differences were also reported for physiological sexual satisfaction, with males reporting experiencing physiological sexual satisfaction at 80.9% compared to only 28.3% for females. Feelings of guilt after their first sexual intercourse were greater for females (31.8%) than males (14.9%). This is not surprising considering what is known about the differential impact of
sexual socialization for males and females. In general it appears that males reported significantly more pleasure and less sex guilt than females. Females experienced more pressure and guilt from their first coital experience and experienced less psychological and physiological sexual satisfaction than males.

The sexual concerns expressed most frequently by females were related to lack of achieving orgasm, lack of multiple orgasms during masturbation, petting, and sexual intercourse. The most frequent concerns expressed by males were lack of multiple orgasms during masturbation and lack of orgasm during petting. The greatest factor inhibiting ability to achieve orgasm during sexual intercourse was reported as overindulgence in alcohol, with a significant gender difference (57% males; 41.6% females). Fatigue was another factor listed by both males and females. Significant gender differences were also found for the following factors: painful sexual intercourse, fear of pregnancy, lack of privacy for sex, fear of discovery, and sex-related conflicts between partners (Darling & Davidson, 1986).

The most frequently reported desired change in the sex lives of coitally active college students was for more frequent sexual intercourse. A significant gender difference was noted with 60.9% of the males and 27.6% of females desiring this change. Other variables reflecting a
significant gender difference included females' desire for greater partner involvement such as increased oral stimulation of the nipples, manual stimulation of the breast, and manual stimulation of the clitoris by the partner. Males reported desiring a greater number of sexual partners, the availability of their sex partners on a more frequent basis, increased oral genital stimulation, and female responsibility for contraception. In general, females focused on changes related to foreplay and stimulation prior to coitus, whereas males focused on the quantitative dimensions of sexual pleasure. Suggestions were made for family life and human sexuality educators to include the sociopsychological aspects of sexual behaviors as an important part of the curriculum (Darling & Davidson, 1986).

Most of the research focusing on the sexual knowledge, attitudes, and behavior of college students has relied on the subjective responses, honesty, and wording of surveys and questionnaires. Some have questioned the validity of the outcome of this research. Renshaw (1989) examined the concrete signs of sex and the college student in the 1980s. She examined the current concerns and problems that students face stemming from the widespread use of the contraceptive pill in the 1960s, leading to the random, casual sex of the 1970s, and resulting in the sexually transmitted diseases of the 1980s. College health
professionals, working in the field for over 15 years, have reported cases among students of urethritis, cystitis, pregnancy, sexually transmitted diseases such as genital herpes, chlamydia trachomatis, gonorrhea, and by 1984, AIDS. Requests for contraceptives and help with impotence, ejaculatory problems, dyspareunia, vaginismus, and fear of coitus were also reported. The increase in sexual activity and the increase in the number of partners have put this population of youth in a high-risk category as carriers and transmitters for all sexually transmitted diseases, including AIDS.

In addition to the physicians and nurses, students expressed their sexual concerns to the professionals working in the college counseling centers. Many students complained of the emptiness and lack of intimacy in casual sex and wanted help with their personal sexual concerns and problems. It is apparent from these reports that being sexually active does not imply sexual satisfaction or being liberated from sexual concerns, doubts, and problems. Wiesmeier, Forsythe, Sundstrom, Ullis, and Hertz (1986) reported their findings on the sexual concerns, problems, and counseling needs of 215 freshman male athletes and 367 male students. Specific problems they were concerned with include too-rapid orgasm, sexual preoccupation, erectile dysfunction, no interest in sex, ejaculation problems, and coitus inhibition. They reported their partners concerns
as: orgasm problems, never having an orgasm, painful coitus, body inhibition, coitus inhibitions, no sex sensation, no interest in sex, too interested in sex, and vagina too tight for coitus. Fifty-one percent stated an interest in audiovisual materials on masturbation, contraception, vasectomy, sexually transmitted diseases, homosexuality, and abortion. Interestingly, there were no requests for audiovisual materials on foreplay and coitus, which may indicate a focus on the instrumentality of sex vs. the relational, lovemaking aspect. Renshaw (1989) recommended that the mechanics of reproduction be combined with the emotional and sociocultural aspects of human sexuality.

According to the U.S. Department of Health and Human Services (1986), education is the best method society has available for the prevention and consequences of irresponsible sexual behavior. Kirby (1984) states that sex education reaches 85% of students from elementary school to high school in large cities. Recent statistics, however, cause one to question the effectiveness of sex education programs. Teenage pregnancy in the United States among females under age 15 is five times higher than in any other developed countries and over 55% have had intercourse by the time they graduate from high school (Scales, 1987). In a meta-analysis of the effectiveness of sex education courses, Stout and Rivara (1989) found that traditional sex
education had no effect on sexual activity, contraceptive use, or teenage pregnancy. Cullari and Mikus (1990, p. 1183) state "It is clear...that knowledge about sexual matters alone does not reduce the sexual activity of adolescents....despite all the attention given to AIDS over the past few years, it does not appear that young people have changed their sexual behavior in response to this epidemic." In order to develop programs and techniques that will be effective, we must have specific information regarding sexual knowledge, attitudes, and behavior. According to Lief, et al. (1990, p. 80), "Sex education could be helped greatly through innovative educational programs that can correct faulty knowledge, dispel sexual myths, and impact on the variables leading to risky behavior."

Statement of Purpose

Research clearly indicates that the college years are a period of sexual experimentation. Although numerous studies have been conducted to assess the sexual attitudes, knowledge, and experience of college students, there appears to be no current information examining college students' beliefs in sexual myths. The purpose of this study was to examine the extent and content of college students' beliefs in sexual myths. It is important for several reasons: (a) college students are building relationships and experimenting sexually which may be
influenced by beliefs in sexual myths (Barclay, 1971; Elias, 1967; Renshaw, 1989); (b) beliefs in sexual myths may lead to risky or irresponsible sexual behavior (Lief, et al., 1990); (c) impact of sex education on beliefs in sexual myths is uncertain (Kelly, 1980); (d) beliefs in sexual myths can lead to unrealistic expectations, fears, anxieties, doubts, and depression (Kinder & Cowan, 1989; Lederer & Jackson, 1968; McCary, 1971; Weil, 1990); (e) beliefs in sexual myths may affect patterns of sexual interaction and affect the possibility for developing sexual intimacy, responsibility, and sexual satisfaction (Masters et al., 1986).

Previous research has demonstrated that gender and participation in a human sexuality course are factors affecting sexual knowledge, attitudes, and behavior. Beliefs in sexual myths may also be affected by these variables. Therefore, the following was hypothesized: (1) females will believe in fewer myths than males; (2) students who have participated in a human sexuality course will believe in fewer myths than those who have not.
METHOD

Subjects

The subjects for this study were male (123) and female (200) (N = 323) single, never married undergraduate students from California State University, San Bernardino. Students from all class standings and a variety of majors in day and evening classes were represented. The class standings were represented as follows: freshman (102), sophomores (81), juniors (82), and seniors (57). The students ranged in age between 18 and 28, with a mean age of 20.6 years. Students of a nontraditional college age, i.e., older than 28, were not included in the sample.

Other demographic variables collected, which were not a focus of this study, were religion and ethnicity. Religious denominations were represented as follows: Catholic (129), Protestant (77), and Jewish (7). Sixty-eight students listed Other, with the remaining students listing None (36). Ethnic groups included the following: White (195), Hispanic (62), Asian (28), Black (23), with the remaining students listing Other (13).

Instruments

The Human Sexuality Questionnaire was developed to obtain demographic data as well as information regarding beliefs in sexual myths, completion of a course in human sexuality, interest in taking a course in human sexuality.
in the future, and the main source(s) of knowledge about sex (Appendix A). Beliefs in sexual myths were measured by 30 closed-ended statements about human sexuality that were answered true or false. The range of possible scores on the questionnaire was 0-30. Approximate time to administer was between 10-12 minutes. The higher the student’s score, the greater is his or her belief in sexual myths. Most of the sexual myth statements included in the Human Sexuality Questionnaire may be found in Kelly (1980), Masters et al. (1986), and McCary (1967, 1971, 1973).

Validity and Reliability of the Human Sexuality Questionnaire

The items on the questionnaire were first developed from a literature review of sexual myths (Kelly, 1980; Masters, et al., 1986; McCary, 1967, 1971, 1973; Weil, 1990). A sexual myth was operationally defined as a widely held belief about sex that is not supported by factual information. Empirical research data were used as the bases for disproving a statement defined as a myth. The myths were reviewed by four college professors with doctorates, who are knowledgeable in the areas of human sexuality and women’s studies. The myths were also reviewed by the director of student health services who is a medical doctor, a board certified family practitioner in the community, and three counselors from Planned Parenthood. The myths receiving the greatest consensus
were included in the original questionnaire, which consisted of 40 items. These items were administered to two classes in a pilot study. Items that were redundant and were no longer considered myths by the students were deleted. This resulted in a reduction of the number of myths from 40 to 30.

The scales were tested for reliability using Cronbach's Alpha. Results indicate the internal consistency reliability for the Human Sexuality Questionnaire is $r = .72$. The Human Sexuality Questionnaire has good face validity and concurrent validity as evidenced by the significant correlation between those who have had some form of sex education and those who have not. An analysis of variance was performed between those students who received form one of the questionnaire (Group I) and those who received form two (Group II) $F (1,307) = 4.64, p < .032$. Significant differences were revealed between those students who received form one and those who received form two, raising questions about reliability.

Two forms of the questionnaire were devised and administered, with half of the subjects receiving the first form and half of the subjects receiving the second form. Each questionnaire contained an equal number of true and false statements arranged randomly to control for response style. On the second form of the questionnaire, all (but
one) true statements were changed from true to false; all the false statements were changed to true statements. The order of the questions was also rearranged in the second form. Both questionnaires contained an equal number of myths about male and female sexuality. The remaining myths were gender neutral. Some areas covered in the myths include sexually transmitted diseases, HIV, sex drive, pregnancy and sex, drugs and sex, homosexuality, penis size, masturbation, and orgasm.

Procedure

Subjects were recruited, with the prior permission of the instructor, at the beginning of each class session. One experimenter recruited all the subjects and administered all the questionnaires. Subjects were given a brief explanation about the Human Sexuality Questionnaire and the approximate time it would take to complete the questionnaire (10-12 min.). Subjects were told that participation was voluntary and anonymous. A cover letter was attached to the questionnaire for further clarification (Appendix B). Subjects who were interested in the result of the study and/or the correct answers were asked to retain the cover letter, which included an address where the researcher could be contacted.
RESULTS

College students' beliefs in sexual myths were scored for all students, for males and females separately, and for those who had completed a course in human sexuality and those who had not.

Analysis of Total Myth Scores by Course and Gender

A two-way analysis of variance was performed on the data to test the hypotheses that females would believe in fewer myths than males, and that students who had completed a course in human sexuality would believe in fewer myths than those who had not. As seen in Table 1, both hypotheses were confirmed. Females believed in significantly fewer myths than males $F(1,303) = 9.35$, $p < .002$, and students who had completed a course in human sexuality believed in significantly fewer myths than those who had not $F(1,303) = 9.43$, $p < .002$. No interaction was found.
Table 1

ANALYSIS OF VARIANCE FOR GENDER AND COURSE

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Mean Number of Myths Answered Incorrectly by College Students</th>
<th>SD</th>
<th>F</th>
<th>Significance of F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>8.00</td>
<td>4.23</td>
<td>9.35</td>
<td>.002</td>
</tr>
<tr>
<td>Females</td>
<td>6.50</td>
<td>3.83</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Course</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>7.61</td>
<td>4.00</td>
<td>9.43</td>
<td>.002</td>
</tr>
<tr>
<td>Yes</td>
<td>6.10</td>
<td>3.89</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

df = (1,303) for Gender and Course

Analysis of Scores on The Human Sexuality Questionnaire

Table 2 shows the percentage of myths answered incorrectly for each myth on the Human Sexuality Questionnaire, per group. The Scores ranged from 0 to 23 with a mean of 7.85 (SD=4.29).
Table 2
PERCENTAGE OF SEXUAL MYTHS ANSWERED INCORRECTLY BY COLLEGE STUDENTS

<table>
<thead>
<tr>
<th>Question</th>
<th>Correct Total</th>
<th>Females (N=323)</th>
<th>Males (N=200)</th>
<th>No Course (N=123)</th>
<th>Course (N=204)</th>
<th>(N=117)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Physiologically, there is no difference between a vaginal orgasm and a clitoral orgasm.</td>
<td>T 63.9</td>
<td>63.6</td>
<td>64.5</td>
<td>65.2</td>
<td>61.2</td>
<td></td>
</tr>
<tr>
<td>2. Alcohol is a sexual stimulant.</td>
<td>F 26.3</td>
<td>25</td>
<td>28.5</td>
<td>27.9</td>
<td>23.1</td>
<td></td>
</tr>
<tr>
<td>3. There is a risk of pregnancy when sexual intercourse takes place during the menstrual period.</td>
<td>T 22.4</td>
<td>21.5</td>
<td>23.8</td>
<td>23.6</td>
<td>19.7</td>
<td></td>
</tr>
<tr>
<td>4. Masturbation is practiced almost exclusively by men.</td>
<td>F 16.5</td>
<td>15.1</td>
<td>18.7</td>
<td>16.2</td>
<td>17.2</td>
<td></td>
</tr>
<tr>
<td>5. Participation in sexual activity prior to athletic activity will lower an athlete's performance level.</td>
<td>F 33.6</td>
<td>32.2</td>
<td>36.1</td>
<td>40.4(^b)</td>
<td>22.4(^b)</td>
<td></td>
</tr>
<tr>
<td>6. Childhood involvement with a homosexual is not an important cause of homosexuality as an adult.</td>
<td>T 40.2</td>
<td>36</td>
<td>47.2</td>
<td>45.1(^b)</td>
<td>31.6(^b)</td>
<td></td>
</tr>
<tr>
<td>7. The absence of the hymen (cherry) proves that a girl is not a virgin.</td>
<td>F 25.2</td>
<td>22.5</td>
<td>29.5</td>
<td>28.1</td>
<td>19.7</td>
<td></td>
</tr>
<tr>
<td>8. There is a risk of pregnancy if a man withdraws his penis before he ejaculates.</td>
<td>T 11.5</td>
<td>9</td>
<td>15.4</td>
<td>14.2(^b)</td>
<td>6(^b)</td>
<td></td>
</tr>
<tr>
<td>9. It is not possible to get HIV (human immunodeficiency virus) from donating blood.</td>
<td>T 41.8</td>
<td>40.5</td>
<td>43.9</td>
<td>41.2</td>
<td>42.7</td>
<td></td>
</tr>
<tr>
<td>10. Marijuana is an aphrodisiac.</td>
<td>F 26.4</td>
<td>28</td>
<td>23.8</td>
<td>27.1</td>
<td>25.6</td>
<td></td>
</tr>
<tr>
<td>11. For most women sexual intercourse without other stimulation, is not the best method for producing orgasm.</td>
<td>T 21.9</td>
<td>19.1</td>
<td>26.7</td>
<td>23</td>
<td>19.7</td>
<td></td>
</tr>
<tr>
<td>12. It is usually possible to identify gay men and lesbians by their appearance.</td>
<td>F 19.5</td>
<td>17</td>
<td>23.6</td>
<td>20.1</td>
<td>17.9</td>
<td></td>
</tr>
</tbody>
</table>

(Continued)
Table 2 (continued)

PERCENTAGE OF SEXUAL MYTHS ANSWERED INCORRECTLY BY COLLEGE STUDENTS

<table>
<thead>
<tr>
<th>Correct Answer</th>
<th>Total (N=323)</th>
<th>Females (N=200)</th>
<th>Males (N=123)</th>
<th>No Course (N=204)</th>
<th>Course (N=117)</th>
</tr>
</thead>
<tbody>
<tr>
<td>13. The removal of the prostate does not reduce a man's sexual capabilities.</td>
<td>T 21.6</td>
<td>19.1</td>
<td>25.8</td>
<td>26&lt;sup&gt;b&lt;/sup&gt;</td>
<td>13.7&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>14. Gonorrhea and syphilis are the only &quot;true&quot; venereal diseases.</td>
<td>F 6.5</td>
<td>5</td>
<td>9</td>
<td>5.9</td>
<td>6.8</td>
</tr>
<tr>
<td>15. Sexual intercourse should be avoided during pregnancy.</td>
<td>F 19.3</td>
<td>14&lt;sup&gt;a&lt;/sup&gt;</td>
<td>27.9&lt;sup&gt;a&lt;/sup&gt;</td>
<td>23.6&lt;sup&gt;b&lt;/sup&gt;</td>
<td>11.1&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>16. Simultaneous orgasms are not necessary for sexual compatibility.</td>
<td>T 12.1</td>
<td>10.5</td>
<td>14.9</td>
<td>12.9</td>
<td>10.3</td>
</tr>
<tr>
<td>17. Blacks generally have a stronger sex drive than whites.</td>
<td>F 18.3</td>
<td>18.1</td>
<td>18.7</td>
<td>19.7</td>
<td>15.4</td>
</tr>
<tr>
<td>18. Urination by a woman after having sexual intercourse will not prevent pregnancy.</td>
<td>T 9</td>
<td>8</td>
<td>10.6</td>
<td>8.8</td>
<td>9.4</td>
</tr>
<tr>
<td>19. Castration does not always destroy the sex drive completely.</td>
<td>T 19.1</td>
<td>17.6</td>
<td>21.5</td>
<td>22.9&lt;sup&gt;b&lt;/sup&gt;</td>
<td>12.8&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>20. The larger the penis in its nonerect state, the larger it will be when erect.</td>
<td>F 35.1</td>
<td>39.7&lt;sup&gt;a&lt;/sup&gt;</td>
<td>27.6&lt;sup&gt;a&lt;/sup&gt;</td>
<td>37.7</td>
<td>29.3</td>
</tr>
<tr>
<td>21. Healthy, sexually active people masturbate.</td>
<td>T 11.8</td>
<td>11</td>
<td>13.1</td>
<td>12.8</td>
<td>10.3</td>
</tr>
<tr>
<td>22. The risk for contracting the HIV (human immunodeficiency virus) during heterosexual sex is very low.</td>
<td>F 20.8</td>
<td>17.1&lt;sup&gt;a&lt;/sup&gt;</td>
<td>26.8&lt;sup&gt;a&lt;/sup&gt;</td>
<td>17.6</td>
<td>25.9</td>
</tr>
<tr>
<td>23. Male homosexuals usually come from families with a dominating mother and a submissive father.</td>
<td>F 27.6</td>
<td>24.5</td>
<td>32.8</td>
<td>30.4</td>
<td>21.6</td>
</tr>
<tr>
<td>24. Sterilization does not reduce the sex drive of a man or woman.</td>
<td>T 14.3</td>
<td>11.5</td>
<td>18.9</td>
<td>15.3</td>
<td>12.8</td>
</tr>
<tr>
<td>25. Menopause usually causes a woman's sex drive to decline.</td>
<td>F 36.3</td>
<td>36</td>
<td>36.9</td>
<td>37.9</td>
<td>33.3</td>
</tr>
</tbody>
</table>

(Continued)
The sexual myths that were answered incorrectly by over one third of all students were as follows: there is a difference between a vaginal and a clitoral orgasm, males (65%) females (64%) (Myth 1); sexual activity prior to athletic activity will lower an athlete's performance level, males (36%) females (32%) (Myth 5); childhood involvement with a homosexual is an important cause of homosexuality as an adult, males (47%) females (36%) (Myth 6); that it was possible to get HIV (human immunodeficiency virus) from donating blood, males (44%) females (41%) (Myth 9); the larger the penis in its nonerect state, the larger it will be when erect, males
(28%) females (40%) (Myth 20); that menopause usually causes a woman’s sex drive to decline, males (37%) females (36%) (Myth 25); and that men are more interested in sex than women, males (36%) females (32%) (Myth 26).

The sexual myths answered incorrectly by less than 15% of all students were as follows: there was no risk of pregnancy if a man withdraws his penis before he ejaculates, males (15%) females (9%) (Myth 8); that gonorrhea and syphilis are the only "true" venereal diseases, males (9%) females (5%) (Myth 14); simultaneous orgasms are necessary for sexual compatibility, males (15%) females (11%) (Myth 16); urination by a woman after having sexual intercourse will prevent pregnancy, males (11%) females (8%) (Myth 18); that healthy, sexually active people do not masturbate, males (13%) females (11%) (Myth 21); and that a large penis was necessary for female sexual satisfaction, males (3%) females (4%) (Myth 27).

Analysis of Each Myth by Course and Gender

A two-way analysis of variance was performed for each myth separately, with course and gender as the independent variables.

Course

Significant main effects for course were observed indicating that taking a course in human sexuality resulted in fewer beliefs in the following myths: sexual activity
prior to athletic activity will lower an athlete's performance level, course (22%) no course (40%) (Myth 5) $F(1,311) = 10.35, p < .001$; childhood involvement with a homosexual is an important cause of homosexuality as an adult, course (32%) no course (45%) (Myth 6) $F(1,316) = 4.91, p < .027$; there is no risk of pregnancy if a man withdraws his penis before he ejaculates, course (6%) no course (14%) (Myth 8) $F(1,316) = 4.29, p < .039$; removal of the prostate does reduce a man's sexual capabilities, course (14%) no course (26%) (Myth 13) $F(1,310) = 5.88$, $p < .016$; and castration always destroys the sex drive completely, course (13%) no course (23%) (Myth 19) $F(1,312) = 4.60, p < .033$.

**Gender**

Significant main effects for gender were observed indicating a significant gender difference in beliefs in the following myths: fewer males (28%) than females (40%) believed that the larger the penis in its nonerect state, the larger it will be when erect (Myth 20) $F(1,312) = 6.10, p < .014$; fewer females (17%) than males (27%) believed that the risk for contracting the HIV during heterosexual sex was very low (Myth 22) $F(1,314) = 4.75, p < .030$; and fewer females (16%) than males (35%) believed that sexual activity rarely occurs after the age of 65 (Myth 28) $F(1,313) = 16.47, p < .0001$. 

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Course and Gender

Significant main effects for both course and gender were observed with no two-way interaction, for the following myths: fewer females (14%) than males (28%) believe that sexual intercourse should be avoided during pregnancy (Myth 15) \( F (1,310) = 7.35, \ p < .007 \), and it was believed less by those who had completed a course in human sexuality (11%) as compared to those who had not (24%) \( F (1,310) = 6.04, \ p < .015 \); and fewer females (21%) than males (41%) believed that regular douching was necessary to keep the vagina clean (Myth 30) \( F (1,313) = 13.12, \ p < .0001 \), and it was believed less by those who had completed a course in human sexuality (17%) as compared to those who had not (34%) \( F (1,313) = 9.12, \ p < .003 \).

Correlation Analysis

Pearson product-moment correlation coefficients were used to analyze the relationships between age and education and beliefs in myths. Results revealed a significant negative correlation between age and beliefs in myths \( r = - .18 \ (p < .001) \), indicating that as education increases from freshman to senior year beliefs in myths decrease.

Miscellaneous Results

Students were asked to indicate whether they would be interested in taking a course in human sexuality in the future. Results indicate that most students who have not
had a course in human sexuality would be interested in taking one in the future, with only 32 students responding negatively. An analysis of variance was performed between those who indicated that they would be interested in taking a course in the future and those who did not, and myths. Results revealed no significant difference between the groups on myth scores $F(1,198) = .03, p < .863$.

In response to the question indicating the main source(s) of knowledge about sex, students listed the following in order of frequency: friends (219), sex education classes (204), books/magazines (184), movies/television (140), parents (139), brothers/sisters (56), relatives (44), and church (17). An analysis of variance was performed on each source of information about sex and its effect on beliefs in myths. Results revealed significant main effects for the following: sex education $F(1,307) = 5.35, p < .021$, and books/magazines $F(1,307) = 16.24, p < .0001$. These sources of sexual information were associated with significantly fewer beliefs in myths.
DISCUSSION

The results of the present study support the hypotheses that females believe in fewer sexual myths than males and that students who have completed a course in human sexuality believe in fewer sexual myths than those who have not. Other factors that were found to significantly affect beliefs in fewer myths were the student's age and education. The main source(s) of knowledge about sex that significantly affected beliefs in fewer myths were sex education and books and magazines.

The college students as a group responded correctly to 73% of the myth statements on the Human Sexuality Questionnaire. Since there are no other studies examining the content or the extent of college students' beliefs in sexual myths no comparisons can be made. However, the finding that students who completed a course in human sexuality believed in significantly fewer myths than students who did not supports the effectiveness of sex education courses for reducing beliefs in sexual myths, as well as for increasing sexual knowledge (Kilmann, et al., 1981; Lief, 1972).

Discussion of Gender Differences

The finding that females missed significantly fewer myths than males finds support in the literature regarding the sexual socialization of males and females. According
to Gagnon and Simon (1973) males and females receive different messages and sexual scripts that are learned during the various stages of psychosexual development in childhood and adolescence. This, in turn influences subsequent sexual behavior. The consequences for female sexual activity have the potential of having a greater negative social and physical impact than for males.

According to Masters, et al., (1986) the code of sexual conduct may vary from one community to another, and also within ethnic and economic groups within each community. If the sexual code is more traditional, then females who engage in sexual activity may be perceived as being "tarnished," having a "reputation," or being an "easy lay." In another community, it may be perceived as a status symbol. The "double standard" still persists, with the male as the sexual initiator and the female labeled "aggressive" or "oversexed" if she assumes this role. It has been suggested that "a new tyranny of sexual values is emerging; teenagers are expected by their peers to become sexually experienced at an early age and those who are not comfortable with this pressure are viewed as old-fashioned, immature, or "uptight" (Master, et al., 1986, p. 145).

Little research is available examining the consequences of unintended pregnancy for males. Many male adolescents continue to hold females responsible for contraception and "blame" them if a pregnancy results. The
greater consequences for unintended female pregnancy include increased health risks and a high infant mortality rate. Also, they tend to drop out of school, are less likely to enter the job market, and rely on government services and support. Psychologically they are impacted by receiving little social or emotional support from the father, or others. Often they suffer from guilt and anguish if they decide on abortion or adoption. If they marry, it is more likely to end in divorce or desertion, and the suicide risk for these young women is higher than in the general population (Masters, et al., 1986).

It is reasonable to suggest that the biological reality of being female would necessitate becoming more knowledgeable and informed about the consequences of sexual behavior, leading to a decrease in beliefs in sexual myths. One can also speculate that parents may educate their daughters more about sex and its consequences than their sons.

Discussion of Sexual Myths

The results of this study indicated that the following seven myths were missed by over one-third of the students. It may be of importance for professors, counselors, and other professionals to discuss in human sexuality courses or while counseling college students:

(Myth 1) "Physiologically, there is no difference between a vaginal orgasm and a clitoral orgasm." (True)
This myth was missed most frequently by both females and males, and by students whether they had completed a course in human sexuality or not. It is possible that the wording on this question was ambiguous or it may signify a continued belief in the Freudian myth of the existence of two kinds of orgasms. The landmark research of Masters and Johnson (1966) clearly indicates that the existence of two kinds of orgasms, clitoral and vaginal, is a myth.

"Physiologists have reported that the vaginal walls contain few erogenous nerve endings and that it is only stimulation (direct or indirect) of the clitoris that produces orgasmic response in women" (Weil, 1990, p. 198). Several explanations for this continued belief have been proposed: (1) many men prefer the sexual stimulation of the woman's vagina; (2) many men find a woman's preference for one type of stimulation threatening; (3) there is a continued need for many in society to justify unequal rights for women; and (4) male and female ignorance regarding a woman's anatomy; (5) some women prefer orgasms that result from intercourse; and (6) not all orgasms have the same feeling or intensity (Masters, et al., 1986; Weil, 1990).

(Myth 5) "Participation in sexual activity prior to athletic activity will lower an athlete's performance level." (False) This myth is still being perpetuated by athletic trainers and coaches today. There are no empirical studies supporting the myth that an athlete's
performance level will be diminished by sexual activity (McCary, 1971). More males than females continue to adhere to this myth; however, those who had completed a course in human sexuality scored significantly better on this myth.

(Myth 6) "Childhood involvement with a homosexual is not an important cause of homosexuality as an adult."
(True) Studies have shown that homosexuality is not necessarily determined by the early social/cultural environment (Reinisch, 1990). Myths regarding homosexuals and homosexuality are pervasive in our culture, and the results of this study indicate that those who had completed a course in human sexuality scored significantly better than those who had not.

(Myth 9) "It is not possible to get HIV (human immunodeficiency virus) from donating blood." (True) This is a relatively new myth which appears to have developed since the public became aware of the nature, extent, and spread of the HIV (human immunodeficiency virus) leading to AIDS. It is alarming that so many students subscribed to this belief, indicating a need for greater clarification between donating blood and receiving a blood transfusion which has a small probability of containing the HIV.

Another new myth (#22) regarding the HIV states that, "The risk for contracting the HIV (human immunodeficiency virus) during heterosexual sex is very low." While this was not in the group of myths most answered incorrectly,
there was a significant gender difference with males subscribing to this myth more than females. One possible explanation for this difference may be found in the differential consequences faced by males and females for contracting this disease. There is a higher risk factor for females to contract AIDS during heterosexual sex than for males. There may also be a tendency for many males to continue to perceive AIDS as primarily a homosexual disease (Reinisch, 1990).

(Myth 20) "The larger the penis in its nonerect state, the larger it will be when erect." (False) There was a significant gender difference for this myth. Not surprisingly, females believed this myth more than males. Research indicates that the size of a flaccid penis does not predetermine its size when erect; however, research has also shown that males generally have a tendency to overestimate penis size when erect (McCary, 1971; Reinisch, 1990).

(Myth 25) "Menopause usually causes a woman's sex drive to decline." (False) Both males and females believed this myth equally, with completion of a course having no significant effect. Research indicates that hormones are not the only factor contributing to the sexual response and menopause does not mean an end to interest in sex. "no physical changes occur during menopause or the climacteric that prevent women from having intercourse or cause them to
have a reduced sex drive" (Hyde, 1986, p. 107). This myth may reflect a belief that sex in older individuals is not important (McCary, 1971; Reinisch, 1990).

This also relates to Myth 28 which states that "Sexual activity rarely occurs after the age of 65." (False) There was a significant gender difference with more males than females believing this myth. With the aging of America, it is important to dispel the Victorian myth that sex is for the young. It must be emphasized that older people do have sexual yearnings and that the psychological and physical need for sexual expression and affection are lifelong (McCary, 1971; Reinisch, 1990).

(Myth 26) "Men are more interested in sex than women." (False) Over one-third of males and females believed this with no significant difference for those who had completed a course in human sexuality. Traditionally, variations in the pursuit of sexual activity and frequency were equated with differences in sex drive. However, research indicates that most of the observed differences in sex drive are due to the sexual socialization process and that gender does not determine a person's interest in sex (Kelly, 1980; Masters, et al, 1986).

The two myths that indicated both a significant course and gender effect were as follows:

(Myth 15) "Sexual intercourse should be avoided during pregnancy." (False) This myth was believed twice as much
by males than females. There is no empirical evidence that sexual intercourse at any stage of pregnancy is harmful to the mother or the baby, unless prohibited by the physician with few exceptions (McCary, 1971; Reinisch, 1990).

(Myth 30) "Regular douching is not necessary to keep the vagina clean." (True) Not surprisingly this myth was believed by twice as many males as females. This myth has been passed down for centuries as important for general health, as a contraceptive measure, and a help for one's love life. Recipes and instructions for douche mixtures have been passed on from one generation to the next. Research has shown that the vagina cleans itself naturally and douching is not necessary. In fact it can interfere with the vagina's natural ability to fight organisms and may even increase a woman's risk of developing pelvic inflammatory disease (PID) (McCary, 1971; Reinisch, 1990).

The following myths also showed a significant effect for those who had completed a course in human sexuality:

(Myth 8) "There is a risk of pregnancy if a man withdraws his penis before he ejaculates." (True) This myth was also among the myths answered correctly by most of the students. However, over twice as many students as compared to those who had completed a course answered this incorrectly, with more males believing this than females. This is an area where a lack of knowledge can increase the risk of an unwanted pregnancy (Hyde, 1986; Kelly, 1980).
(Myth 13) "The removal of the prostate does not reduce a man’s sexual capabilities." (True) An accurate understanding of this myth is particularly important for males who have a high probability of having some form of benign prostatic hypertrophy (noncancerous enlargement) or prostatic cancer (3rd most common cause of cancer death in men) during their lifetime. Depending upon the type of surgery performed, most men should be able to have erections unless further control by hormone therapy is needed (McCary, 1971; Reinisch, 1990).

(Myth 19) "Castration does not always destroy the sex drive completely." (True) An accurate understanding of this myth serves the purpose of disclaiming this as an answer for the punishment and treatment of rapists and sex offenders, and it gives hope to those who have had to undergo an orchidectomy (or in women ovariectomy) due to disease or accident (Hyde, 1986; McCary, 1971; Reinisch, 1990).

The following myths were answered correctly by the majority of the students: "There is a risk of pregnancy if a man withdraws his penis before he ejaculates." (Myth 8); "Gonorrhea and syphilis are the only "true" venereal diseases." (Myth 14); "Simultaneous orgasms are not necessary for sexual compatibility." (Myth 16); "Urination by a woman after having sexual intercourse will not prevent pregnancy." (Myth 18); "Healthy, sexually active people
masturbate." (Myth 21); and "A large penis is not necessary for female sexual satisfaction." (Myth 27). One can only speculate about the reasons for the decline in these particular myths as compared to others. However, it would be safe to say that sex education in schools and sex research reported in books and magazines have contributed to the dispelling of these and other myths. "If the Masters and Johnson material...becomes more visible, it can help to replace the Freudian myths, so that both men and women will be allowed to take the first steps toward their emancipation, where they both can define and enjoy the variety of forms and responses of their own sexuality" (Weil, 1990, p. 199).

An examination of the content of these myths is consistent with Dearth and Cassell (1976) and Taylor (1982) in the areas of attitudinal changes they reported after a course in human sexuality. The present study also found that females scored better than males in areas such as contraception, female sex organs, and venereal disease and males scored better than females regarding male sex organs. Having a course also changed beliefs in myths in areas such as homosexuality and sex drive. These results also support the findings of Hendrick, et al, (1985) who found that females were more responsible and conventional as indicated by their scores in areas regarding risk of pregnancy and venereal disease. In contradiction to the findings of
Fisher, Grenier, et al., (1988) no differences were found in scores between those not interested in taking a course and those who were. It is possible that the small sample size was not sufficient to identify any differences. Additionally, the present study found that friends were listed most frequently as the main source of knowledge about sex, followed by sex education and books and magazines. These results agree with those of Sanders and Mullis (1988) who found that friends were the most cited source of sex information, followed by books, and sex education. It is interesting to note that friends (peers) did not significantly affect beliefs in fewer myths and have been cited as a source in the perpetuation of myths, fallacies, and misconceptions (McCary, 1971).

Whether the results of this study can be generalized to other colleges remains to be seen. The finding that students who received form one of the questionnaire (Group I) and those who received form two (Group II) were significantly different may be due to several factors: sample selection bias may have occurred with group one being largely composed of students from Pscy 115 (Personality and Social Adjustment) courses; the second group was collected toward the end of the quarter as compared to the beginning for Group I and was composed of students from other disciplines; and changing the wording of the true myths to false and the false myths to true may
have resulted in confusing wording and ambiguity.

Conclusion

It is hoped that an examination of these sexual myths may be used by educators, counselors, and health professionals to assist them in determining where intervention would be most effective. Like other short form measures, the Human Sexuality Questionnaire may be used as a stimulus for group discussion and student self-evaluation as part of a course in human sexuality or peer group counseling. It can also be used to stimulate and generate student research and writing on any myth topic. Future research could explore the relationship between beliefs in sexual myths and the following: (a) erotophobia-erotophilia, (b) liberal or conservative sexual orientation, (c) sexual-esteeem, sexual-depression, and sexual preoccupation, (d) culture and ethnicity, (e) race, and (e) religiosity. It could also be used to compare different populations and different regions of the country. Given that the incidence of premarital coitus is over half for high school graduates, it would be important and interesting to evaluate the content and the extent of beliefs in sexual myths at the junior high and high school level (Scales, 1987).

The results of this study indicate that sex education helps to demythologize sex by imparting factual information about sex, thereby reducing the cycle of ignorance and myth
making. It is also hoped that the decrease in myths about sex will result in more realistic sexual expectations leading to less anxiety, doubt, guilt, and depression, and increased sexual adjustment and satisfaction. However, it is clear, due to the disheartening statistics regarding sexual behavior among adolescents and college students, that merely having correct sexual knowledge and dispelling myths is not sufficient to change behavior or to insure sexual intimacy and satisfaction (Cullari & Mikus, 1990).

"Human sexuality is an area in which there is an exquisite conjunction of the biologic and behavioral sciences" (Lief, 1974, p. 492). Strongly held beliefs, values, and attitudes about sex make teaching human sexuality complex and challenging. Given the differential psychological and physical impact that sex has on the lives of both males and females, courses in human sexuality and sex education programs need to integrate the personal and interpersonal aspects of human sexuality along with the anatomical and mechanical aspects. According to Darling and Davidson (1986, p. 416), "The sexual concerns reported by these young men and women point to an apparent failure of the sexual revolution. While the incidence of various sexual behaviors would appear to have changed, a further result has been a preoccupation with the race toward sexual intercourse and the achievement of orgasm. In the process, sensuality, affection, and intimacy have been sidetracked."
Dearth and Cassell (1976, p. 598) suggest "...a greater focus put on how males and females feel about certain areas of human sexuality and on the formation of sexual values." Having an accurate knowledge of the prevailing sexual myths can be a valuable source for addressing the broad range of sexual behavior and sociocultural influences of a well integrated course in human sexuality.
APPENDIX A

HUMAN SEXUALITY QUESTIONNAIRE

The following statements about sex are either true or false. If you think its true, circle "T". If you think its false, circle "F".

1. Physiologically, there is no difference between a vaginal orgasm and a clitoral orgasm. 
2. Alcohol is a sexual stimulant.
3. There is a risk of pregnancy when sexual intercourse takes place during the menstrual period.
4. Masturbation is practiced almost exclusively by men.
5. Participation in sexual activity prior to athletic activity will lower an athlete's performance level.
6. Childhood involvement with a homosexual is not an important cause of homosexuality as an adult.
7. The absence of the hymen (cherry) proves that a girl is not a virgin.
8. There is a risk of pregnancy if a man withdraws his penis before he ejaculates.
9. It is not possible to get HIV (human immunodeficiency virus) from donating blood.
10. Marijuana is an aphrodisiac.
11. For most women sexual intercourse without other stimulation, is not the best method for producing orgasm.
12. It is usually possible to identify gay men and lesbians by their appearance.
13. The removal of the prostate does not reduce a man's sexual capabilities.
14. Gonorrhea and syphilis are the only "true" venereal diseases.
15. Sexual intercourse should be avoided during pregnancy.
16. Simultaneous orgasms are not necessary for sexual compatibility.
17. Blacks generally have a stronger sex drive than whites.
18. Urination by a woman after having sexual intercourse will not prevent pregnancy.
APPENDIX A (continued)

T F 19. Castration does not always destroys the sex drive completely.

T F 20. The larger the penis in its nonerect state, the larger it will be when erect.

T F 21. Healthy, sexually active people masturbate.

T F 22. The risk for contracting the HIV (human immunodeficiency virus) during heterosexual sex is very low.

T F 23. Male homosexuals usually come from families with a dominating mother and a submissive father.

T F 24. Sterilization does not reduce the sex drive of a man or woman.

T F 25. Menopause usually causes a woman's sex drive to decline.

T F 26. Men are more interested in sex than women.

T F 27. A large penis is not necessary for female sexual satisfaction.

T F 28. Sexual activity rarely occurs after the age of 65.

T F 29. Most impotence is caused by psychological problems.

T F 30. Regular douching is not necessary to keep the vagina clean.

Age: ____ Sex: Male ____ Female ____

Marital Status: Single/Never Married ____ Married ____ Divorced ____

Education: Freshman ____ Sophomore ____ Junior ____ Senior ____ Graduate ____

Ethnicity: Black ____ Hispanic ____ Oriental ____ White ____ Other ____

Religion: Catholic ____ Jewish ____ Protestant ____ Other ____

Have you completed a course in human sexuality? Yes ____ No ____

If not, would you be interested in taking a course in the future? Yes ____ No ____

What has been the main source of your knowledge about sex? (Check one or more)

parents ____ sex education classes ____

brothers/sisters ____ church ____

friends ____ movies/television ____

relatives ____ books/magazines ____
APPENDIX B

Student Information Letter

My name is Gigi R. Meltzer and I am a graduate student at California State University, San Bernardino. My thesis research project is in the area of human sexuality. The attached (true/false) questionnaire is completely voluntary and anonymous. It takes approximately 10-12 minutes to complete.

Thank you for your participation. If you would like to receive a copy of the results, along with the correct answers, please remove this cover letter and send your name and address to 238 North Riverside Ave., Rialto, CA., 92376, after May 15, 1992.

Sincerely,

Gigi R. Meltzer

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REFERENCES


